

APPENDIX D

OLD GROWTH STRATEGY

INTRODUCTION

Controversy about old growth has been around since the 1970s. Originally it was in the Pacific Northwest, especially in the ‘fog belt’ along the coast of Oregon and Washington. The controversy sharpened and expanded in the 1980s with the spotted owl and marbled murrelet debates and the subsequent research that identified other values for old growth.

In 1989 Forest Service Chief Dale Robertson issued a national position statement on old growth explicitly recognizing it as a vegetative condition of value. Beginning in 1990, the Southern and Eastern Regions of the Forest Service national forest system; the Forest Service Southern, Northeastern, and North Central research stations; and The Nature Conservancy began efforts to develop science-based old growth definitions for the Eastern United States. The search for precise ‘definitions’ proved to be problematic partly because so few representatives of old growth conditions exist and their history is so poorly known that quantifying the range of natural variability was imprecise. But after five years of effort, in December, 1995 the Southern Regional Forester chartered the Region 8 Old Growth Team to make the draft scientific old growth definitions ‘operational and useful.’ That effort produced old growth descriptions of sixteen old growth community types for the entire southeastern US. In June of 1997 the Team completed a report entitled *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region*; hereafter called the ‘old growth report’ (Forest Service, 1997).

The old growth report recognized a group of seven characteristics that taken either all together or in some combination distinguish old growth from younger communities. These characteristics are: (1) large trees for the species and site; (2) wide variation in tree size and spacing; (3) accumulations of large-sized dead standing and fallen trees in amounts that are high in comparison to earlier growth stages within the same community; (4) decadence in the form of broken or deformed tops or boles and root decay; (5) multiple canopy layers; (6) canopy gaps and understory patchiness. These are inter-related. For example, the death of trees creates the canopy gaps, variation in spacing, and the accumulation of dead and fallen trees. Gaps, in turn, raise the light intensity underneath the largest trees and support greater photosynthesis for the development of multiple canopy layers.

The old growth report also defined three levels of old growth recognition.

Existing Old Growth: Forest stands or patches that meet each of the basic four defining criteria for age, disturbance, basal area, and tree size for their applicable old growth community.

Future Old Growth: Forest stands or patches allocated to old growth or old growth compatible management direction through land management decisions, but which do not currently meet the criteria for existing old growth. Examples of Future Old Growth include allocations of wilderness and backcountry management prescriptions.

Possible Old Growth: Forest stands which meet one or more of the preliminary inventory criteria described in the old growth report. For our planning purposes, we used the stand age equaling or exceeding the minimum old growth age of that stand's old growth community type

The operational definitions established four defining criteria that had to be met before a stand would be considered 'existing' old growth. These criteria, by design, did not encompass all seven of the old growth characteristics in order to be conservative. These defining criteria are:

- (1) a minimum age in the oldest age class,
- (2) no obvious human-caused disturbance that conflicts with old growth characteristics,
- (3) minimum basal areas of stems 5" dbh and larger, and
- (4) the diameter at breast height (dbh) of the largest trees.

Except for number two, the values for these criteria varied by old growth community type. For number two, no quantitative measures were given.

The old growth report also generally charged each Forest to provide:

- (1) distribution of existing and future old growth in a network;
- (2) three sizes of old growth patches to be in that network;
 - (a) large, larger than 2500 acres;
 - (b) medium, 100 through 2,500 acres; and
 - (c) small, 10 through 99 acres; and
- (3) Representation of each old growth type ecologically appropriate to the ecological section units of each Forest.

The representation requirement did not explicitly mandate the restoration of formerly occurring forest cover that would add old growth community types. For example, on the Chattahoochee, 'northern hardwood' forest cover types such as sugar maple, beech, and yellow birch have not been mapped, but the component species occur. Should communities of this vegetation be restored, it would add old growth type 1, northern hardwoods. Similarly, American chestnut is not matched to an old growth type but – if it could be restored – might result in an additional one. On the Armuchee Ranger District in the Southern Ridge and Valley ecological section, longleaf pine and

longleaf pine-oak do not yet occur as stands, but there are restoration objectives for them. Once restored, these introduce a new old growth community type.

One part of the overall old growth implementation strategy of this plan is to diversify the number of old growth communities through restoration.

Representation was scaled, with the only scale mandated for meeting old growth guidance being the ecological section unit. On the Chattahoochee and Oconee, there are three ecological sections: (1) Blue Ridge Mountains, (2) Southern Ridge and Valley, and (3) Southern Appalachian Piedmont. All National Forest in Georgia in the Southern Ridge and Valley is on the Armuchee Ranger District. National Forest in Georgia in the Southern Appalachian Piedmont includes all of the Oconee and approximately 46,000 acres on the southern end of the Chattooga Ranger District. *(Refer to the 'Description of Ecological Units' section of the EIS for the identification of ecological sections.)*

An exception to the large block requirement was made for forests in the Coastal Plains, Northern and Southern Cumberland Plateau, the Southern Appalachian Piedmont, and the Mississippi Alluvial Valley ecological sections because of land ownership patterns. National Forests in these ecological units were required to provide medium and small-sized potential old growth blocks. On the Chattahoochee and Oconee National Forests, this exception applies to the entire Oconee and to an additional area of about 46,000 acres on the south end of the Chattooga Ranger District. It does not apply to the Armuchee Ranger District in the Southern Ridge and Valley ecological section.

