

ITEM 1040 SAMPLE KIND

- 1 Initial plot establishment
2 Remeasurement fixed
3 Replacement plot
9 Remeasurement prism

ITEM 1160 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 1170 CREW TYPE

- 1 Standard field crew
2 QA crew

ITEM 1080 TRAILS OR ROADS

- 0 None within 1 mile
1 Paved road or highway
2 Improved gravel road
3 Improved dirt road
4 Unimproved dirt road
5 Human access trail

ITEM 1100 ROAD ACCESS

- 0 None (no restrictions)
1 Road blocked by locked gate or cable
2 Road blocked by human-made obstruction
3 Road blocked by natural occurrences
4 Posted no motorized vehicle signs
9 Other (specify in plot level notes)

ITEM 1110 PUBLIC USE RESTRICTIONS

- 0 None
1 Keep out / no trespassing
2 No hunting or fishing
3 No dumping
9 Other (specify in plot level notes)

ITEM 1120, 1130 & 1140 RECREATION USE

- 0 No evidence
1 Motor vehicle (4X4, ATV, motorcycle, snowmobile)
2 Horse riding, dog team, ski trails
3 Camping (campfire rings, tent sites)
4 Hiking
5 Hunting / Shooting (bullet or shotgun casings, tree stands)
6 Fishing
7 Boating (physical evidence such as launch sites or docks)
9 Other

ITEM R105 HUMAN DEBRIS

- 0 None
1 Noncombustible synthetic
2 Combustible synthetic
3 Combustible organic

ITEM 1150 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 1090, R106 & R107 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 R108 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 1803 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)

PLOT, CONDITION & SUBPLOT LEVEL SUMMARY

ITEM 2425 PRESENT LAND USE

- 01 Accessible timber land
02 Accessible other forest land (unproductive)
03 Inaccessible / hazardous forest land (if you can see the condition safely)
04 Hazardous forest land
08 Lost subplot (timber land)
09 Lost subplot (other forest)
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(golf course/campground/park)
34 Mining
40 Other non-forest (barren land, rock)
41 Non-census water
42 Marsh
43 Beaches
90 Other not sampled
91 Census water
92 Denied access - land use not classified
93 Hazardous - land use not classified
94 Area not in the sample (Mexico)

ITEM 2202 PRESENT CONDITION STATUS

- 1 Accessible forest land
2 Non-forest land
3 Non-census water
4 Census water
5 Denied access area (contact QA or field supervisor)
6 Area too hazardous to visit (contact QA or field supervisor)
7 Area not in sample (e.g. Canada or Mexico)
9 Lost subplot / past condition data (accessible forest land only)

ITEM 2401 RESERVED STATUS

- 0 Not reserved
1 Reserved

ITEM 2407 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 2402 OWNER GROUP

- 10 US Forest Service
20 Other Federal
30 State & Local Government
40 Private

ITEM 2408 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 2404 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
6 Cover trees (non-tallied)

ITEM 2405 PRESENT REGENERATION STATUS

- 0 Natural
1 Artificial

ITEM 2406 TREE DENSITY

- 1 Initial density class
2 Density class 2 - density different than 1
3 Density class 3 - density different than 1 & 2

ITEM R211 STAND STRUCTURE

- 1 Single-storied
2 Two-storied
3 Multi-storied
4 Nonstocked

ITEM 2411, 2413 & 2415 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 2417, 2419 & 2421 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 2423 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 R212 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 R213 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 R214 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 R216 & R217 FIRE / GRAZING (by domestic animals; must occur on the subplot in forest)

- 0 No evidence of fire / grazing
1 Evidence of fire / grazing

ITEM 3202 PLOT TYPE

- 1 Subplot
2 Microplot

ITEM 3203 BOUNDARY CHANGE

- 0 No change
1 New boundary or boundary has changed
2 Boundary has changed due to previous error
3 Boundary has changed or is a new boundary due to procedural changes

ITEM R401, R403, R405 & R407 INVASIVE EXOTIC PEST 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 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
3101 Japanese honeysuckle
3123 Kudzu
3211 Periwinkle
3251 Chinese / Japanese wisteria
4008 Giant reed
4051 Tall fescue
4055 Cogongrass (japgrass)
4080 Napalese 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 Campher 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 R402, R404, R406 & R408 PERCENT COVERAGE

