



United States  
Department of  
Agriculture

Forest  
Service

Oconee  
Ranger District

1199 Madison Road  
Eatonton, GA 31024

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**File Code:** 1950

**Date:** September 2, 2004

Dear Interested Members of the Public and Forest Users:

Enclosed is a copy of the Environmental Assessment (EA) for the Commercial Thinning project on the Oconee Ranger District, Chattahoochee-Oconee National Forests. Two alternatives were developed and analyzed; Alternative A – No Action and Alternative B – Proposed Action. The project area is located in Putnam, Jasper, and Jones Counties, Georgia.

In accordance with 36 CFR 215.6(a)(3), individuals or organizations wishing to be eligible to appeal must provide the following information: 1) Your name and address; 2) Title of the Proposed Action; 3) Specific substantive comments (215.2) on the proposed action, along with supporting reasons that the Responsible Official should consider in reaching a decision; and 4) Your signature or other means of identification verification. For organizations, a signature or other means of identification verification must be provided for the individual authorized to represent your organization.

In accordance with 36 CFR 215.6(a)(4), comments must be postmarked or received within 30 days beginning the day after publication of this notice in the *Eatonton Messenger*. Oral or hand-delivered comments must be received within our normal business hours of 8:00 a.m. to 4:30 p.m. Comments may be mailed to: Oconee Ranger District, 1199 Madison Road, Eatonton, GA 31024.

Please contact Sandra Henning, Interdisciplinary Team Leader at 770-297-3064 if you have questions concerning this proposal. Thank you for your continued interest in the management of the Oconee Ranger District.

Sincerely,

*/s/ William B. Nightingale*  
WILLIAM B. NIGHTINGALE  
District Ranger

Enclosure



United States  
Department of  
Agriculture

Southern Region  
Forest Service



September 2004

Oconee Ranger District

# **Commercial Thinning in Young Pine Stands**

## **Environmental Assessment**

## Commercial Thinning Project Environmental Assessment

Location of Action: Oconee Ranger District  
Putnam, Jasper and Jones County, Georgia

Lead Agency: USDA Forest Service

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# Table of Contents

CHAPTER ONE 1.0 Purpose and Need for the Proposed Action.....	6
1.1 Introduction .....	6
1.2 Proposed Action .....	6
1.3 Purpose and Need for the Proposed Action .....	8
1.4 Decision Framework.....	9
1.5 Public Involvement .....	9
1.6 Key Issues.....	9
1.6.1 Key Issue #1: Water Quality.....	10
1.6.2 Key Issue #2: TES .....	10
1.7 Non-key Issues.....	10
1.7.1 Non-key Issue A: Restoration without Harvesting or Road Building.....	10
1.7.2 Non-key Issue B: Heritage Resources .....	<b>Error! Bookmark not defined.</b>
1.7.3 Non-key Issue C: Soil Resources .....	11
1.7.4 Non-key Issue D: Scenery Resources .....	12
1.7.5 Non-key Issue E: Recreation Resources .....	13
1.7.6 Non-key Issue F: Financial Concerns .....	13
1.7.7 Non-key Issue G – Air Quality.....	13
1.7.8 Non-key Issue H – Other Areas of Concern.....	14
1.8 Project Record.....	14
CHAPTER TWO 2.0 Alternatives.....	15
2.1 Range of Alternatives .....	15
2.2 Alternatives Considered but Eliminated from Detailed Study .....	15
2.2.1 Alternative A – No Timber Harvesting or Road Construction .....	15
2.2.2 Alternative B - Additional Timber Harvest.....	15
2.3 Alternatives Analyzed in Detail .....	16
2.3.1 Alternative A – No Action .....	16
2.3.2 Alternative B – Proposed Action .....	16
2.4 Mitigation Measures for the Action Alternatives.....	17
CHAPTER THREE 3.0 Environmental Impacts.....	19
3.1 Effects Related to Key Issue #1; Water Quality.....	19
3.1.1 Alternative A – No Action .....	20
3.1.2 Alternative B – Proposed Action .....	20
3.2 Effects Related to Key Issue #2, Threatened and Endangered Species.....	25
3.2.1 Alternative A - No Action.....	27
3.2.2 Alternative B - Proposed Action.....	28
CHAPTER FOUR 4.0 List of Preparers .....	31

APPENDICES

- Appendix A: List of Stands by Alternative
- Appendix B: Biological Evaluation
- Appendix C: Management Indicator Species
- Appendix D: Financial Analysis
- Appendix E: Scenery Management

# CHAPTER ONE

## 1.0 Purpose and Need for the Proposed Action

### 1.1 Introduction

This environmental assessment (EA) documents the results of site-specific analyses concerning proposed activities on the Oconee Ranger District.

The project area is within forty-two compartments in Putnam, Jasper and Jones County, Georgia. The Proposals consist of approximately 8339 acres south of Interstate 20 as shown in Figure 1-1, Vicinity Map. The project is within Management Areas (MA) 8.D and 8.D.1, Red-Cockaded Woodpecker Habitat Management Areas, as designated in the Land and Resource Management Plan, for the Chattahoochee-Oconee National Forests (2004) (hereafter called the Forest Plan). In Management Area 8.D and 8.D.1 the emphasis is to provide suitable to optimal habitat conditions and management activities that contribute to the recovery of the RCW on the Oconee National Forest. The habitat conditions needed by the RCW are predominantly southern pine forest in mid and late successional stages.

