

## Proposed Items To Be Added To The EW Database Format

Live tree cavities (Items 93 and 94)  
Total tree cavities (Item 95)  
Seed source (Item 14)  
Accessibility to forest condition (Item 23)  
Access road (Item 24)  
Operability within forest condition (Item 25)  
Past treatments (Items 26-28)  
Past disturbance/Successional change (Item 29)  
Size of forest condition (Item 30)  
Shape of forest condition (Item 31)  
Treatment opportunity (Item 32)  
Old owner class (Item 35)  
Landscape characterization (Item 74e)  
Cover (Item 45)  
Forest type diversity (Item 46)  
Vegetative concealment (Item 47)  
Number of remnant trees (Item 48)  
Edge (Item 49)  
Number of snags (Item 50)  
People use (Item 51)  
Trails (Item 53)  
Posted (Item 54)  
Grazing intensity (Item 55)  
Livestock fencing (Item 56)  
Water type-Acre (Item 57)  
Distance to permanent water (Item 58)  
Litter depth (Item 59)  
Humus depth (Item 60)  
Soil texture (Item 61)  
Soil erosion (Item 62)  
Season of the Year (Item 68)  
Percent forest (Item 64)

Others:

New tree height  
Location coordinates  
Occurrence of invasive plants  
Wetlands

**Variables listed to the left  
are links to their definitions**

## Definitions And Methodology

### 6.81 Live Tree Cavities (Items 93 and 94)

At each of the inventory sample points, examine each live tree 5.0 inches d.b.h. and larger for cavities. For the two largest cavities record a 3-digit code to indicate the size of the cavity entrance hole, location of the cavity in the tree, and the condition of the cavity. The left digit will indicate the cavity hole size, the middle digit indicates the location of the cavity, and the right digit identifies the condition of the cavity.

To qualify as a cavity, the entrance hole must be 1.0 inch or larger in the main stem, fork, or larger limb. (A large limb must be greater than 8.0 inches in diameter o.b.) For softwoods, generally the condition of the cavity will be based on the color of the resin and presence of resin wells. For hardwoods or softwoods, the best cavity is one that leads to an internal den. A good den has sufficient diameter and depth within the heartwood of the tree. A poor cavity is one that consists of a simple opening in the exterior portion that does not lead to a den.

<u>Left digit</u>		<u>Middle digit</u>		<u>Right digit</u>	
<u>Code</u>	<u>Size of opening</u>	<u>Code</u>	<u>Location of cavity</u>	<u>Code</u>	<u>Condition</u>
	(inches)		(Feet)		
1	1	1	0-1	1	Resin flow moist, clear, bright yellow, or amber color. Resin wells bright rusty red, or orange.
2	2	2	2-5		
3	3	3	6-9		
4	4	4	10-19		
5	5	5	20-29		
6	6	6	30-39		
7	7	7	40-49	2	Resin flow dry, dull yellow color. No signs of fresh chipping or resin wells.
8	8	8	50-59		
9	9	9+	60+		
				3	Resin flow dry chalky white, or grey. No sign of fresh resin wells.
				4	Tree cavity without good den characteristics.
				5	Tree cavity with good den characteristics.

6.82 Total Cavities (Item 95)

On all inventory points, examine each live tree 5.0 inches d.b.h. and larger for cavities. Record a 1-digit code to indicate the total number of cavities in each tree. If the number of cavities exceeds 9, record code 9. A code 0 will be recorded for a live tree without a cavity.

6.9 AREA CLASSIFICATION

6.91 Stand-Area Description Items

6.916 Seed source (Item 14)

Record prospects for natural seeding by use of a 1-digit code. A seed source will be considered adequate where there are enough seed trees to provide at least 10 square feet of basal area per acre. All seed trees that qualify should be well spaced on the acre. If both softwood and hardwood seed trees occur on the sample acre, the seed source will be classified on a priority basis from yellow pines to other hardwood seed trees. The following table shows the number of seed trees per acre, by diameter class, to have the equivalent of 10 sq. feet of basal area per acre.

<u>D.b.h. (inches)</u>	<u>Number of well-spaced seed trees per acre for 10 sq. ft. of basal area/acre</u>
9	23
10	18
11	15
12	13
13	10
14	9
15	8
16	7
17 - 18	6
19 - 20	5
20+	4

6.933 Accessibility to the forest condition (Item 23)

Record as a 1-digit code. This item will identify the relative ease or difficulty in getting men and equipment to the edge of the forest condition being described and measured.

<u>Code</u>	<u>Accessibility to forest condition</u>
<b>1</b>	<b>The forest condition is easily accessible</b>
2	Roads into the area could be easily built

- 3 Roads into the area would be difficult to build
- 4 Roads would be very difficult or impractical to build due to slope, water or other site limitations

6.934 Access road (Item 24)

This site will describe the proximity of the sample location to an access road and the terrain conditions between the road and the sample location. An access road is defined as a road from which the movement of equipment (skidders and other logging equipment) through the forest to the sample location is feasible. The following obstacles, which effectively block the movement of equipment to the sample location from a road, will prevent that road from being considered an access road:

- (1) unbridged streams and canals 30 feet or greater in width
- (2) other permanent water that cannot be crossed or circumvented without major improvements
- (3) railroads
- (4) urban buildup between a road and the sample location
- (5) other serious obstacles (sheer cliffs, etc.) which cannot be avoided in moving from the road in question to the sample location

Access roads may be publicly or privately owned, improved or unimproved, farm or woods roads, as long as they are passable (during some season of the year) for small logging trucks with few or no improvements. Interstate highways and other limited access, major highways cannot be considered access roads.

At each forest location, look for the occurrence of potential access roads within one mile of the sample location. Use the aerial photograph and ground observations in identifying potential access roads. Starting with the road nearest to the sample location, determine if the road qualifies as an access road according to the criteria mentioned above. If not, apply the criteria to the next nearest road, and so on. Record a 3-digit code to describe the access road nearest to the sample location. The first two digits will denote the distance from the access road to the plot center. The last digit will describe the general terrain conditions in the area between the access road and the sample location. Do not consider an existing terrain condition as an impediment to moving equipment if the conditions can be easily circumvented in moving from the access road to the plot center.

Code                      Distance (straight-line distance in feet between access road and plot center)

01	00 - 100
02	101 - 200
03	201 - 300
04	301 -400
....	.....
....	.....
52	5,101-5,200

<u>Code</u>	<u>Terrain conditions</u>
0	No terrain conditions exist which would seriously impede the movement of logging equipment (skidders and other equipment) from the access road to the sample location)
1	Streams 15 to 29 feet wide or other water problems which would impede the movement of logging equipment
2	Slopes 30-49 percent
3	Slopes 50 percent and greater
4	1 and 2
5	1 and 3

Record a code 000 if no access road exits within one mile of the sample location.

#### 6.935 Operability within forest condition (Item 25)

Record as a 1-digit code. Normally the operation of equipment within the forest condition can be limited by water conditions, excessive slope, badly broken terrain or other adverse vegetative conditions.