- 1 Trace <1%
2 1% - 10%
3 11% - 50%
4 >50%
9 The exotic pest plant is found in the forest around the subplot, but does not occur on the subplot

PHOTO NOTATIONS - Submitted by Don VanHouten - AFC

Table with columns: 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)

## 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**

## FOREST TYPES

**185 Pinyon juniper woodland**

**PONDEROSA PINE GROUP**

**221 Ponderosa pine**

**OTHER WESTERN SOFTWOOD GROUP**

**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 understorey. 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 – predominant with the slash pine component are sweetbay, blackgum, loblolly-pine, 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, chinquapin 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, chinquapin 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 – sugaryberry, 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.

**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).

**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 phenological 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 bastic, 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**

**NON STOCKED**

**999 Nonstocked:** The site qualifies as forest but is presently stocked with too few trees to assign a forest type.

**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 <sup>A</sup> (FT)	BEST 12	BEST 12	BEST 12	8" + DIB AT TOP OF GRADING SECTION
DBH, MINIMUM (INCHES)	16 <sup>B</sup>	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 OCCURRENCE. WHORLED KNOTS - ANY NUMBER, IF SUM OF COLLAR DIAMETERS DOES NOT EXCEED 1/3 DIAMETER AT POINT OF OCCURRENCE. 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 <sup>B</sup> 16 20	11 <sup>C</sup> 12	8	
CLEAR CUTTINGS (ON THE 3 BEST FACES): <sup>D</sup> LENGTH, MINIMUM (FEET)	7 5 3	3 3	2	
NUMBER ON FACE (MAXIMUM)	2	2 3	(E)	UN SOUND 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, MINIMUM WITHIN GRADING SECTION (%)	9	9 <sup>F</sup>	50	SWEEP SHALL NOT EXCEED 1/2 SMALL END DIAMETER OR 16' LOG OR 1/4 SMALL DIAMETER OF HALF LOG.

<sup>A</sup> NUMBER IN ( ) ARE ON 12' GRADING ZONE.  
<sup>B</sup> 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.  
<sup>C</sup> IN BASSWOOD & ASH, DIB AT TOP OF GRADING SECTION MUST BE 12' & DBH MUST BE 15'  
<sup>D</sup> GRADE 2 TREES CAN BE 10" DIB AT TOP OF GRADING SECTION IF OTHERWISE MEETING SURFACE REQUIREMENTS FOR SMALL GRADE 1'S.  
<sup>E</sup> A CLEAR CUTTING IS A PORTION OF A FACE FREE FROM DEFECTS, EXTENDING THE WIDTH OF THE FACE. A FACE IS 1/4 THE SURFACE OF THE GRADING SECTION AS DIVIDED LENGTHWISE.  
<sup>F</sup> UNLIMITED.  
<sup>F</sup> 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%.

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	

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	

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-third 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 1/4 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 1/2 inch in diameter, overgrown knots of any size and holes more than 1/4 inch in diameter. Faces may be rotated, if necessary, to obtain the maximum number of clear faces on the grading section.

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

PERCENT OF BOARD-FOOT CULL OF HARDWOOD SAWTIMBER BY 4-Foot SECTION & LOCATION IN THE TREE								
LOG (FT)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>
1 (16)	29	26	24	21				
1 1/2 (24)	19	18	16	16	15			
2 (32)	15	14	13	13	12	11	10	
2 1/2 (40)	12	12	11	11	10	10	9	9
3 (48)	12	10	10	9	9	9	8	7
3 1/2 (56)	10	10	9	9	8	8	8	7
4 (64)	9	9	9	8	8	7	7	7
	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>	13 <sup>th</sup>	14 <sup>th</sup>	15 <sup>th</sup>	16 <sup>th</sup>
2 1/2 (40)	8	8						
3 (48)	7	7	6	5				
3 1/2 (56)	7	6	5	5	4	3		
4 (64)	6	6	5	5	4	4	3	3