Because the Oconee and the south end of the Chattooga RD are physically separated by approximately fifty air miles, old growth in these two areas cannot be physically networked. These two areas were, therefore, considered separately for old growth and old growth compatible allocations. By considering these areas separately and with each one receiving old growth management, our strategy exceeded the requirements of the old growth guidance.

The requirement for representation was limited to ensuring that old growth community types were present in a network with neither a total amount nor an amount per each community being specified. Representation was not intended to require that each old growth type, regardless of its acreage, be present in a medium or large block. Representation was also not intended to require the allocation of an old growth block on every existing variation of soil, slope, elevation, aspect, or other physical factor. The distribution guidance did not specify an amount, such as acres or percent of area. Amounts were to be a Forest Plan decision based on public issues and ecological capabilities of the land.

The old growth allocations addressed in the old growth report were not to be large and medium patches of a single old growth type. The diversity of ecological conditions and the biology of tree species dictates that medium and large patches

will contain several old growth types, often occurring as small patch sizes but aggregating to a contiguous block of old growth management.

Another part of the old growth strategy in this Plan is to emphasis improving representation by giving priority to allocation of small blocks in those old growth community types not having large acreages on the Forests.

In developing this guidance, old growth blocks were assumed to be occurring on National Forest in a matrix of mid to late successional forest conditions, providing wildlife habitat connectivity without old growth allocations being physically contiguous. This assumption was borne out in the analysis of the EIS for this plan.

STEPS REQUIRED BY THE OLD GROWTH GUIDANCE

Throughout the analysis period and the development of the Forest Plan, each implementation step outlined in the old growth guidance was followed. Those steps and the actions taken to comply with them are detailed below.

1. Determining Appropriate Old Growth Community Types

The old growth report gave quantitative descriptions (operational definitions) for each of the sixteen old growth community types that encompassed nearly all of the forest cover types in the Southeast. (A few were considered rare communities, and the tropical forests of the Caribbean were not included.) Each old growth community included identification of the forest cover types within it.

We used the R8 old growth guidance to match our stands inventory database into the old growth community types using forest cover types as the primary characteristic. Nine old growth community types were found to be applicable to the Chattahoochee and Oconee National Forest. These are identified in Table D- 1, below, along with their quantitative criteria.

The determination of a stand's status as existing old growth depends on its ability to meet the four basic defining criteria for age, past disturbance, basal area, and tree size. Table D- 1 provides the basic attributes for determining old growth status of forest stands. The minimum age criterion is applicable when at least 30 trees per acre are present for the deciduous forest community types and at least 10 trees per acre for the pine forest community types. This number of trees refers to the oldest age class only, *not* the total number of stems greater than or equal to 5" dbh. The minimum dbh criterion is applicable when at least 10 trees per acre that *equal or exceed the "dbh of largest trees"* values identified in Table D- 1 are present. This criterion is the same for all forest community types. For a stand to be considered existing old growth, no obvious evidence of past human disturbance which conflicts with old growth characteristics can be present.

Table D- 1. Applicable Old Growth Types for the Chattahoochee-Oconee National Forest and Quantitative Criteria for Each.

Old Growth Type Number and Name	Minimum age of oldest existing age class	Minimum Basal Area (stems ≥ 5 "dbh)	Dbh. of largest trees
02-conifer/northern hardwood	140	40	≥ 20
05-mixed mesophytic & western mesophytic	140	40	≥ 30
13-river floodplain hardwood forest	100	40	≥ 16
21-dry-mesic oak forest	130	40	≥ 20
22-dry & xeric oak forest, woodland, & savanna	110	10	≥ 16
24-xeric pine and pine-oak forest & woodland	100	20-30	$\geq 20/\geq 10$
25-dry and dry-mesic oak-pine forest	120	40	≥ 19
27-seasonally wet oak-hardwood woodland	100	40	≥ 20
28-eastern riverfront forest	100	40	≥ 25

Source: Forest Service, 1997. *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region*,

2. Refining the Relationship Between Old Growth Communities and CISC

The next step was to ensure that the match of CISC stands to old growth community was one-to-one. This was a Forest-level effort and was necessary in part because the old growth guidance identified some forest types as belonging to more than one old growth community type. 'Site index' was used to distribute stands between dry-mesic (most moist), dry-xeric (intermediate), and xeric (driest) moisture regimes. Site index is an indirect measure of productivity. It is defined as the height of a representative tree at age fifty. In general, site index decreases as soil moisture decreases.