#### Code Operability within forest condition

- 1 No problem under normal conditions.
- 2 Limited to seasonal use due to water condition in wet weather.
- 3 Moderate slopes averaging 20-39 percent, irregular terrain, or other ground conditions that limit the type of equipment that could be operated within the forest condition.
- 4 Mixed wet and dry areas within forest condition typical of multichanneled streams with intermixed dry areas or islands.
- 5 Severe slopes averaging 40-49 percent, broken terrain, or other adverse ground conditions that drastically limit equipment use.
- 6 Adverse operating conditions caused by year round water problems.
- 7 Slopes of 50 percent or more.

#### 6.936 Past treatments (Items 26-28)

Identify up to three significant treatments that occurred during the remeasurement period and record a 1-digit code for each in the order in which they occurred. A typical sequence of treatments might be "harvest - site preparation - artificial regeneration (forest)"--codes 1-5-6. Single treatments are also common, e.g., "selective cutting and high grading"--codes 2-0-0. The same treatment can be recorded twice. For instance, commercial thinning occurring two times during the remeasurement period--codes 3-3-0. The only valid codes for a sample kind 2 cleared plot are 0 or 1.

Code

Past treatment

- 0 None - no significant treatment
- 1 Harvest - the liquidation of a merchantable-size stand of timber leaving insufficient stocking of residual trees for a manageable stand. Harvesting implies a significantly lower residual stand stocking and should provide the opportunity for a new stand to be established either by natural regeneration or by artificial means. Close attention should be paid to those plots with an old treatment opportunity of 8 (Item 32) and where a treatment occurred over the remeasurement period. Crews should use careful judgment in determining whether the treatment should be coded as a harvest, other cutting, or just site preparation.
- 2 Selective cutting and high grading - the removal of selected trees (usually those of highest value) from a merchantable stand of timber, leaving sufficient stocking of residual trees for a manageable stand of timber (excludes commercial thinning and other stand improvements used to enhance the growth and quality of the resulting stand).
- 3 Commercial thinning - the removal of trees from an immature stand of merchantable timber leaving sufficient stocking of growing-stock trees to feature in future stand development (excludes selective cutting and high grading).
- 4 Other stand improvement - the cleaning, release, or other stand improvement treatments (excluding commercial thinning) of an immature stand of timber leaving sufficient stocking of growing-stock trees to feature in future stand development.
- 5 Site preparation - clearing, prescribed burning, drainage, chopping, disking, bedding, tree girdling, poisoning, or other practices clearly intended to prepare a site for either natural or artificial regeneration.
- 6 Artificial regeneration (forest) - the successful establishment of trees for timber production through planting or direct seeding of forest land.
- 7 Artificial regeneration (nonforest) - the establishment of trees for timber production through planting or direct seeding of nonforest land (sample kind 1 plots only).
- 8 Natural regeneration (forest) - the successful establishment of trees for timber production on forest land from natural sources.
- 9 Other cutting - all other miscellaneous cutting. This code should be used when treatment that has occurred has little or no impact on present or future stand conditions. Example of this could be a few trees cut for firewood or fencepost

and those previously unmanageable stands that are cut and are still in essentially the same condition as prior to timber cutting.

#### 6.937 Past disturbance/successional change (Item 29)

Identify any significant disturbances that occurred during the remeasurement period. Natural reversion (code 9) will take precedence over the true disturbances (codes 1-8) for samples in areas that have reverted naturally to forest (i.e., sample kind 1 and not planted). In all other cases, if more than one disturbance is identified, record the one having the most impact on the stand. A disturbance need not have actually occurred on the sample acre, as long as it has directly affected the sample acre.

<u>Code</u>	<u>Past disturbance/successional change</u>
0	<u>None</u> - no significant disturbance/change.
1	<u>Disease</u> - significant damage from disease.
2	<u>Insects</u> - significant damage from insects.
3	<u>Wildfire</u> - significant damage from fire.
4	<u>Weather</u> - significant damage from wind, ice, water, or other weather-related phenomena.
5	<u>Animals</u> - significant damage from beavers or other wild animals.
6	<u>Prescribed burning</u> - the occurrence of fire (excluding wildfire) not used as a site preparation tool.
7	<u>Grazing</u> - grazing activity by domestic livestock that retards the development of the understory.
8	<u>Other human-caused disturbance</u> - turpentining, construction of woods roads, firebreaks, trash pits, man-caused flooding and drainage, etc.
9	<u>Natural reversion</u> - the successional reversion of nonforest land to forest through natural seeding or sprouting (sample kind 1 plots only).

#### 6.938 Size of forest condition (Item 30)

Record to the nearest acre the size of the forest condition containing the sample location. Size of forest condition will be recorded as a 3-digit code and range from 001-999. All forest conditions over 999 acres will be coded 999. Long, narrow stringers and typical stream margins that have no definite size will be coded 999. Sample locations falling in forest conditions just large enough to hold 3 to 10 BA-37.5 inventory points will be coded 001.

#### 6.939 Shape of forest condition (Item 31)

This 1-digit code will be used to describe the general shape of the forest condition being sampled.

<u>Code</u>	<u>Shape of forest condition</u>
1	A regular shaped area having a customary width-to-length relationship and a normal boundary.
2	A central area having one or more protrusions, extensions, or irregular boundary. Sample location is in the central area.
3	A central area having one or more protrusions, extensions, or other irregular boundary. Sample location is not <u>in</u> the central area.
4	Two or more distinct areas loosely linked together by strips, stringers, or bands of similar forest conditions. Sample location is in the distinct area.
5	Two or more distinct areas loosely linked together by strips, stringers, or bands of similar forest conditions. Sample location <u>is not</u> in the distinct area.
6	Strips, stringers, or bands of forest land typical of long, narrow stream margins, narrow cypress strands, and long bands of reverted land.

#### 6.940 Treatment opportunity (Item 32)

At each sample location established on commercial forest land, record a 1-digit code to identify the current management opportunity for improving the existing conditions in the condition sampled. Before making the classification, the field crew must determine whether or not there is a manageable stand. For FIA purposes, a manageable stand must have, as a minimum, an acceptable number of well-spaced growing-stock trees that could be featured together in evaluating treatment needs. The manageable stand may include growing-stock trees of any size or species composition as long as they are suited, in the aggregate, to a single primary treatment opportunity. Damaged growing-stock trees may be included in the manageable stand, but cull trees, inhibiting vegetation, and individual trees that would be incompatible in the stand will be excluded. Forest conditions lacking an acceptable level of stocking will always require a treatment of regeneration without site preparation or regeneration after site preparation. This decision will be based on treatment needed between present and future inventory.