### 1.2 Proposed Action

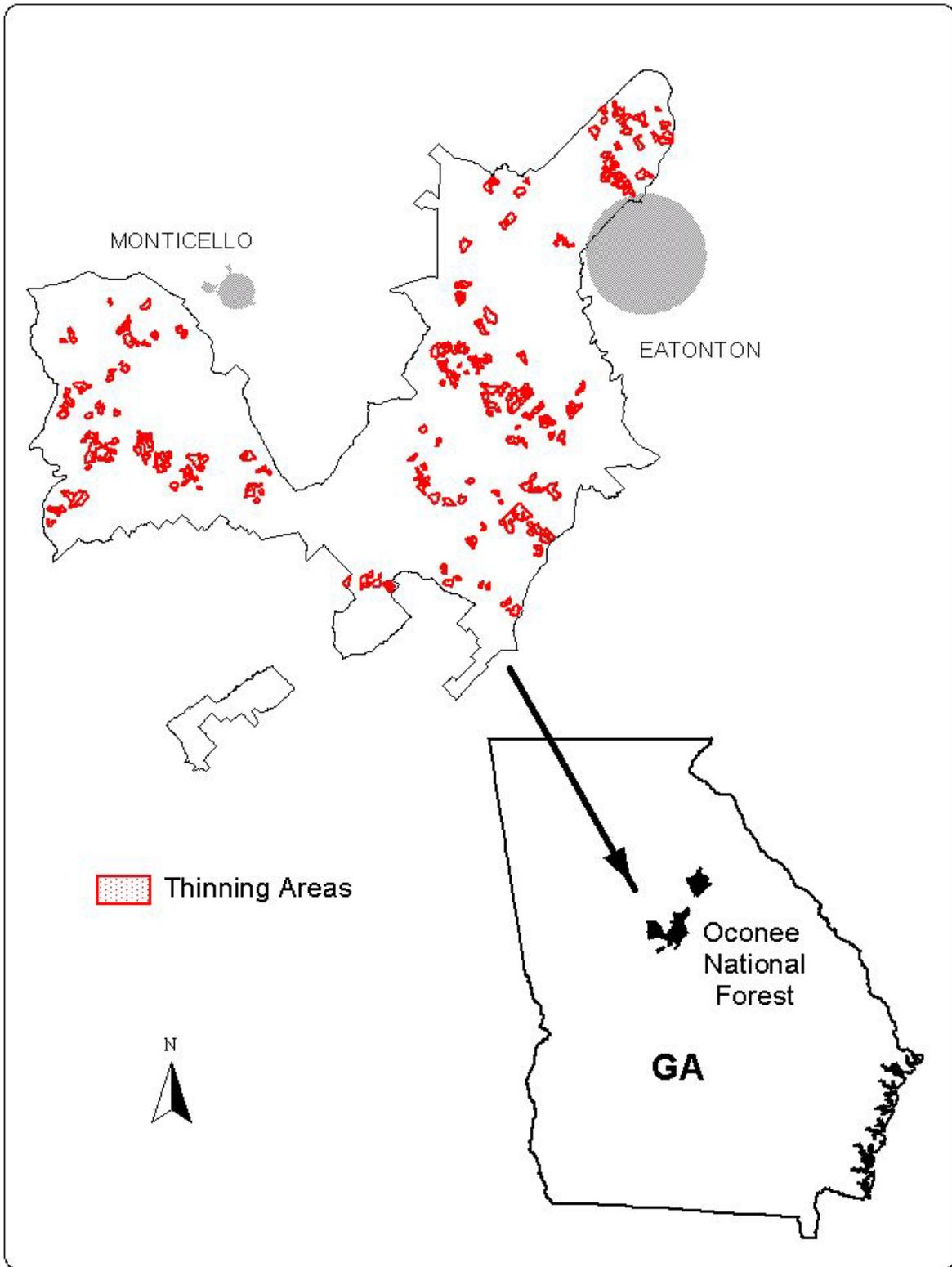
The following is a general description of the proposed action. A complete list of stands proposed for thinning is included in Appendix A.

#### 1.2.1 Vegetation Management

Figure 1-1 shows the location for the following proposed activities:

- a) Thin approximately 8339 acres in 208 timber stands that are in an overstocked condition.
- b) Use and maintenance of the existing road system, including temporary roads;

Figure 1-1: Commercial Thinning Vicinity Map



## 1.3 Purpose and Need for the Proposed Action

The purpose and need of the Proposed Action are, through harvesting and related activities, to:

- Improve the existing condition of timber stands to improve forest health and habitat for threatened and endangered (T&E) plants and animals, particularly the red-cockaded woodpecker (RCW).
- Reduce the risk of mortality to pine trees by the Southern Pine Beetle (SPB) in key RCW foraging habitat.
- Reduce fuel accumulations in key RCW foraging habitat within the project area.