In Table D- 2 the refined crosswalk of the Continuous Inventory of Stand Conditions (CISC) forest cover type mapping to the individual old growth community types is shown. (See the 'Forest Cover' topic of the EIS for an explanation of each forest cover type code and an overview of the CISC data.) The abbreviation 'SI' in the table means 'site index'.

Table D- 2. Old Growth Community Types and the Forest Cover Types Included in Each on the Chattahoochee and Oconee National Forests

OGTY #	OGTY Name	Included CISC Forest Cover Type Codes and Site Index Split, if applicable
02	conifer/northern hardwood	03
05	mixed mesophytic & western mesophytic	04, 05, 08, 09, 41, 50, 56
13	river floodplain hardwood	46, 58, 61, 62, 63, 64, 65, 71,
21	dry-mesic oak forest	51, 52 w/ SI > 60, 53, 54, 55, 59 w/ SI > 60, 60 w/ SI > 60
22	dry-xeric oak forest, woodland, savanna	52 w/ SI < 60, 59 w/ SI < 60, 60 w/ SI < 60
24	xeric pine & pine-oak forest, woodland	12 w/ SI < 60, 15, 16 w/ SI < 60, 20, 32 w/ SI < 60, 33 w/ SI < 60, 38, 39
25	dry & dry-mesic oak-pine	10, 12 w/ SI > 60, 13, 16 w/ SI > 60, 31, 32 w/ SI > 60, 33 w/ SI > 60, 42, 44, 45, 47, 48
27	Seasonally wet oak-hardwood woodland	62, 64
28	eastern riverfront forest	72, 73, 82

Source: Forest Service, 1997. *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region*, modified for local conditions and to split forest types assigned to more than one old growth type.

Table D- 3 is an overview of the existing (2000) situation. It shows how many acres there are in total; that is, regardless of age, for each old growth community type in each ecological section.

Table D- 3. Total Forested Acres by Old Growth Community Type and Ecological Section for the Chattahoochee-Oconee National Forest

Old Growth Type (OGTY)	Old Growth Type Name	Acres by Ecological Section		
		Blue Ridge Mountains	Southern Ridge and Valley	Southern Appalachian Piedmont*
2	conifer/northern hardwood	69,669	0	109
5	mixed mesophytic & western mesophytic	130,145	1,382	5,826
13	river floodplain hardwood	951	277	10,491
21	dry-mesic oak forest	223,746	10,706	26,288
22	dry-xeric oak forest, woodland, savanna	35,663	6,933	384
24	xeric pine & pine-oak forest, woodland	34,030	4,045	3672
25	dry & dry-mesic oak-pine	142,691	41,384	107,164
27	seasonally wet oak-hardwood woodland	0	0	3,304
28	eastern riverfront forest	<u>112</u>	<u>0</u>	<u>88</u>
TOTAL		637,007	64,726	157,326

Source: Plan revision CISC data attributes of GIS stands layer, modified from C-O NF CISC data. Base year 2000.

Note: Southern Appalachian Piedmont data includes 46,206 acres on the Chattooga Ranger District.

From Table D- 3 it can be seen that it was not possible to provide large and medium blocks by each old growth type in each ecological section. A zero entry for any combination means that the type does not occur in that section.

3. Including Stands Previously Identified As Old Growth

As alternative development began, only one systematic old growth inventory existed for the Forest. Paul Carlson had surveyed the Chattooga River basin as part of the Chattooga River Ecosystem Management Demonstration Project. The final report was issued in March 1995. The project used its own criteria for old growth. These were; (1) age of oldest trees, and (2) degree of human disturbance. The age used was 150 years, ten years older than the oldest minimum age for old growth of appropriate R8 guidance old growth types for the Chattahoochee. Carlson had also divided these into classes of A, B, and C reflecting disturbance. Class A had *'no significant signs of human disturbance'*. Class B had two sub-groups; (1) *'significant signs of past human disturbance'*, and (2) *'no sign of past human disturbance but the forest canopy dominated by younger forest.'* Class C were areas with *'obvious past human disturbance'* but also had *'appreciable mature to old trees in the canopy.'*

Comparing Carlson's criteria and classes to the R8 guidance, it is reasonable to expect that all of his Class A would meet existing old growth criteria. Some of class B could also be expected to meet the criteria for existing old growth, but given that the criteria are now so different, it is difficult to estimate how much of it. The characterization of Class C is too general to do more than expect that some of it might meet old growth. For it, more information is needed. Consistent with our strategy, our efforts were directed at ensuring that medium or large blocks of Class A were in old growth or old growth compatible direction. For Class B, the strategy was to have most of the medium blocks in either an old growth compatible or at least a non-suitable prescription. Additional plan direction for old growth conservation would continue to require a second focused look at the project level. Project level old growth direction will be used for most of Class C areas and for areas in Class A or B that were less than 100 acres.