A minimum acceptable level of stocking for manageable stands will vary by site and individual conditions. Therefore, a range of from 50- to 60-percent stocking will be used as a minimum stocking range. Seedlings and saplings may be included in a manageable stand even though overtopped or in the understory. Count established seedlings of commercial species regardless of their size. Seedling counts made for manageable stand determination will not necessarily agree with seedling counts made for normal stocking (Items 17-18). Special care must be used when identifying manageable stand trees in uneven-aged stands. When a manageable stand exists in both the larger overstory trees and in the understory seedlings and saplings, base treatment opportunity on the overstory trees. If understory seedlings and saplings



make up the manageable stand, then the overstory trees will normally be scheduled for removal during treatment, i.e. "clear felling."

When the opportunity comes down to being either "no treatment needed" or "cleaning, release, or other intermediate cutting," the problem becomes one of assessing whether or not there is a significant amount of competing vegetation within the manageable stand. As a general rule, a significant amount of competing vegetation would always be treated. To be significant, the unwanted vegetation must either be affecting manageable stand stocking or manageable stand growth by at least 25 percent.

Code	<u>Primary treatment opportunity</u>
0	No <u>treatment needed</u> - stand appears to be adequately stocked with growing-stock trees and is in reasonably good condition for future timber production. Indications are that nature will correct any minor deficiencies in the stand at this time without any substantial loss in growth potential.
1	<u>Salvage cut</u> - stand contains substantial volume of merchantable timber that has been seriously damaged by fire, insects, disease, wind, ice, or other destructive agents. These trees have a high risk for survival and conditions appear to favor a salvage cut at this time.
2	Harvest- stand is comprised mainly of mature sawtimber from the appearance of the bark and crowns of the trees. Radial growth has slowed down based on the cores extracted to determine stand age and site class. The future growth potential of this stand could be better achieved if the current stand were harvested and regenerated.
3	<u>Commercial thinning</u> - stand has a dense stocking of immature but merchantable timber. The point tally shows an average of 2.5 per point and more volume-size trees recorded, and cores from trees bored to determine stand age indicate that growth is retarded from over-crowding. Crown closure indicates that trees are receiving considerable competition from one another, and some of the future growth potential is likely to be lost to suppression mortality.
4	<u>Precommercial thinning</u> - stand is comprised primarily of a dense stocking of seedlings and/or saplings, and stagnation or potential growth loss appears likely unless a thinning is made to help the crop trees attain dominance. Generally, the trees are too small for most products.
5	<u>Cleaning, release, or other intermediate cutting</u> - stand has sufficient stocking but these trees are receiving serious competition from rough trees, rotten trees, or other inhibiting vegetation. To qualify as serious competition, the unwanted vegetation must either be affecting manageable stand stocking or manageable stand growth by at least 25 percent. Removal of the undesirable material definitely enhances the future growth and quality of timber in this stand.

- 6        Stand conversion - stand occurs on a dry, upland site and is poorly stocked with low-quality hardwood, or a stand that occurs on a low bottom land site that is stocked with slow-growing cypress or low-quality hardwood. There is the presence of a manageable stand, but because of the site conditions, the best opportunity for improving the stand appears to be conversion to pine or high-quality hardwoods. Also include in this class those shortleaf pine stands below merchantable size severely infected with littleleaf disease, or loblolly pine stands below merchantable size so severely infected with fusiform that conversion to some other species of pine appears to be the best management opportunity.
- 7        Regeneration without site preparation - there is an absence of a manageable stand and considerable loss in growth potential will occur if the stand is untreated. An opportunity is available to regenerate the stand with little or no site preparation.
- 8        Regeneration after site preparation - there is an absence of a manageable stand and considerable loss in growth potential will occur if the stand is untreated. An opportunity is available to regenerate the stand, but existing cover and conditions will necessitate site preparation before the stand can be regenerated.
- 9        Clear felling - stand is primarily young hardwood saplings and seedlings occurring underneath an overstory of residual trees of any size. A manageable stand does not exist in the overstory trees. There is not sufficient stocking of free-to-grow reproduction but when understory reproduction is included adequate stocking in saplings and seedlings exists. The site is a good hardwood site as determined by any one of the following criteria:

(1) likely to grow @ high quality hardwood based on existing reproduction and (in some cases) the prior stand

(2) a bottomland site (floodplain, deep swamp, etc.)

(3) an adverse site not suited to intensive pine management.

The opportunity is to fell the overstory trees, releasing the advance hardwood regeneration and stimulating stump sprouting. Because of the overtopping, seedling stocking (Items 17-18) may not reflect a manageable stand.

The stocking guides can be used to determine the level of stocking in the forest condition being sampled. Normally, the size of the forest condition will regulate the size plot to use to measure the level of stocking. If the tree tally from the inventory plot is used to determine the level of stocking, the stocking percent in the second stocking guide can be used directly to determine stocking if there is an acceptable level of stocking for management purposes.

Average individual tree stocking

Tree size	1 Acre		1/2 Acre		1/5 Acre	
	No. trees full stocking	Percent per tree	No. trees full stocking	Percent per tree	No. trees full stocking	Percent per tree
Seedling	600	.17	300	.33	120	.83
2	560	.18	280	.36	112	.89
4	460	.22	230	.43	92	1.09
6	340	.29	170	.59	68	1.47
8	240	.42	120	.83	48	2.08
10	155	.65	78	1.28	31	3.23
12	115	.87	58	1.72	23	4.35
14	90	1.11	45	2.22	18	5.56
16	72	1.39	36	2.78	14	7.14
18	60	1.67	30	3.331	2	8.33
20+	51	1.96	25	4.00	10	10.00

### **Stocking standards for trees based on tally on a 10-point cluster sample plot**

D.b.h. class	Minimum number of trees per acre for full stocking	Minimum basal area per acre for full stocking	Percent stocking assigned each tally tree
Seedlings	600		
2	560		
4	460	--	--
6	340	67	5.8
8	240	84	4.8
10	155	85	4.3
12	115	90	4.0
14	90	96	3.8
16	72	101	3.7
18	60	106	3.5
20	51	111	3.5

#### TREATMENT KEY

Start	Is there an identifiable manageable stand which would be featured in management?	Yes	Go to 1
		No	Go to 8
1.	Is this a clear felling opportunity? If yes seedling and saplings in the understory would have to be released in order to have sufficient stocking of free-to-grow	Yes	Code 9