PERCENT OF BOARD-FOOT CULL OF SOFTWOOD SAWTIMBER BY 4-Foot SECTION & LOCATION IN THE TREE								
LOG (FT)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>
1 (16)	33	27	21	19				
1 1/2 (24)	26	20	16	15	12	11		
2 (32)	21	17	14	12	10	9	9	8
2 1/2 (40)	19	15	12	10	9	8	7	7
3 (48)	16	13	11	10	8	7	7	6
3 1/2 (56)	13	12	10	9	7	7	6	6
4 (64)	10	9	9	8	7	7	6	6
	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>	13 <sup>th</sup>	14 <sup>th</sup>	15 <sup>th</sup>	16 <sup>th</sup>
2 1/2 (40)	7	6						
3 (48)	6	6	5	5				
3 1/2 (56)	6	5	5	5	5	4		
4 (64)	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)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>
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
44	16	14	12	11	9	7	7	7	6
48	15	13	12	10	8	7	7	6	6
52	14	12	11	9	8	7	6	6	6
56	13	11	10	9	8	6	6	6	6
60	12	11	10	9	7	6	6	6	6
64	11	10	9	9	7	6	6	6	5
68	10	10	9	8	6	6	6	5	5
72	10	9	9	8	6	6	6	5	5
	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>	13 <sup>th</sup>	14 <sup>th</sup>	15 <sup>th</sup>	16 <sup>th</sup>	17 <sup>th</sup>	18 <sup>th</sup>
40	6								
44	6	5							
48	6	5	5						
52	6	5	5	5					
56	6	5	5	5	4				
60	5	5	5	5	4	4			
64	5	5	5	5	4	4	4		
68	5	5	5	4	4	4	4	4	
72	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**

<b>NONFOREST/ DENIED ACCESS / HAZARDOUS PLOTS AND INTENSIFICATIONS</b>																							
Nonforest to nonforest and intensification plots ONLY	STATE	COUNTY	POLT NUMBER	SAMPLE KIND	MANUAL VERSION	CURRENT DATE	PAST DATE	QA STATUS	CREW TYPE	CRUISER NUMBER	GPS COORDINATES						PLOT LEVEL NOTES	PRESENT LAND USE @ PC	PRESENT CONDITION STATUS @ PC	NEW PAST LAND USE @ PC	NEW PAST CONDITION STATUS @ PC	OLD LAND USE @ PC	
	1010	1020	1030	1040	1050	1060	R101	1160	1170	R102	1803	1804	2425	2202	2424	R202	R219	1190	2425	2202	2424	R202	R219
*NF TO NF / DENIED ACCESS / HAZARDOUS	X	X	X	1	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			
*NF TO NF / DENIED ACCESS / HAZARDOUS	X	X	X	2/9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INTENSIFICATION	X	X	X		X	X		X	X	X								X	X	X			

Additional procedures for intensification plots – Record land use, data, cruiser code and cruiser initials on the back of the photo.  
 \*NF = Nonforest/Denied Access/Hazardous (a plot that has NO accessible forested conditions on any of the four subplots)

↔ **PLOT ID and GPS must be completed for all plot types (GPS not required for intensifications)** ↔

<b>PLOT DATA</b>																
PLOT TYPE		NUMBER OF ACCESSIBLE FOREST LAND CONDITIONS	TREE ENTRIES	# PRISM PTS REMEAS. OR # OF SUBPLOT CENTERS REVERTED (SK = 9 ONLY)	TRAILS OR ROADS	ROAD ACCESS	PUBLIC USE RESTRICTIONS	RECREATION USE 1	RECREATION USE 2	RECREATION USE 3	HUMAN DEBRIS	WATER ON PLOT	IMPROVED ROAD	URBAN OR BUILT-UP	AGRICULTURAL LAND	SIZE OF CONTIGUOUS FOREST
PAST	CURRENT	R103	R105	R104	1080	1100	1110	1120	1130	1140	R103	1150	1090	R107	R108	R109
F	F	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NF	F	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F	NF	X	X	X												

F = Forest ( a plot that is 100% or partially forested)  
 NF = Nonforest/Denied Access/Hazardous (a plot that has NO accessible forested conditions on any of the four subplots)