Carlson's survey results were available from the Chattooga Project as GIS polygons with associated attribute data. This data was related to the allocations of the plan alternative as shown in the table below.

Table D- 4. Distribution of Paul Carlson’s Old Growth Survey Polygons Into Management Prescriptions of the Plan. 23 September 2003

MRx	OG Compatible ?	Suitable for Timber?	Carlson OG Class	Acres	Percent of Class
12.A	N	N	A	53	6.7
4.I	N	N	A	79	10.1
7.E.2	N	Y	A	28	3.6
9.A.3	N	Y	A	13	1.6
9.H	N	Y	A	<u>13</u>	<u>1.6</u>
			Subtotal	186	23.7
1.A	Y	N	A	556	70.9
2.A.1	Y	N	A	37	4.7
2.B.1	Y	N	A	<u>6</u>	<u>0.7</u>
			Subtotal	599	76.3
			Class Total	784	
12.A	N	N	B	108	16.7
2.A.3	N	N	B	27	1.5
4.I	N	N	B	373	20.5
7.E.2	N	Y	B	53	2.9
8.A.1	N	Y	B	30	1.7
9.A.3	N	Y	B	162	9.0
9.H	N	Y	B	<u>415</u>	<u>22.9</u>
			Subtotal	1,168	64.4
1.A	Y	N	B	472	26.1
2.A.1	Y	N	B	171	9.4
6.B	Y	N	B	<u>2</u>	0.1
			Subtotal	645	35.6
			Class Total	1,813	100.0
12.A	N	N	C	17	1.8
4.I	N	N	C	158	17.1
8.A.1	N	Y	C	170	18.3
9.A.3	N	Y	C	161	17.4
9.H	N	Y	C	<u>368</u>	39.7
			Subtotal	874	94.3
2.A.1	Y	N	C	<u>53</u>	5.7
			Subtotal	53	
			Class Total	927	

Source: Chattooga River Project GIS data and plan revision GIS stands data 23 Sept 2003

In addition to Carlson's survey, there are other known areas on the Chattahoochee that are expected to meet criteria for existing old growth. Some of these are in areas recognized long ago for a special emphasis such as within the Cooper Creek Scenic Area. In these situations rather than change the historic status the effort was to ensure that the management was compatible with old growth.

4. Including Stands Previously Allocated To Old Growth

The 1985 Plan, as amended, did not have an allocation specifically to old growth. Instead it relied on the distribution of prescriptions that had no scheduled timber harvest such as Wilderness, Wild and Scenic River, Regional Forester-designated scenic areas, the Appalachian Trail corridor, Botanic and Zoologic Areas, and similar areas. Therefore there were no allocations to bring forward specifically into old growth.

As part of an overall strategy for old growth and other issues, we maintained equal or greater protection for areas within Regional Forester decision authority that had previously received special designation. Equal protection was generally maintaining the size and a comparable set of management direction. Greater protection typically was larger area and more restrictive management direction.

5. Identify Additional Areas As Possible Old Growth

This step was the major piece of implementing the old growth guidance. It was a multi-part process. Each sub-part is described sequentially below.

A. Query CISC data for stands at or beyond minimum old growth age

Each of the approximately 23,000 stands in the CISC database had a data field added to identify its appropriate old growth type. An 'age year' field that has the 'birth year' of each stand as a date was then used to identify those stands that apparently met the minimum old growth age for their old growth type.

Once stands were attributed, it became possible to have a context for old growth planning. We generated total acres of each old growth community type by ecological section. We compared those acres to the total acres of each type by ecological section meeting minimum old growth age. Stands meeting minimum old growth age were also plotted on a map. Their distribution was used as a basis to create old growth or old growth compatible allocations of large and medium sized blocks around groups of them. Two examples are the area west of Grassy Mountain fire tower on the Cohutta Ranger District and an area west of the Bartram Trail on the Tallulah Ranger District.

B. Consider lands Congressionally or administratively precluded from timber production

We checked acres of old growth community type by ecological section for lands already having an old growth compatible management that would not be re-visited in plan revision. Areas included Wilderness, Wild and Scenic River designations, the Murder Creek Research Natural Area on the Oconee, and the 1985 plan Botanic and

Zoologic Areas. This latter information was used to guide the need for additional representation.

We were very conservative in our approach to this element. Only those prescriptions without a planned vegetation management program were considered as being 'precluded.' There are numerous other prescriptions with a planned vegetation management program that are unsuitable – not appropriate for a sustained yield timber harvest regime. These could have been considered as meeting 'preclusion from timber production,' as it is not all-inclusive of vegetation management of any kind. Within these areas there would be impact on meeting old growth criteria on 4 percent or less of the land area in each decade. Examples include; the Coosa Bald National Scenic Area, the Ed Jenkins National Recreation Area, the Appalachian Trail Corridor, Geologic and Paleontologic Areas, Botanical and Zoological Areas, Cultural/Heritage Areas, Regional Forester-designated Scenic Areas, the various roadless area prescriptions (series 12), and the Outstandingly Remarkable Streams (Mgmt RX 4.H). In addition, at least some of the vegetation manipulation used in these prescriptions is likely to be maintenance of a desired vegetation condition on the same acres through time rather than shifting it around through time, which would affect more land area. But even assuming that: (a) the maximum amount was created each decade, and (b) the same areas were never re-used in any decade; it would take 250 years, or 1.8 times the length of the oldest minimum old growth age to cycle through all acres even once. Therefore these areas provide ample opportunity for old growth to develop.