- |    |  |           |                    |
|----|--|-----------|--------------------|
|    | reproduction for a manageable stand.   | No        | Go to 2            |
| 2. | Would removal of all diseased, damaged and other merchantable size, poor-risk trees in the manageable stand reduce, the manageable stand stocking below an acceptable level?   | Yes<br>No | Code 1<br>Go to 3  |
| 3. | Is the manageable stand predominantly mature or overmature?  | Yes<br>No | Code 2<br>Go to 4  |
| 4. | Are the trees in the manageable stand predominantly compatible with the site?<br>(Include severely damaged unmerchantable stands.)   | Yes<br>No | Go to 5<br>Code 6  |
| 5. | Is the manageable stand overstocked with manageable stand trees?   | Yes<br>No | Go to 6<br>Go to 7 |
| 6. | Are the manageable stand trees that need to be removed by thinning of merchantable size and of salable quality?  | Yes<br>No | Code 3<br>Code 4   |
| 7. | Is there a significant amount of competition from diseased, damaged, or other poor-risk trees; from overtopping trees; from cull trees, overmature trees, or inhibiting vegetation?  | Yes<br>No | Code 5<br>Code 0   |
| 8. | Can the area be regenerated without site preparation?  | Yes<br>No | Code 7<br>Go to 9  |
| 9. | Is the area best suited for growing hardwoods based on: (1) existing hardwood reproduction or a bottom-land site or sites adverse to intensive pine management (sites with year round water problems or slopes greater than 40%): (2) a manageable level of stocking would exist, after a clear felling opportunity as a result of sprouting from stumps of trees cut (trees of commercial species from 1-12 inches d.b.h.) and seedlings of commercial species. | Yes<br>No | Code 9<br>Code 8   |

Guidelines for Determining Manageable Stocking Levels

<u>Growing stock</u>	<u>Stocking level</u>	<u>Management status</u>
<u>Percent stocking</u>		
>130%	Over-stocked	Manageable
100% - 130%	Fully stocked	Manageable
60% - 100%	Medium stocked	Manageable

50% - 60%	Poorly stocked	Questionable
<b>16</b> . 7% - 50%	Poorly stocked	Not manageable
< <b>16</b> . 7%	Nonstocked	Not manageable

#### 6.953 Previous ownership class (Item 35)

Record the appropriate 2-digit code on Form SE-2 which would reflect the ownership of the sample acre as of the previous survey.

#### Landscape Characterization (Item 74E)

This item will provide a much-needed description of the general area surrounding each forest sample location. Rapidly increasing populations in many areas of the Southeast have resulted in increasing amounts of timberland being cleared for nonforest uses, primarily urban. Many other samples remain in forest but are greatly affected by the buildup in population and/or land uses surrounding the location. The manner in which a forest stand is likely to be managed or not managed, and whether it is likely to be a source of timber supplies, is greatly affected by the character of the landscape surrounding the area. We have described part of this potential conflict in the land use proximity coding, but this coding often fails to identify situations such as areas where residential development is prominent but is not dense enough to qualify as, urban buildup.

Record a 1-digit code in section 74, item E, to reflect your best estimate as to which of the following categories most clearly describes the character of the landscape surrounding the sample location. Use the largest concentric circle on the overlays to determine the area of influence. Since the photography we have is often dated and of variable quality, crews should freely supplement observations from the photo with on-the-ground observations of the general area made while traveling to and from the sample.

This code should be assigned on a priority basis (recreational areas first--predominantly forest last) when more than one category applies to the area. The emphasis in this coding should be on separating the categories the highest potential for forest management-related conflicts (low and high-density residential and recreational areas) from those with the last potential for these conflicts (predominantly forest and agricultural areas).

1. Recreational. The area has a moderate to high degree of recreational use. Include areas near lakes and other areas that have picnic area, camping, hiking, golf courses, and other scenic and recreational attractions. Include areas that are adjacent to reserved timberland-National and State parks, and National Forest Wilderness areas.
2. High-density Residential. These areas are either dominated by residential uses or have a significant component of high-density residential development in an otherwise forested or agricultural setting. These developments are different from (3) below in that the residences are situated on smaller tracts of land, generally less than 2 acres in size. Include areas dominated by industrial development.

3. Low-density Residential. These areas could be included in (4) or (5) below, but low-density residential development is common in the vicinity of the plot. These residences are not an integral part of the agricultural community of the area, but could best be described as non-rural, suburban populations. Typical examples would include mountainous areas with numerous vacation homes, or dispersed communities in the vicinity of metropolitan and suburban areas.
4. Agricultural. The area is dominated by agricultural land uses mixed with forested areas.
5. Predominantly Forest. Area is best characterized as predominantly forested or forested mixed with agricultural uses.

## 7. RENEWABLE RESOURCES CHARACTERISTICS

With the passage of the Forest and Rangeland Resources Planning Act of 1974 (RPA), the role of the Forest Inventory and Analysis Unit has broadened to include all the renewable resources. To meet some of the information needs of the RPA, a broad-scale measure of various resource uses and their interaction on each other are essential to assess the forest and rangeland renewable resources.

### 7.1 WILDLIFE CLASSIFICATIONS

#### 7.11 Cover Items (Item 45)

Identify the primary type of cover on the sample acre that would have the most influence on wildlife habitat. Record as a 1-digit code.

<u>Code</u>	<u>Cover</u>
0	No cover
1	Logging slash or brush pile
2	Windrows
3	Mill residues (slabs, etc.)
4	Vegetative thickets
5	Hollow log or stump
6	Rock outcrops or rock pile
7	Gullies, caves or burrows
8	Marsh condition
9	Trash pile or other artificial cover

### 7.12 Forest Type Diversity (Item 46)

At each timberland plot record a 1-digit code to indicate the number of different forest types within the largest concentric circle. A forest type will be judged primarily on its species composition. For example, an oak-pine type, upland hardwood (oak-hickory), pine plantation and natural pine type found within the largest circle would qualify as four types.

### 7.13 Vegetative Concealment (Item 47)

A 1-digit code will be recorded to indicate the density of vegetation from ground level to 6 feet. As each of the inventory points are chained, the rear chainman will make an assessment of the vegetative concealment. This will be based on how much of the head chainman can be seen at a distance of 70 feet. Record the highest occurring code for each plot.

Code	<u>Concealment Class</u>
------	--------------------------

- |   |                              |
|---|------------------------------|
| 1 | Cruiser can be easily seen   |
| 2 | Cruiser partially obscured   |
| 3 | Cruiser not easily seen      |
| 4 | Cruiser completely obscured. |

### 7.14 Number of Remnant Pine Trees (Item 48)

For each forest plot, record a 1-digit code denoting the number of remnant pine trees on the sample acre. If the number of trees exceeds 9, record code 9. Record a code 0 for a plot without remnant trees. Use the following criteria to identify remnant pine trees:

A remnant tree must be a southern yellow pine 10 inches d.b.h. or larger, 50 years or older, and occurring in a stand less than 50 years of age. Normally, the live-crown ratio is less than 30 percent. Bark often appears smooth and platy. These older trees often contain heart rot.

### 7.15 Edge (Item 49)

For each forest plot a measure of edge will be determined from a 50-acre circle and recorded as a 1-digit code. To determine edge, count the number of times the circle intersects forest and nonforest borders, forest type changes, and stand size changes, and divide by 2. If more than 9 edges occur, record code 9.

### 7.16 Number of Snags (Item 50)

Record a 1-digit code that reflects a per-acre estimate of the number of standing snags 5.0 inches d.b.h. and larger, and 4.5+ feet tall. This count is made on all dead trees on the sample acre including remeasurement snags. For plots having more than 9 dead trees per acre, record code 9.