<b>CONDITION DATA (based on condition status)</b>							
PRESENT COND. STATUS →		FOREST	FOREST	NONFOREST	NONFOREST	INACCESSIBLE/ ACCESS DENIED	INACCESSIBLE/ ACCESS DENIED
NEW PAST COND. STATUS →		FOREST	NONFOREST	FOREST	NONFOREST	FOREST	INACCESSIBLE/ ACCESS DENIED
CONDITION ID	CONDITION CLASS NUMBER	X	X	X	X	X	X
	PRESENT LAND USE	X	X	X	X	X	X
	PRESENT CONDITION STATUS	X	X	X	X	X	X
	NEW PAST LAND USE	X	X	X	X	X	X
	NEW PAST CONDITION STATUS	X	X	X	X	X	X
	OLD LAND USE	●	●	●	●	●	●
	NON-FOREST YEAR			X			
CONDITION DESCRIPTORS	SIMILAR IDENTIFIED CONDITION CLASS NUMBER (Sample Kind 2 only)	◆	◆	◆	◆	◆	
	RESERVED STATUS	X	X				
	OWNER CLASS	X	X				
	OWNER GROUP	X	X				
	PRIVATE OWNER INDUSTRIAL STATUS	+	+				
	TRACT SIZE (TOTAL ACRES)	@	@				
	PERCENT FOREST	@	@				
	PRESENT FOREST TYPE	X	X				
	NEW PAST FOREST TYPE	X					
	STAND SIZE CLASS	X	X				
	PRESENT REGENERATION STATUS	X	X				
	NEW PAST REGENERATION STATUS	X					
	ARTIFICIAL REGEN. SPECIES	X	X				
	TREE DENSITY	X	X				
	STAND AGE	X	X				
	STAND STRUCTURE	X	X				
	DISTURBANCE AND YR (UP TO THREE)	X	X				
	TREATMENT AND YR (UP TO THREE)	X	X				
	PHYSIO CLASS	X	X				
	OPERABILITY	X	X				
WATER SOURCE	X	X					
DISTANCE TO WATER SOURCE	X	X					
SITE CLASS	X	X					
FIRE	X	X					
GRAZING	X	X					

+ Record this item only when owner group = 40  
 @ Record this item only when owner group = 40 and private owner industrial status = 0  
 ◆ Record this item only on Sample Kind 2 reverted or land-cleared conditions. If >0, only record required items before the bold line.  
 ● Old land use is recorded for all conditions on SK = 2, condition 1 only on SK = 9 and is not required on SK = 1 or 3 plots.