Table D- 5. Lands with Old Growth-Compatible Management Prescriptions for the Chattahoochee-Oconee NF due to Congressional or Administrative Designation.

Mgmt Rx No.	Management Prescription Name
1.A.	Congressionally-designated Wilderness Area
2.A.1	Congressionally-designated Wild Segment of Wild & Scenic River System
2.A.2	Congressionally-designated Scenic Segment of Wild & Scenic River System
4.B.1	Existing Chief-designated Research Natural Areas

C. Supplement CISC data

We recognize, as did the old growth guidance, that although CISC is the best available forest cover information; it was never designed to provide the information needed to identify existing old growth. In particular, the age of a CISC stand is of the group of trees that makes up most of the stems with crowns in the main canopy. With our land use history on the Chattahoochee of burning and woods grazing; followed by selective logging and more fires, a two-aged stand condition is rather common. The oldest age class in a stand is typically not the predominance of either the stem count or the canopy cover percent. Carlson critiqued CISC in its ability to serve as a predictor of old growth. He concluded that CISC ages of 120+ were useful as an indicator of the best places to look and that old growth patches found as a result would likely differ in size and shape from CISC stand mapping. He also found that

class A and B old growth occurred within CISC stands aged between 101 and 120 years old but on less than 30 percent of the area delineated by those stands. Stated another way, old growth by Carlson's criteria occurred on a subset CISC stands having an age that presumably would not have met his age criteria. R8 old growth guidance with its lower to much lower minimum old growth ages would alleviate much of this, since Carlson was looking for ages of 150 or more to start with. But it is also another indicator that both existing possible old growth amounts and projections of future old growth are conservative rather than liberal estimates.

The old growth guidance recommended consideration of inaccessible areas, low productivity areas, and late successional areas as being locations with higher than average probability of also including old growth that does not show up in CISC stand ages. We looked at stands within twenty years of minimum old growth age in relation to those of minimum old growth age to help define blocks. We also asked for review and feedback from District personnel on the potential old growth maps. We also used experience, FIA data, CISC stand ages and documented history as the basis for an expectation that old growth would disproportionately occur on steep upper slopes far removed from railroads, major streams, and major roads. These are the areas either not logged at all or logged very selectively during the 1880 – 1920 logging era. Much of this land has already been withdrawn and is in old growth compatible management. A glance at Carlson's Class A, for example, shows over 550 acres in Wilderness. In these cases we did not attempt to analyze for possible old growth within those areas.

We adopted two strategies to response to this situation. We included a standard that in woodland creation in old growth types 22 and 24 a priority be given to retaining the oldest age class so that such woodlands can continue to meet old growth criteria. In addition, we directed that allocation of new small blocks of old growth include consideration of quality; that is, priority is given to those stands that best meet old growth criteria. This requirement could also include consideration of the other old growth characteristics not used in the four defining criteria.

The old growth guidance also, as part of supplementing CISC, directed consideration of other inventories. Concurrent with plan revision work, a summer intern conducted old growth reconnaissance for Georgia ForestWatch during two summers. Georgia ForestWatch (GFW) was provided a detailed 'how-to manual' and forms developed by Forest Service personnel on the Forest for old growth data collection. The manual was instructions to ensure consistent data collection. The forms were designed to address all of the old growth characteristics, not just the four defining ones. Both the manual and forms were originally developed for internal use, and then shared with GFW. Personnel from GFW also attended a field training session on the Cohutta Ranger District in the use of both the manual and forms. The forms were designed to not allow a field determination of whether or not a stand met old growth criteria. The procedure was rigorous and data intensive because we wanted to remove judgment calls from the data as much as feasible. We understood that the approach would be slow and therefore costly and not productive of large acreages. In addition, data was

collected for purposes beyond just characterizing old growth. Together, this set of ambitious purposes made the data collection time-consuming.

Originally the effort to develop both the forms and the manual was an internal effort directed at validating the old growth criteria and the old growth operational definitions. This was an item identified by the old growth guidance itself as needing to be done. In that process, there were related secondary objectives. One was to begin to develop among District personnel the experience and ability to judge stands as old growth based on criteria without taking such intensive data. We were not conducting an inventory for all existing old growth on the Forests. Another objective was to begin developing criteria for the number of plots that needed to be taken to accurately characterize an area against old growth criteria. Old growth by definition is a very variable condition and individual plots can be expected to not meet criteria but still reflect some of the old growth characteristics.