### 7.21 People Use (Item 51)

This item refers to any use of the forest condition not associated with normal timber harvesting, thinning, TSI, fire protection and pest control. Signs of people may include such things as foot trails, spent shotgun shells, boat loading sites, campsites and tire tracks from trail bikes. Record people use as a 1-digit code.

<u>Code</u>	<u>People Use</u>
0	No evidence of people use
1	Occasional use
2	Moderate use
3	Intensive use

### 7.23 Trails (Item 53)

Record as a 1-digit code the evidence that trails or roads are on or in the immediate vicinity of the sample acre. This item will be recognized on a priority basis.

<u>Code</u>	<u>Trails or Roads</u>
0	None
1	Improved trail
2	Active woods road
3	Unimproved trail
4	Old woods road (include tram roads)
5	Skid trail
6	Game or livestock trail
7	Other road or trail (include firebreaks)

### 7.24 Posted (Item 54)

For each property containing a forest sample plot, record a 1-digit code to indicate whether the property is posted or restricted from public use. Record the most significant evidence on a priority basis.

<u>Code</u>	<u>Evidence</u>
0	None
1	Leased or owned by hunt club
2	Locked gate
3	Keep out
4	No trespassing
5	No hunting
6	No fishing



- 7 No dumping
- 8 Other posted signs
- 9 Owner contact

### 7.3 RANGE

#### 7.31 Grazing intensity (Item 55)

Intensity of utilization by livestock on the grasses, forbs and shrubs will be determined by recording a 1-digit code to indicate the level of grazing intensity on the sample acre.

#### Code      Grazing Intensity

- 0 None
- 1 Light grazing--difficult to find grazed plants. Less than 35 percent of plants grazed.
- 2 Moderate grazing--frequently find grazing on the sample acre. Generally 35 to 70 percent of plants are grazed.
- 3 Heavy grazing--extensive evidence of grazing on the sample acre. Generally more than 70 percent of plants grazed.

#### 7.32 Livestock Fencing (Item 56)

Proper fencing of the forested condition provides the landowner an opportunity to graze his lands. Lands that have suitable fencing have a greater opportunity to be utilized for grazing than those without fencing. For each forest plot, use a 1-digit code to record whether or not the forest condition is fenced for grazing use.

#### Code      Fencing Status

- 0 Not fenced, or inadequate fencing for grazing use.
- 1 Adequate fencing for grazing use.

### 7.4 WATER

#### 7.41 Water Type-Acre (Item 57)

Determine the type of water that is present on the sample acre. Seasonal water will be recorded, even if it is not present, when signs such as watermarks reveal its temporary occurrence. Always use a code reflecting permanent water if both permanent and seasonal water are present.

#### Code      Water type (permanent)

- 0 None
- 1 Streams or canals 0-9 feet wide
- 2 Streams or canals 10-19 feet wide
- 3 Streams or canals 20-29 feet wide
- 4 Deep swamps and cypress ponds
- 5 Other lake-like bodies of water less than 30 feet wide
- 6 Beaver ponds

Code Water type (seasonal)

- 7 Streams or canals with seasonal flow
- 8 Seasonal swamp-like conditions
- 9 Other seasonal

7.42 Distance to Permanent Water (Item 58)

Record a 2-digit code that reflects the distance from plot center to permanent water. Permanent water can consist of a watercourse or a water body. Distances can range from 1 to 9900 feet.

Code Water distance (feet from sample center)

- 01 1-100
- 02 101-200
- 03 201-300 4
- 99 9801-9900

7.5 SOILS

7.51 Litter Depth (Item 59)

Record to the nearest 0.1-inch, using a 2-digit code, the acreage litter depth on point 1. Litter consists of undecomposed leaves and/or needles, together with twigs, bark, etc. If less than .05, record 00. Dash this code if plot is under water.

7.52 Humus Depth (Item 60)

Record to the nearest 0.1-inch, using a 3-digit code, the average humus depth at point 1. Humus is the organic layer unrecognizable as to origin, immediately beneath the litter layer from which it is derived. Dash this code if plot is under water.

7.53 Soil Texture (Item 61)

Record as a 1-digit code. Soil texture of the soil surface is determined by the feel of moist soil when it is rubbed between thumb and fingers (refer to Exhibit 1). Dash if plot is under water.

Code    Soil Texture

- 1        Sands
- 2        Sandy loams
- 3        Loams
- 4        Clay loams
- 5        Clay

7.54 Soil Erosion (Item 62)

Soil erosion is the process of removal of soil material by running water, wind, or gravitational creep. Factors that affect soil erosion are climate, nature of the soil, slope, vegetation and cultivation practices. The degree of soil erosion will be determined on each forest plot by examining the amount of soil on points 1, 2, and 3 that has been removed by the flow of water. Record a 1-digit code.

Code    Degree of erosion

- 0        None
- 1        Light (very little sheet erosion)
- 2        Medium (both sheet and rill)
- 3        High (bad rill erosion-gullies)

Sheet erosion - is a term applied to the removal of more or less uniform layers of material from the soil surface.

Rill erosion - is applied to the type of erosion that results in the formation of small channels in the land surface.

7.72 Season of the Year (Item 68)

For each sample plot falling in forest or natural rangeland, record a 1-digit code to indicate the season that the plot was revisited. The dormant season will begin at the time of the first killing frost.

Code	Season
1	Growing season
2	Dormant season

7.73 Percent Forest (Item 69)

Record as a 2-digit code to the nearest percent for both forest and forest samples. Place the land-use impact guide over plot center and count the number of either forest or nonforest dots in the entire circle. Turn guide 90' and repeat count, turn and count two other 90' positions and add up total dots. Multiply total dots by 5 and divide by number of positions to determine percent. If nonforest dots are counted, subtract from 100 to determine percent.

$$\text{Percent forest} = \frac{\text{Number of dots} \times 5}{\text{Number of positions}}$$

Other variables:

New tree height

Location coordinates

Occurrence of invasive plants

## 8. VEGETATIVE PROFILE

Vegetative information will be collected at each sample plot falling in forest. The vegetation considered in this study will consist of two kinds:

1. Tree foliage (leaves, needles, twigs, mast and flowers on saplings, poletimber, and sawtimber-size trees)--Tree measurements and classification (d.b.h., crown ratio, species, crown class, and length) determined for each commercial and miscellaneous tree species 1.0 inch and larger recorded on each inventory sample point will be used to develop the density, diversity and composition of tree foliage.
2. Other vegetation (foliage on commercial and miscellaneous seedlings, shrubs, vines, grasses and grasslike plants, forbs and other)--The measurement and classification of this kind of vegetation will be done at 1 point of each sample that falls in forest. This classification can be made at any of the inventory points. Select a point that represents the total area being sampled. Normally, this will be point 1. If this classification is made at other than point 1, indicate the point at which it is taken on the upper right of the tally sheet on page 3.

Two different size circular plots will be used to identify and record the ecological information:

1. 35-foot radius sample is used to define the height zones and obtain the zone percent, the broad species classes and their percent, and the species representative of each broad class.
2. 6.8-foot radius sample is used to obtain a measure of the incidental species.