## TREE LEVEL SUMMARY

<b>ITEM 5080 SPECIES</b>	403 pignut hickory	757 velvet mesquite
010 fir spp.	404 pecan	758 screwbean mesquite
012 balsam fir	405 shellbark hickory	760 cherry and plum spp.
016 Fraser fir	406 nutmeg hickory	761 pin cherry, fire cherry
+043 Atlantic white-cedar	407 shagbark hickory	762 black cherry
051 Arizona cypress	408 black hickory	763 chokecherry
057 redcedar / juniper spp.	409 mockernut hickory	766 wild plum
059 redberry juniper (w)	410 sand hickory	800 oak spp. - deciduous
061 Ashe juniper	421 American chestnut	+802 white oak
063 alligator juniper (w)	422 Allegheny chinkapin	803 Arizona white/gray oak (w)
066 Rocky Mount. juniper (w)	423 Ozark chinkapin	804 swamp white oak
067 southern redcedar	450 catalpa spp.	+806 scarlet oak
068 eastern redcedar	451 southern catalpa	808 Durand oak
069 one-seed juniper (w)	452 northern catalpa	809 northern pin oak
090 spruce spp.	460 hackberry spp.	810 Emery oak (w)
091 Norway spruce	461 sugarberry	+812 southern red oak
094 white spruce	462 hackberry	+813 cherrybark oak
095 black spruce	463 netleaf hackberry	814 Gambel oak (w)
096 blue spruce	471 eastern redbud	816 bear oak, scrub oak
097 red spruce	481 yellowwood	+817 shingle oak
100 pine spp. (regional)	491 flowering dogwood	819 turkey oak
106 common pinyon (w)	500 hawthorn	820 laurel oak
+107 sand pine	501 cockspur hawthorn	822 overcup oak
+110 shortleaf pine	502 downy hawthorn	823 bur oak
+111 slash pine	510 eucalyptus	824 blackjack oak
113 limber pine	521 common persimmon	825 swamp chestnut oak
115 spruce pine	530 American beech	826 chinkapin oak
+121 longleaf pine	541 ash spp.	+827 water oak
122 ponderosa pine	541 white ash	828 Nuttall oak
123 Table mountain pine	543 black ash	+830 pin oak
125 red pine	544 green ash	831 willow oak
126 pitch pine	545 pumpkin ash	+832 chestnut oak
+128 pond pine	546 blue ash	+833 northern red oak
+129 eastern white pine	547 velvet ash	834 Shumard oak
130 Scotch pine	548 Carolina ash	+835 post oak
+131 loblolly pine	551 waterlocust	836 Delta post oak
+132 Virginia pine	552 honeylocust	+837 black oak
136 Austrian-pine	555 loblolly-bay	838 live oak
140 Mexican pinyon pine (w)	571 Kentucky coffeetree	840 dwarf (sand) post oak
150 Caribbean pine (FL)	580 silverbell	841 dwarf (sand) live oak
221 baldcypress	591 American holly	842 bluejack oak
222 pondcypress	600 walnut spp.	843 silverleaf oak (w)
234 Florida yew (FL)	601 butternut	844 Oglethorpe oak
241 northern white-cedar	602 black walnut	845 dwarf chinkapin oak
252 Florida torrey	605 Texas walnut	850 oak spp.—evergreen (w)
260 hemlock spp.	+611 sweetgum	852 torchwood (FL)
261 eastern hemlock	+621 yellow-poplar	853 pond apple (FL)
262 Carolina hemlock	641 Osage-orange	854 gumbo limbo (FL)
270 Australian pine	650 magnolia spp.	855 camphor tree (FL)
299 unknown dead conifer	651 cucumbertree	856 fiddlewood (FL)
310 maple spp.	652 southern magnolia	857 citrus spp. (FL)
311 Florida maple	653 sweetbay	863 pigeon plum, tietongue (FL)
313 boxelder	654 bigleaf magnolia	864 soldierwood (FL)
314 black maple	655 mountain magnolia	865 geiger tree (FL)
315 striped maple	660 apple spp.	866 carrotwood (FL)
316 red maple	680 mulberry spp.	873 red stopper (FL)
317 silver maple	681 white mulberry	874 inkwood, butterbough (FL)
318 sugar maple	682 red mulberry	876 strangler fig (FL)
319 mountain maple	690 gum, tupelo spp. (regional)	877 shortleaf fig, wild banyan tree (FL)
320 Norway maple	691 water tupelo	
323 chalk maple	692 Ogechee tupelo	882 blolly, beeftree (FL)
330 buckeye/horsechestnut spp	693 blackgum (upland)	883 manchineel (FL)
331 Ohio buckeye	694 lowland blackgum (swamp tupelo)	884 false tamarind (FL)
332 yellow buckeye	701 eastern hophornbeam, ironwood	885 mango (FL)
334 Texas buckeye	711 sourwood	886 poisonwood (FL)
341 ailanthus	712 palourdonia, empress-tree	887 fishpoison tree, (FL)
345 mimosa, silktree	721 redbay	888 shefflera, octopus tree (FL)
351 red alder	722 water-elm, plantanetree	890 false mastic (FL)
355 European alder	731 sycamore	891 white bully, willow bastic (FL)
356 serviceberry spp.	740 cottonwood, poplar spp.	895 paradise tree (FL)
367 pawpaw	741 balsam poplar	896 java plum (FL)
370 birch spp.	+742 eastern cottonwood	897 tamarind (FL)
371 yellow birch	743 bigtooth aspen	898 other tropical (FL)
372 sweet birch	744 swamp cottonwood	901 black locust
373 river birch	746 quaking aspen	902 New Mexico locust
374 water birch	748 Rio Grande cottonwood, Fremont poplar	906 paurotis palm (FL)
379 gray birch	749 narrowleaf poplar	907 silver palm (FL)
381 chittamwood/gum bumelia	752 silver poplar	908 coconut palm (FL)
391 American hornbeam, blue beech, musclewood	755 mesquite spp.	909 royal palm (FL)
400 hickory spp.	756 western honey mesquite	911 other sable palm spp.
401 water hickory		912 sable palmetto (regional)
402 bitternut hickory		913 key thatch palm (FL)
		914 Florida thatch palm (FL)