Both Forest Service and GFW field experience was that we were collecting too much information. Partly in consequence, GFW data did not meet all of the standards we set for our own data collection in the manual. By design, our procedure was rigorous. Plots were to be: (1) not biased by stand structure at the plot location, (2) confined to single stands to maintain homogeneity so that plots could be mathematically treated as representing one old growth community, (3) well-distributed throughout the stand to ensure a representative stand-level characterization. At least in some cases these criteria were not met. But it is also true that the Forest Service did not analyze the data and make a systematic comparison with the old growth operational definitions. We have not said whether or not these areas are existing old growth. We have not collected check data on the areas.

We converted GFW maps into files that would relate with our GIS data and reviewed these polygons one by one between the DEIS and FEIS. We looked at many factors including: terrain, relationship to CISC stand ages, relationship to wildlife habitat needs, and relationship to the management prescription allocation of Alternative I in the DEIS. We used GFW polygons as a 'window' to select CISC stands, selecting the entire stand if any of it were within the polygon. We then systematically analyzed those stands for forest cover type, associated old growth community type, and stand age relative to the minimum old growth age. Using CISC as the basis, we found the relationship between GFW polygon area and the minimum old growth to be as follows; 16 percent of GFW area at or beyond minimum old growth age in CISC, 19 percent within twenty years, 31 percent between twenty to forty years, 23 percent between forty and sixty years, 5 percent between sixty and eighty years, 3 percent between eighty and one hundred years, and 3 percent between one hundred and one hundred and twenty years. For those stands aged in CISC as more than twenty years away from minimum old growth age, including them did not enhance representation of old growth community types.

We made additional allocations to MRx 6.B of 2,689 acres, emphasizing those stands at or beyond minimum old growth age and those within twenty years of it. With additions to other old growth compatible prescriptions, the total was

approximately 3,600 acres. The total of GFW polygon acres was 2,582 acres but we did not allocate every GFW polygon. Those that were less than medium block size (less than 100 acres) were left for consideration at the project level. Nor did we allocate all of each area in every case as they were delineated on GFW maps. Stands much younger than minimum old growth age were not included.

The table below shows the allocations given to the polygons as GFW mapped them. Our allocations were, as already noted, typically of larger areas inclusion of individual GFW polygons.

Table D- 6. Management Prescription Allocations of Georgia ForestWatch Old Growth Reconnaissance Polygons. 30 Sept 2003

Mgt Rx	Management Prescription Name	Old Growth or OG Compatible ?	Suitable for Timber Harvest?	Acres
12.A	Remote Backcountry Recreation – Few Open Roads	No	No	433
3.C	Ed Jenkins National Recreation Area	No	No	20
3.D	Proposed Ed Jenkins National Recreation Area Addition	No	No	4
4.A	Appalachian National Scenic Trail Corridor	No	No	599
4.I	Natural Areas – Few Open Roads	No	No	27
7.E.1	Dispersed Recreation Areas	No	No	<u>43</u>
			Subtotal	1,126
7.A	Scenic Byway Corridor	No	Yes	12
8.A.1	Mix of Successional Forest Habitats	No	Yes	145
9.A.1	Source Water Protection Watersheds	No	Yes	14
9.A.3	Watershed Restoration Areas	No	Yes	63
9.H	Management, Maintenance, and Restoration of Plant Associations to Their Ecological Potential	No	Yes	<u>286</u>
			Subtotal	519
1.A	Designated Wilderness Areas	Yes	No	4
1.B	Recommended Wilderness Study Areas	Yes	No	118
4.D	Botanic – Zoologic Areas	Yes	No	5
6.B	Areas Managed to Restore or Maintain Old Growth Characteristics	Yes	No	<u>937</u>
			Subtotal	1,063
			Total	2,582

Source: On-screen digitizing of GFW paper map copies correlated with GIS plan revision stands data layer. Aug. 2003

6. Display preliminary inventory information

The GIS maps of stands meeting minimum old growth age; that is, possible old growth, were displayed at public meetings held as part of the plan revision effort in 1999. In addition, alternative maps displayed throughout the lengthy process

identified old growth management prescription allocations. GFW polygons were not mapped and displayed to the public.

Throughout the public involvement for the plan revision, old growth generated little response at public meetings. When the possible old growth map was displayed, people seemed to be unsure what they were seeing and even unsure of its significance, either biologically or to the plan. Most were unaware of the R8 old growth guidance and certainly did not know its content. Interest throughout was largely by those who had prior involvement with Forest Service project planning before the revision began, had received a copy of the old growth guidance, and had some familiarity with its contents.

7. Integration into the Plan

Completion of the first six steps of old growth guidance brought us to the point of integrating the high priority areas into the plan. Our approach to this was two-pronged: (1) allocate areas using issues and characteristics of the resources, and (2) cross-check for the effect on old growth conservation in terms of representation and distribution in a network. That is, we did not first allocate to meet the old growth guidance, then cross correlate to other issues.