### 8.1 MEASUREMENT PROCEDURES

The following items will be completed on page 3 of the FIA Inventory Sample Record:

#### 8.11 Height Zone (Item 97)

This 1-digit item will be used to indicate the number of zones or layers making up the vegetative conditions being sampled. A zone can consist of a group of different plants (such as shrubs, seedlings, and vines), as long as the plants are all the same general height. If you do not have foliage in a particular zone or you are unable to make that determination due to water, do not include these layers in your height zone. **Example 1**, there is 3 feet of water on sample plot, the first height zone should start at 3 feet. **Example 2**, no live foliage between 1 and 5 feet, your first height zone could be 0 to 1 foot and your second height zone starting at 5 foot.

**Example 1.** (Graphic did not scan)

### 8.12 Height from and Height to (Items 98-99)

For each height zone, the vertical length of the foliage will be recorded as a 3-digit code to the nearest tenth foot. If moss, lichen, or other small plants are present, the first zone will be used to reflect the actual height of the vegetation to the nearest tenth foot.

Height zones above the first foot will be recognized to the nearest foot and the right digit of Items 98 and 99 will be 0. For example: 020 to 050. The example above demonstrates how the heights should be recorded for an area with three distinct zones.

### 8.13 Zone Percent (Item 100)

For each height zone, the space occupied by vegetation in a 35-foot circular area plot will be estimated to the nearest percent. To estimate the amount of space occupied by vegetation, one needs to visualize a 35-foot circular area plot made up of many cubic feet of space. (For instance, a zone two feet in height with a 35-foot radius would contain about 7,700 cubic feet.) If each of the 7,700 spaces contains a blade of grass or single leaf from a shrub or vine, the zone will be considered 100 percent stocked. If 3,850 spaces, or one-half the area, contain some type of vegetation, the zone is only 50 percent stocked. Do not include foliage from low-hanging limbs of trees that are 1.0 inch d.b.h. or larger. The basic concept of estimating the space occupied by various types and shapes of plants is demonstrated below:

Question: What percent of the circular 35-foot radius is occupied by other vegetation?

(Graphic did not scan)

Step 1: Assess all or a portion of each individual plant occurring within the 35-foot circular radius from both the horizontal and vertical standpoint.

(Graphic did not scan)

Step 2: Without compressing or packing the foliage, try to put an imaginary rectangle around each plant.

(Graphic did not scan)

Step 3: Add all the space taken up by all the plants in a zone and express this as a percent of the total area in the 35-foot circular radius.

From past experience, it appears that one should first try to bracket the zone percent into one of four classes by asking if it is greater than 75 percent, 75-50 percent, 50-25 percent, or less than 25 percent. Once the estimate is narrowed down to a class, it makes for an easier task to arrive at the nearest percent. It is important to remember that tall plants can contribute to the zone percent in more than one zone. In the following example, determine a zone percent for each zone and see if your estimates agree with the ones presented.

## ILLUSTRATION 2 - ZONE PERCENT ASSESSMENT

(Graphic did not scan)

\*Vegetation from ground level through 3 feet could count toward Zone 1.  
The remaining vegetation from 3 feet to 9 feet could count toward Zone 2.

### 8.14 Broad Species Class (Item 101)

For each zone, assign all the broad species classes that are represented within the zone. The broad classes will be recorded in the following order: First, record all the classes that carry at least 1 percent of the total vegetation stocking within a zone. The dominant (most abundant) class will be recorded first; the second most abundant recorded second, etc. Next, record any remaining broad species classes that carry less than 1 percent of the total vegetation stocking.

Code    Broad species class

- 1    Yellow pines
- 2    Other softwoods
- 3    Hardwoods (scrub oaks & miscellaneous)
- 4    Tropicals

### **5    Shrubs**

- 6    Vines
- 7    Grasses and grasslike
- 8    Forbs and others

### 8.15 Broad Species Class Percent (Item 102)

For each broad species class carrying at least 1 percent stocking, record a 3-digit code (nearest percent), which reflects its contribution to the overall zone percent. The total of all percents for these classes should equal 100. For any remaining broad species class, record 000 in its percent column. The following illustration shows the correct way to record the broad class data:

(Graphic did not scan)

### 8.16 Species (Items 103-106)

For each broad species class within a zone, record the species that are evident and easily observed on the circular 35-foot radius plot. When recording species, be sure to keep them within their respective broad species class. The dominant (most abundant) species should be recorded first; the second most abundant species recorded second, etc. After a representative sample of vegetation has been obtained on the 35-foot radius plot, then move to the plot center. From the plot center, sample a 6.8-foot radius plot to obtain any additional incidental species that have not previously been recorded for the class. Be sure to keep incidental species within their respective broad species class.

## 8.17 Species (Items 107-111)

Only record species in items 107-111 for broad class species 1-4. Disregard these items for all other broad classes.

### COMMERCIAL TREES

Tally Code	Veg. Code	Indicator Status	Common name	Scientific name
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#### Yellow pines

131	131	FAC	Loblolly pine	<i>Pinus taeda</i>
121	121	FACU	Longleaf pine	<i>Pinus palustris</i>
126	126	FACU	Pitch pine	<i>Pinus rigida</i>
128	128	FACW	Pond pine	<i>Pinus serotina</i>
107	107	UPL	Sand pine	<i>Pinus clausa</i>
110	110	UPL	Shortleaf pine	<i>Pinus echinata</i>
111	111	FACW	Slash pine	<i>Pinus elliottii</i>
115	115	FACW	Spruce pine	<i>Pinus glabra</i>
123	123	UPL	Table Mt. pine	<i>Pinus pungens</i>
132	132	UPL	Virginia pine	<i>Pinus virginiana</i>

#### Other Softwood

043	043	OBL	Atlantic white-cedar	<i>Chamaecyparis thoides</i>
221	221	OBL	Baldcypress	<i>Taxodium distichum</i> var. <i>distichum</i>
010	010	UPL	Fir	<i>Abies fraseri</i>
260	260	UPL	Hemlock	<i>Tsuga canadensis</i>
241	241	FACU	Northern white-cedar	<i>Thuja occidentalis</i>
222	222	OBL	Pondcypress	<i>Taxodium distichum</i> var. <i>nutans</i>
060	060	UPL	Redcedar	<i>Juniperus virginiana</i>
090	090	FACU	Spruce	<i>Picea rubens</i>
129	129	FACU	White pine	<i>Pinus strobus</i>

#### Soft Hardwoods

950	950	FACU	Basswood	<i>Tilia americana</i>
762	762	FACU	Black cherry	<i>Prunus serotina</i>
694	694	OBL	Blackgum (lowland)	<i>Nyssa sylvatica</i> var. <i>biflora</i>
693	693	FAC	Blackgum (upland)	<i>Nyssa sylvatica</i>
313	313	FACW	Boxelder	<i>Acer negundo</i>
330	330	FAC	Buckeye	<i>Aesculus</i> spp.
601	601	FACU	Butternut	<i>Juglans cinerea</i>
740	741*	FAC	Cottonwood	<i>Populus deltoides</i>
	742*	OBL	Cottonwood, swamp	<i>Populus heterophylla</i>