915 other palms (FL)
919 western soapberry
920 willow
921 peachleaf willow
922 black willow
927 white willow
931 sassafras
935 American mountain-ash
936 European mountain-ash
940 Mahogany (FL)
950 basswood spp.
951 American basswood
952 white basswood
953 Carolina basswood
970 elm spp.
971 winged elm
972 American elm
973 cedar elm
974 Siberian elm
975 slippery elm
976 September elm
977 rock elm

986 black mangrove (FL)
987 buttonwood mangrove (FL)
988 white mangrove (FL)
989 red mangrove
992 malaleuca
993 chinaberry
994 Chinese tallowtree
995 tung-oil-tree
996 smoketree
997 Russian olive
998 miscellaneous species (regional)
999 unknown dead hardwood

+ indicates highest priority site tree species  
(w) indicates measure @ root collar.  
(FL) indicates Florida only species.

**ITEM 5060, R507, R509 & R510 TREE STATUS**

0 No status
1 Live tree
2 Dead tree
3 Removal
4 Missing

**ITEM 5061 NEW TREE RECONCILE (remeasure plots only)**

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

**ITEM 5070 LEAN ANGLE**

0 Standing < 45 degrees of lean
1 Down > 45 degrees of lean

**ITEM 5100 DIAMETER CHECK**

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

**ITEM R503 TREE CLASS**

2 Growing stock
3 Rough cull
4 Rotten cull

**ITEM 5140 LENGTH METHOD**

1 Total & actual lengths field measured
2 Total length est., actual length measured
3 Total & actual lengths estimated

**ITEM R505 FUSIFORM / COMANDRA RUST & HARDWOOD DIEBACK INCIDENCE**

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

**ITEM R506 DIEBACK SEVERITY**

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

**ITEM 5181 & 5184 DAMAGE LOCATION**

0 No damage
1 Roots (exposed) & stump (12" or 30cm in height from ground level on uphill side)
2 Roots & lower bole
3 Lower bole (lower half of trunk between stump & base of live crown)
4 Lower & upper bole
5 Upper bole (upper half of trunk between stump & base of live crown)
6 Crownstem (main stem within live crown area above base of live crown)
7 Branches (>1" @ point of attachment to main crown stem w/in live crown area)
8 Buds & shoots (most recent years growth)
9 Foliage

**ITEM 5182 & 5185 DAMAGE TYPE..THRESHOLD**

01 Canker, gall.....20%
02 Conks, fruiting bodies, & signs of advanced decay .....none
03 Open wounds .....20%
04 Resinosis or gummosis .....20%
05 Cracks & seams (> 5' in length).....none
11 Broken bole or roots (<3' from bole) .....none
12 Brooms on roots or bole .....none
13 Broken or dead roots (>3' from bole) .....20%
20 Vines in crown .....20%
21 Loss of apical dominance, dead terminal.....1%
22 Broken or dead branches .....20%
23 Excessive branching or brooms.....0%
24* Damaged foliage, buds or shoots.....30%
25* Discoloration of foliage.....30%
31 Other.....none

\*24 & 25 recorded only from June to August

**ITEM 5183 & 5186 DAMAGE SEVERITY**

0 01-09	5 50-59
1 10-19	6 60-69
2 20-29	7 70-79
3 30-39	8 80-89
4 40-49	9 90-99

**DAMAGE LOCATION LIMITS**

Damage.....Location

1-5.....Woody
11-13.....Roots / Bole
20-25.....Crown area

**ITEM 5190 CAUSE OF DEATH**

10 Insect damage
20 Disease damage
30 Fire damage
40 Animal damage
50 Weather damage
60 Vegetation (suppression)
70 Unknown / other
80 Human
81 Landcleared alive [prism trees ONLY]
82 Landcleared dead (died after or as a result of landclearing activity) [prism trees ONLY]
83 Landcleared cut [prism trees ONLY]
90 Physical (hit by falling tree)