The Chattahoochee-Oconee strategy for implementing the old growth guidance in the Forest Plan incorporated the following features:

- First allocate lands in a way that responds to public issues well by reflecting the resource characteristics of different areas. In this step, maintain equal or greater protections for the ‘special areas’ of the 1985 plan. Also in this step recognize areas with highest probability of meeting criteria for existing old growth.
- Decide which allocations are old growth compatible, being conservative in making this match.
- Analyze old growth and old growth compatible prescriptions by ecological section for representation, amount, and distribution; including the number of blocks and their sizes. As an exception, consider the Piedmont portion of the Chattooga Ranger District separately, in excess of old growth guidance requirements.
- Based on the results of the analysis, reallocate using old growth and old growth compatible prescriptions to enhance representation and distribution in each ecological section, including consideration of new information. Focus on those areas with high probability of meeting criteria for existing old growth now or within the life of this plan revision of approximately 20 years.
- Analyze the ability of other management prescriptions to provide possible old growth in the future for a complete picture of old growth conservation and consider these results in deciding whether or not to include further old growth allocations and in setting plan requirements for additional small block allocations.

- Incorporate Plan direction for the conservation of existing old growth identified during plan implementation. Integrate this with direction on additional small block allocations at project level, maintaining the emphasis on representation, distribution, and quality and also considering additional factors such as forest health and plan objectives.
- Incorporate plan direction for community restoration that would add additional old growth community types or improve the representation of existing types.

Table D- 7 below identifies the management prescriptions that are either allocations for the purpose of providing old growth or are allocations that result in providing old growth, though their primary emphasis may be different. These last are called ‘old growth compatible prescriptions.’ Old growth compatible management prescriptions are those that have no planned, periodic vegetation management program that would affect stems larger than five inches in diameter at four-and-one-half feet above the ground. (These are the stems that are considered in meeting old growth criteria.) For example, they have no quantitative objective for early-successional wildlife habitat. Cutting of living vegetation is incidental to either low intensity or small-scale projects such as trail maintenance, hazard tree removal, or wildlife or fish habitat work. However, these management prescriptions may allow for prescribed burning which would primarily affect stems less than five inches in diameter at four-and-one-half feet above the ground.

Table D- 7. Old Growth and Old Growth Compatible Management Prescriptions for the Chattahoochee-Oconee National Forest

Mgmt Rx No.	Management Prescription Name
0	Custodial management
1.A.	Congressionally-designated Wilderness Area
1.B.	Recommended to Congress for Wilderness Study
2.A.1	Congressionally-designated Wild Segment of Wild & Scenic River System
2.A.2	Congressionally-designated Scenic Segment of Wild & Scenic River System
2.B.1	Recommended to Congress for Designation as a Wild Segment of the Wild & Scenic River System
2.B.2	Recommended to Congress for Designation as a Scenic Segment of the Wild & Scenic River System
4.B.1	Existing Chief-designated Research Natural Areas
6.A.	Old Growth with Natural Process Emphasis
6.B.	Areas Managed to Restore/Maintain Old Growth Characteristics
6.C	Old Growth Areas Managed With a Mix of Natural Processes & Restoration
6.D	Core Areas of Old Growth Surrounded by Areas with Extended Even-Aged Management
6.E	Core Areas of Old Growth Surrounded by Areas under Uneven-aged Management

A. Representation

Old growth prescriptions were allocated to areas that had a core of stands meeting the minimum old growth age or – if necessary to ensure representation – to younger stands. Both old growth and old growth compatible prescriptions were analyzed to

check their overall ability within each ecological section to represent the nine old growth types. A summary of results is shown below.

Table D- 8. Summary of Old Growth Community Type Representation in Old Growth and Old Growth Compatible Prescriptions by Ecological Section.

OGTY #	Blue Ridge Mountains		Southern Ridge & Valley		Southern Appalachian Piedmont		Piedmont on Chattooga RD	
	Acres	Percent of OGTY	Acres	Percent of OGTY	Acres	Percent of OGTY	Acres	Percent of OGTY
2	9,715	14	n/a	n/a	n/a	n/a	18	17
5	35,211	27	281	20	188	6	64	3
13	74	8	55	20	1,603	16	100	25
21	65,861	29	2,471	23	1,908	13	2,005	17
22	9,453	27	2,313	33	n/a	n/a	0	0
24	6,037	18	1,063	26	n/a	n/a	520	14
25	23,413	16	9,298	22	2,075	3	817	3
27	n/a	n/a	n/a	n/a	751	23	n/a	n/a
28	60	54	n/a	n/a	n/a	n/a	8	100

Source: Summarization of FEIS 'Old Growth' topic tables derived from plan revision GIS stands data 23 Sept 2003.