651	651	UPL	Cucumbertree	Magnolia acuminata
970	971*	FACW	Elm, American	Ulmus Americana
	972*	FACU	Elm, winged	Ulmus alata
	973*	FAC	Elm, slippery	Ulmus crassifolia
	974*	FAC	Elm, rock	Ulmus rubra
460	460	FACU	Hackberry	Celtis occidentalis
555	555	FACW	Loblolly-bay	Gordonia lasianthus
652	652	FAC	Magnolia	Magnolia spp.
316	316	FAC	Red maple	Acer rubrum
580	580	FACU	Silverbell (in mts.)	Halesia spp.
317	317	FACW	Silver maple	Acer saccharinum
653	653	FACW	Sweetbay	Magnolia virginiana
611	611	FAC	Sweetgum	Liquidambar styraciflua
731	731	FACW	Sycamore	Platanus occidentalis
691	691	OB	Water tupelo	Nyssa aquatica
920	920	FACW-OBL	Willow	Salix spp.
621	621	FA	Yellow-poplar	Liriodendron tulipifera

### Hard Hardwoods

540	541*	FACU	Ash, white	Fraxinus Americana
	542*	FACW	Ash, green	Fraxinus pennsylvanica
	543*	OBL	Ash, pumpkin	Fraxinus profunda
	544*	OBL	Ash, Carolina	Fraxinus caroliniana
531	531	FACU	Beech	Fagus grandifolia
370	370*	FACU	Birch (misc.)	Betula spp.
	371*	FACU	Birch, yellow	Betula alleghaniensis
	372*	FAC	Birch, black or sweet	Betula lenta
	373*	FACW	Birch, river or red	Betula nigra
901	901	UPL	Black locust	Robinia pseudoacacia
837	837	UPL	Black oak	Quercus velutina
602	602	FACU	Black walnut	Juglans nigra
823	823	FAC	Bur oak	Quercus macrocarpa
813	813	FAC	Cherrybark oak	Quercus falcata var. pagodaefolia
832	832	UPL	Chestnut oak	Quercus prinus
826	826	UPL	Chinkapin oak	Quercus muehlenbergii
311	311	FACW	Florida maple	Acer barbatum
400	400*	FACU	Hickory (except water)	Carya spp.
	401*	OBL	Hickory, water	Carya aquatica
552	552	FAC	Honeylocust	Gladitsia triacanthos
820	820	FACW	Laurel oak	Quercus laurifolia
838	838	FACU	Live oak	Quercus virginiana
680	680	FAC	Mulberry	Morus rubra
822	822	OBL	Overcup oak	Quercus lyrata
521	521	FAC	Persimmon (forest grown)	Diospyros virginiana
830	830	FACW	Pin oak	Quercus palustris
835	835	FACU	Post oak	Quercus stellata

833	833	FACU	Northern red oak	<i>Quercus rubra</i>
806	806	UPL	Scarlet oak	<i>Quercus coccinea</i>
817	817	FAC	Shingle oak	<i>Quercus imbricaria</i>
834	834	FACW	Shumard oak	<i>Quercus shumardii</i>
812	812	FACU	Southern red oak	<i>Quercus falcata</i>
318	318	FACU	Sugar maple	<i>Acer saccharum</i>
825	825	FACW	Swamp chestnut oak	<i>Quercus michauxii</i>
804	804	FACW	Swamp white oak	<i>Quercus bicolor</i>
827	827	FAC	Water oak	<i>Quercus nigra</i>
802	802	UPL	White oak	<i>Quercus alba</i>
831	831	FACW	Willow oak	<i>Quercus phellos</i>

### Miscellaneous Trees

816	816	UPL	Bear oak	<i>Quercus ilicifolia</i>
824	824	UPL	Blackjack oak	<i>Quercus marilandica</i>
807	807	UPL	Bluejack oak	<i>Quercus incana</i>
841	841	UPL	Dwarf live oak	<i>Quercus</i> spp.
840	840	UPL	Dwarf post oak	<i>Quercus</i> spp.
819	819	UPL	Turkey oak	<i>Quercus laevis</i>
899	899	UPL	Other scrub oaks	<i>Quercus</i> spp.
341	341	---	Ailanthus	<i>Ailanthus altissima</i>
548	548	UPL	American mt. ash	<i>Pyrus Americana</i>
391	391	FAC	Blue beech	<i>Carpinus carolinana</i>
451	451	FACU	Catalpa	<i>Catalpa</i> spp.
310	310	---	Chalk maple	<i>Acer leucoderme</i>
421	421	UPL	Chestnut	<i>Castanea dentata</i>
661	661	UPL	Chinaberry	<i>Melia azedarach</i>
491	491*	FACU	Dogwood, flowering	<i>Cornus florida</i>
	492*	FACW	Dogwood, silky	<i>Cornus amomum</i>
	493*	FACW	Dogwood, swamp	<i>Cornus foemina</i>
660	660	---	Domestic fruit (eg, apple)	<i>Malus</i> spp.
760	760	FACU	Fire cherry	<i>Prunus pennsylvanica</i>
591	591	FAC	Holly, American	<i>Ilex opaca</i>
701	701	FACU	Eastern hophornbeam	<i>Ostrya virginiana</i>
319	319	UPL	Mountain maple	<i>Acer spicatum</i>
692	692	OBL	Ogeechee gum	<i>Nyssa ogeche</i>
641	641	FACU	Osage-.range	<i>Maclura pomifera</i>
521	521	FAC	Persimmon (field grown)	<i>Diospyros virginiana</i>
722	722	OBL	Planertree (water elm)	<i>Planera aquatica</i>
721	721	FACW	Redbay	<i>Persea borbonia</i>
471	471	FACU	Redbud	<i>Cercis canadensis</i>
712	712	FACU	Royal paulownia	<i>Paulownia tomentosa</i>
931	931	FACU	Sassafras	<i>Sassafras albidum</i>
352	352*	FACU	Sericeberry, downey	<i>Amelanchier arborea</i>
	353*	FACW	Serviceberry, coastal	<i>Amelanchier obovalis</i>
581	581	FACU	Silverbell (except mts.)	<i>Halesia carolina</i>

711	711	FACU	Sourwood	Oxydendrum arboreum
315	315	FACU	Striped maple	Acer pensylvanicum
999	999	---	Other miscellaneous trees	---

### Tropicals

984984	FACU	Australian pine	Casuarina spp.
982982	FAC	Melaleuca	Melaleuca quinquenervia
986986	FAC	Caribbean pine	Pinus caribaea
985985	FACU	Citrus	Citrus spp.
510510	FACU	Eucalyptus	Eucalyptus spp.
940940	---	Mahogany	Swietenia spp.
983983	---	Silk oak	Grevillea robusta
006006	---	Other tropicals	---
911911	FAC	Sable palm	Sabal palmetto
910910	---	Other palms	---