**ITEM 5210 DECAY CLASS**

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

**ITEM 5220 UTILIZATION CLASS**

00 Not utilized
11 Commercial utilization
12 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
05	07.10	07.24	07.38	07.67	07.87	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	16.19	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	45.58	45.73	46.01	46.01	46.15	46.30	46.44	46.58	46.72
33	46.86	47.00	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	55.67	55.95	55.95	56.09	56.24	56.38	56.52	56.66
40	56.80	56.95	57.09	57.37	57.37	57.51	57.66	57.80	57.94	58.08

**REQUIRED ITEM TREE TALLY SUMMARY**

SK 2 MICROPLOTS												
Table shows which Tree Status codes to record and where to refer for required items. Stems that are on both the old co-located microplot (subplot center) and the new offset microplot are recorded as one entry.												
Tree location	Co-located microplot ONLY (old microplot)				Co-located AND offset microplot (overlap area)				Offset microplot ONLY (new microplot)			
	Present tree status	Co-located microplot tree status	Present tree status	Co-located microplot tree status	Present tree status	Co-located microplot tree status	Present tree status	Co-located microplot tree status				
Past size: sapling Current size: sapling	--	0, 1, 2, 3, 4	1	1	1	1	1	1	1	1	1	1
Required Item Summary	Remeasurement of Co-located Microplot				Measurement of Fixed-Radius Plots				Measurement of Fixed-Radius Plots			
Past size: sapling Current size: pole/saw	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	N/A	N/A	N/A	N/A	N/A	N/A
Required Item Summary	Measurement of Fixed-Radius Plots				Measurement of Fixed-Radius Plots				N/A			

  

REMEASUREMENT OF CO-LOCATED MICROPLOT																	
Items required for saplings located ONLY on the co-located microplot	Subplot number	Tree record number	Condition class number	Tree Status			Diameter				Length				Utilization class		
				Co-located microplot	New tree reconcile	Species	Present	Past	Diameter check	Length to diameter point	Tree class	Total	Actual	Length method		Cause of death	Mortality year
ITEM NUMBER	5010	5020	5030	R507	5061	5080	5092	5091	5100	5230	R503	5120	5130	5140	5190	5200	5220
No history	X	X	X	0		X											
Live sapling	X	X	X	1	§	X	X	▲	X	X	X	X	X	X			
Live sapling in landclearing	X	X	X	1		X											
Mortality sapling	X	X	X	2		X									X	X	
Removal sapling	X	X	X	3		X									X	X	X
Missing	X	X	X	4		X											

▲ Record for remeasure trees only.  
§ Record only for saplings that were missed on the last inventory. Valid code = 3.  
Note: If the sapling has grown to pole size, you always record the items listed in the "Measurement of Fixed-Radius Plots". This table is for saplings that have not grown to 5.0" and are only on the old co-located microplot. For more specific information, see Supplement A in the manual.

SK 9 PLOTS:																
Table shows which Tree Status codes to record and where to refer for required items. Stems that are on both the old prism plot and the new mapped plot are recorded as one entry.																
Tree/sapling location	Prism plot ONLY				Prism plot AND mapped subplot (overlap area)				New mapped subplot ONLY							
Applicable tree status codes	Prism tree status = 0, 1, 2, 3, 4				Present tree status = 1, 2 Prism tree status = 1, 2				Present tree status = 1, 2							
Required Item Summary	Remeasurement of Variable-Radius Prism Plots				Measurement of Fixed-Radius Plots				Measurement of Fixed-Radius Plots							
REMEASUREMENT OF VARIABLE-RADIUS PRISM PLOTS																
Items required for trees and saplings located ONLY on the variable-radius prism plot	Prism point # / tree #	Tree Status			Diameter				Length				Utilization class			
		Prism	New tree reconcile	Species	Present	Past	Diameter check	Length to diameter point	Tree class	% rotten / missing cull	Total	Actual		Length method	Cause of death	Mortality year / nonforest year
ITEM NUMBER	R508	R509	5061	5080	5092	5091	5100	5230	R503	5110	5120	5130	5140	5190	5200	5220
No history	X	0		X		X										
Live sapling	X	1	♣	X	▲	X	X	X			X	X	X			
Live pole/sawtimber	X	1	♣	X	▲	X	X	X	X	X	X	X	X			
Mortality sapling	X	2	♣	X	▲									X	X	
Mortality pole/sawtimber	X	2	♣	X	▲				X	§				X	X	
Removal (cut, killed or landcleared)	X	3		X		X								X	X	X
Missing	X	4		X		X										