As one of our efforts to ensure distribution, we analyzed the percentage of National Forest acres allocated to an old growth or old growth compatible prescription by 5th level hydrologic unit. The general pattern was a 15-percent or greater portion for old growth in watersheds with several thousands of acres of NF. There were exceptions to this pattern, and it was in part because of those exceptions that allocation of additional small blocks was related to 6th level hydrologic units. There is an average of four 6th level hydrologic units per each 5th level unit. So the small block allocation standard would raise the 5th level to approximately 20-percent and also maintain a networked distribution.

B. Block Sizes

Allocations of this plan were also checked for block size as an element of compliance with old growth guidance. The results are shown in the table below.

Table D- 9. Number and Acreage of Old Growth Blocks by Category and Ecological Section.

Ecological Section	Block Size and Acres of Each			
	Large Blocks		Medium Block	
	Number	Acres	Number	Acres
Blue Ridge Mountains	10	140,038	21	9,524
Southern Appalachian Piedmont	N/A	N/A	10	7,841
Southern Ridge and Valley	1	2,870	21	12,229
Piedmont portion of Chattooga RD	0	0	2	1,553

Source: Plan revision GIS stands data 23 Sept 2003.

This Forest Plan allocates land to old growth and old growth compatible management direction such that a result is to provide a network of large and medium blocks within

a prevailing condition of a mid and late successional forest matrix. Large blocks are made up primarily of future old growth but also containing possible old growth and expected to contain existing as well. Medium patches are designed to fill in gaps in old growth community type representation or to improve the spatial distribution between large-sized areas. Medium patches are greater than 100 acres and are a mix of possible and future old growth but with the emphasis on possible.

In GIS analysis, a 'block' is not the same as an allocation but rather a single contiguous area. For example, the old growth allocations on the Armuchee RD in the Southern Ridge and Valley contains a cumulatively large area on the same landscape position on the west side of Taylor's Ridge. But because land ownership breaks it up, GIS analysis reports several medium blocks even though private landowners are maintaining the intervening lands in forest.

In the Blue Ridge Mountains and the Southern Ridge and Valley ecological sections large blocks of old growth or old growth compatible allocations exist. All old growth community types except OGTY 13 - River Floodplain and OGTY 28 - Eastern Riverfront Hardwoods are represented in these large patches. Medium blocks exist in both areas of the Southern Appalachian Piedmont ecological section. In the Chattooga portion, one medium block is provided by an old growth prescription allocation and another by a Botanic/Zoologic prescription. On the Oconee, several medium blocks are provided by a combination of old growth prescription allocations, a Wild and Scenic River recommendation, and a Research Natural Area

8. Identification Of Additional Old Growth Patches

Projects will identify small old growth blocks of less than 100 acres. This plan gives strategic direction to that effort such that the overall old growth conservation effort will have very focused improvement. Direction of this plan includes emphasis on conserving stands meeting the criteria for existing old growth, improving representation, improving quality of the old growth network, diversifying the kinds of old growth communities, conserving old growth while also accomplishing other habitat objectives, and maintaining a networked distribution pattern through a watershed-based distribution. Direction is written to provide flexibility in implementation at the project level by scaling the small block allocation requirement to the project area being considered if it is not a 6th level hydrologic unit.

Ability to meet old growth criteria will be an added factor to consider in vegetation inventory implementing this plan. Stands having an oldest age class present that meets or exceeds the minimum old growth age should be recognized in stands data regardless of; (a) the land area already allocated to old growth or old growth compatible management for its old growth type, (b) their ability to meet the remaining three old growth criteria, or (c) whether they are needed to meet small block allocation requirements of this plan. This will be a needed data element in the FS Veg corporate vegetation database. Existing stands should be re-mapped during future inventories to refine stand polygons and improve possible and existing old growth mapping.

Priority for allocation of small blocks of existing old growth has been given to those old growth community types that generally have less than 20 percent of their total old growth community acreage, regardless of age, allocated to an old growth or old growth compatible management direction in the ecological section. Old growth communities with 20 percent or more of their total old growth type acres allocated to an old growth or old growth compatible management direction in the ecological section are not prioritized for the required allocation of additional small blocks. Within these priorities, stands with a high quality of old growth characteristics, including those other than the basic four, have priority over stands minimally meeting the basic criteria or stands meeting some but not all of them.

No old growth community type will be allocated in its entirety to an old growth prescription. If a high degree of protection is needed for a community as a whole, it will be allocated to either the Regional Rare Community prescription, 9.F. or to the Forest 4.D. Botanic/Zoologic prescription. The Plan also includes direction that rare communities and their maintenance will be given priority over old growth allocations. This direction was included to clarify what should be done at project level in cases of conflict. For example, Table Mountain pine-oak and longleaf pine-oak are included forest types within old growth type 24, and there may be stands with an age class at or beyond minimum old growth age. But maintaining the community may require treatments that would conflict with old growth characteristics. Since several other common forest types also occur within old growth type 24, it is more important to maintain the regionally or locally rare communities than to very minimally increase old growth and put maintenance of those communities long term at risk.