### Shrubs

<u>Code</u>	<u>Code</u>	<u>Status</u>	<u>Common name</u>	<u>Scientific name</u>
	004*	FACW	Alder, speckled	Alnus rugosa
	005*	FACW	Alder, brooksid.	Alnus serrulata
	007	FAC	Alder, upland	Alnus spp.
	008	UPL	Azalea, flame	Rhododendron calendulaceum
	009	FAC	Bayberry	Myrica pennsylvanica
	037	FACU	Beautyberry, American	Callicarpa Americana
	023	---	Blackberry	Rubus spp.
	024	FACU	Blueberry	Vaccinium spp.
	025*	FACW	Blueberry, highbush	Vaccinium corymbosum
	026	FACW	Bluestem Palmetto (dwarf)	Sabal minor
	027	---	Brambles	Rubus spp.
	028	FACU	Buffalo-nut	Pyrolaria pubera
	078	OBL	Buttonbush	Cephalanthus occidentalis
	029	FACU	Chinkapin	Castanea spp.
	030*	FACW	Cranberry	Vaccinium macrocarpon
	032	FAC	Devil's-walking-stick	Aralia spinosa
	040*	FACW	Dog hobble	Leucothoe racemosa
	033*	FACW	Elderberry, American	Sambucus canadensis
	031	FACU	Elderberry, brown	Sambucus pubens
	034	FACW	Gallberry	Ilex glabra
	035	FACW	Fetterbush	Lyonia lucida
	036	FACW	Haw	Ilex pp.
	038	FAC	Hawthorn	Crataegus spp.
	039	FACU	Hazelnut	Corylus spp.

044	FAC	Horse-sugar	Symplocos tinctoria
045	FAC	Huckleberry	Gaylussacia spp.
046	FACU	Hydrangea	Hydrangea spp.
047	FACU	Mountain laurel	Kalmia latifolia
048	OBL	Mangrove	Rhizophora spp.
087	---	Mistletoe	Phoradendron spp.
049	FAC	Pawpaw	Asimina spp:
052	FACU	Plum	Prunus Americana
166	FAC	Privet	Ligustrum spp.
053	FAC	Rhododendron	Rhododendron maxium
054	FACU	Rose	Rosa spp.
055	FACU	Saw-palmetto	Serenoa repens
056	FACW	Spicebush	Lindera benzoin
163	FAC	St. Johnswort	Hypericum spp.
057	FAC	Strawberry bush	Euonymus americanus
058	FAC	Sumac	Rhus spp.
042*	FACW	Sweet pepperbush	Clethra alnifolia
041*	FACW	Sweetspire (Va. willow)	Itea virginica
050*	OBL	Sweetgale	Myrica gale
059	FACW	Titi	Cyrilla rceciflora
069	FAC	Viburnum (except below)	Viburnum spp.
070*	FACU	Viburnum, maple leaf	Viburnum acerifolium
071*	FACU	Viburnum, black haw	Viburnum prunifolium
074	FAC	Waxmyrtle	Myrica cerifera
075	FACU	Witch-hazel	Hamamelis virginiana
076	FAC	Yaupon	Ilex vomitoria
077	---	Other shrubs	---

### Vines

<u>Tally Code</u>	<u>Veg. Code</u>	<u>Indicator status</u>	<u>Common name</u>	<u>Scientific name</u>
	079	FACU	Climbing rose	Rosa spp.
	082	FAC	Crossvine	Bignonia capreolata
	083	---	Dewberry	Rubus spp.
	084	FAC	Greenbrier	Smilax spp.
	085	FACU	Honeysuckle	Lonicera japonica
	086	---	Kudzu	Pueraria lobata
	088	---	Poison ivy	Toxicodendron spp.
	089	FACW	Rataan	Berchemia scamdens
	099	FAC	Trumpet creeper	Campsis radicans
	133	FAC	Virginia creeper	Parthenocissus quinquefolia
	134	FAC	Wild grape	Vitis aestivalis
	135	FACU	Yellow jessamine	Gelsemium sempervirens
	136	---	Other vines	---

### Grasses and Grasslike

137	FACU	Bahiagrass (& other pasture grasses)	<i>Paspalum notatum</i>
138	FACU	Bluestem, big	<i>Andropogon gerardii</i>
139	FAC	Bluestem, broomsedge	<i>Andropogon virginicus</i>
171	FACU	Bluestem, chalky	<i>Andropogon capillipes</i>
140	---	Bluestem, slender	<i>Andropogon tener</i>
141	---	Bluestem, creeping	<i>Andropogon stolonifer</i>
164	---	Bluestem, little	<i>Andropogon scoparius</i>
142	---	Bristle grass	---
143	FACW	Carpetgrass	<i>Axonopus</i> spp.
144	FAC	Cutover muhly	<i>Muhlenbergia expansa</i>
145	FAC	Fecue	<i>Festuca</i> spp.
167	FACU	Indiangrass	<i>Sorghastrum</i> spp.
172	OBL	Maidencane	<i>Panicum hemitomom</i>
173	FACW	Maidencane, blue	<i>Amphicarpum muhlenbergianum</i>
146	OBL	Marsh-grass	<i>Spartina</i> spp.
147	FACW	Panicums	<i>Panicum</i> spp.
174	FAC	Panicum hairy	<i>Panicum rhizomatum</i>
148	FAC/ FACW	Paspalum (exc. Bahiagrass)	<i>Paspalum</i> spp.
149	FACW	Reeds	<i>Phragmites communis</i>
150*	FACW	Bushes	<i>Juncus</i> spp.
168	OBL	Sawgrass	<i>Cladium-Jamaicense</i>
151	FACW	Sedges	<i>Cyperus</i> and <i>Carex</i> spp.
175	FACU	Smutgrass	<i>Sporobolus poiretii</i>
152	FACW	Switch-Cane	<i>Arundinaria tecta</i>
176	FAC	Switch grass	<i>Panicum virgatum</i>
153	FAC	Threeawn (wiregrass)	<i>Aristida stricta</i>
177	FACW	Toothachegrass	<i>Ctenium aromaticum</i>
178	FACW	Torpedograss	<i>Panicum repens</i>
154	---	Uniolas	<i>Uniola</i> spp.
155	---	Other grasses	---
156	---	Other grasslike	---

### Forbs and Others

157	FACU	Prickly Pear Cactus	<i>Opuntia stricta</i>
158	---	Composites	Compositae
159	---	Ferns (except Royal)	.....
161	---	Legumes	.....
162	---	Lichens	.....
165	---	Forbs	.....
169	---	Mosses	.....
160*	OBL	Royal Fern	<i>Osmunda regalis</i>
179*	OBL	Pitcher Plants	<i>Sarracenia</i> spp.
180*	OBL	Sundews	<i>Drosera</i> spp.