♣ Record for any missed live tree and for through growth trees on 6.8' microplot on prism point 1-3. Valid codes = 2 or 3.  
▲ Record for remeasure trees only.  
§ Record if TREE CLASS = 2 or 3.  
Note: If the tree is on both the prism point and the new subplot/microplot, you must also record the items listed in "Measurement of the Fixed-Radius Plots" if they have not already been recorded. For more specific information, see Supplement B in the manual.

MEASUREMENT OF FIXED-RADIUS PLOTS																
Items required for ALL trees located on the fixed-radius subplot.	Item Number	Tree Status														
		No history (must explain in tree notes)	Live sapling	Live pole	Live sawtimber	Live tree in landclearing	Standing dead	Mortality sapling	Mortality pole/saw	Standing dead tree in landclearing	Removal (cut or killed by humans)	Missing**	No tree AND no sapling tally			
Subplot Number	5010	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tree Record Number	5020	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Condition Class Number	5030	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Azimuth	5040		X	X	X		@		@		@					
Horizontal Distance	5050		X	X	X		@		@		@					
Tree Status	5060	0	1	1	1	1	2	2	2	2	3	4				
◆ Past	R510	1 or 2	1	1	1	1	2	1	1	2	1 or 2	1 or 2				
⊕ New Tree Reconcile	5061		1 or 3	1, 2, 3	1, 2, 3		1, 2, 4		1, 2, 3		*					
Lean Angle	5070			X	X		X		X		*					
Species	5080	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diameter	5092		X	X	X		@		@		@					
Past	5091	X	◆	◆	◆	X	◆	X	X	X	X	X	X	X	X	X
Diameter Check	5100		X	X	X		@		@		@					
Length to Diameter Point	5230		X	X	X		@		@		@					
Tree Class	R503		X	X	X				X							
Crown Class	5150		X	X	X											
Compacted Crown Ratio	5170		X	X	X											
Tree Grade	R504				X											
Cull	Board Foot	R502			X											
% Rotten/Missing	5110			X	X				\$							
Length	Total	5120		X	X	X										
Actual	5130		X	X	X		@		@		@					
Length Method	5140		X	X	X		@		@		@					
Fusiform/Rust/Dieback	R505			X	X											
Dieback Severity	R506			X	X											
Damage 1 & 2	Location	5181			Y	Y										
Type	5182				Y	Y										
Severity	5183				Y	Y										
5186																
Cause of Death	5190								X	X		X				
Mortality Year	5200								X	X		X				
Decay Class	5210						@		@		@					
Utilization Class	5220						Z	Z	Z	Z		Z		X		

◆ SK 2 PLOTS ONLY: Remeasure trees only. See "Remeasurement of Co-located Microplot" for sapling requirements on the co-located microplot.  
⊕ SK 2 PLOTS ONLY: Record for any new tree or sapling on a remeasured subplot or remeasured microplot. Past tree status is not required if this item is recorded.  
@ Record if tree is in a forested condition and is 5.0" DBH or larger, has minimum height of 4.5' and is considered standing.  
\$ Record if TREE CLASS = 2 or 3.  
Y Always record DAMAGE LOCATION 1. If location 1 > 0, then DAMAGE LOCATION 2 must be recorded.  
Z Record utilization code in TREE NOTES only. This should be recorded for all live and standing dead tally trees that have been cut above the diameter point. Does not include naturally swell-buttressed trees where it is normal to cut above 4.5'.  
\*\* Code is used for trees that are missing due to natural causes such as fire, landslide, erosion, etc.  
\* Record only if tree is in a forested condition.  
● Situation applicable only on SK 2 PLOTS