### 1.3.1 Why Here, Why Now?

The existing condition of the proposed thinning areas has been evaluated and compared against the desired future condition for the area as described in the Forest Plan (LRMP). Where resources in the project area are found to be outside the desired future condition, opportunities for moving the resources towards the desired future condition exist.

The stands proposed for treatment are located in Management Area(s) 8.D and 8.D.1., Red-Cockaded Woodpecker Habitat Management Areas (RCW HMA). The management guidelines and desired future condition for these areas are located in Chapter 3, pages 3-138 through 3-144 in the LRMP; and Forest wide standards and guidelines may be found in Chapter 2 of the LRMP. Objectives for this management area as described in the Forest Plan are:

OBJ-8.D-05: Manage to keep the southern pine beetle hazard rating at Low in any one year

OBJ-8.D-08: Within the RCW Habitat Management Area (HMA) annually thin an average of 2500 acres of pine cover type for each of the first seven years of plan implementation and thereafter at a rate that will maintain southern pine beetle hazard at Low.

OBJ-8.D-10: Within the RCW HMA control midstory vegetation on 4000 acres annually during this plan cycle.

Currently, these stands are in an overstocked condition and contain nearly twice the number of stems that are needed for optimal RCW foraging habitat. These stands constitute a large percentage of the potential future foraging habitat needed to make RCW habitat recovery objectives. Loss of these stands would adversely affect the long-term production of quality RCW habitat and delay meeting RCW Recovery Plan Objectives.

These dense, overstocked stands are also more susceptible to insect and disease infestations, particularly the southern pine beetle. Thinning the stands would create areas that are more vigorous and thus make them less susceptible to attack.

## 1.4 Decision Framework

Given the purpose and need, the Responsible Official (Oconee District Ranger) will review the proposed action and the other alternatives in order to make the following decision:

- Select the No-Action Alternative (deferring action); or
- Select an action alternative; or
- Select a modified action alternative.

Should a decision be made to select an action alternative or a modification of an action alternative, the actions would be implemented over the next six-to-eight year period.

## 1.5 Public Involvement

On June 25, 2004, a scoping letter explaining the proposal and requesting site-specific information on the proposal was mailed to 69 individuals and organizations that have expressed previous interest in management on the Oconee Ranger District. In addition, the proposal appeared in both print and internet versions of the quarterly Schedule of Proposed Actions for the Chattahoochee-Oconee National Forests since January 2004. A legal notice requesting comments was also published in The Eatonton Messenger on July 1, 2004. Three total written and verbal responses were received during scoping. On July 15, 2004 the Forest Service hosted an open house for the public to comment or receive additional information about the proposed project.

The following issues were identified from public comments received during the scoping period and internal management concerns. Analysis responding to key issues will be evaluated and disclosed in Chapter 3 – Environmental Effects.

## 1.6 Key Issues

Issues are defined as a point of discussion, debate, or dispute about environmental effects. Issues are used to develop alternatives, mitigation measures, or analyze environmental effects. The issues related to the proposed action were identified by the District Interdisciplinary Team (IDT) and through comments from the public. The Forest Service separated issues into two groups: key and non-key issues.

The Council on Environmental Quality (CEQ) regulations specifies that environmental analysis focus on significant (key) issues. Issues determined not to be significant (non-key) shall be discussed only briefly and eliminated from detailed study [40 CFR 1500.1(b), 1500.2(b), 1500.4(c), 1501.7(3), and 1502.2(b)]. The key issues will be analyzed in Chapter 3 of this EA and will also help frame the decision. Each key issue has an issue statement and measurement. Measurements allow resources specialists to quantify and qualify anticipated effects. The non-key issues will be disclosed here in Chapter 1 with an analysis, but not in Chapter 3. They will not be used to frame the decision because the project would cause only inconsequential effects to these issues.

### **1.6.1 Key Issue #1: Water Quality**

*The proposed action may adversely affect water quality*

#### Measurements:

- Miles of existing temporary road utilized

### **1.6.2 Key Issue #2: Threatened and Endangered Species (T&E)**

*Harvest related activities may impact threatened and endangered species or their habitat*

#### Measurements:

- Acres of RCW habitat created

## **1.7 Non-key Issues**

The following issues were eliminated from detailed discussion in this Environmental Assessment because the project would cause only inconsequential effects to these issues.

### **1.7.1 Non-key Issue A: Restoration without Harvesting or Road Building**

This issue was considered as an alternative but eliminated from detailed study (section 2.2, Chapter 2). In addition, Alternative A – No-action addresses this issue.

### **1.7.2 Non-key Issue B: Heritage Resources**

*Harvest related activities may adversely affect heritage sites*

This issue is non-key due to site-specific field verification and avoidance.

Approximately 7,094 of the 8,339 acres proposed for vegetation management have been previously surveyed with State Historic Preservation Officer (SHPO) consultation. There are thirty-nine previously recorded heritage sites considered potentially eligible or eligible for nomination to the National Register of Historic Places (NHRP) within the stands proposed for vegetation management (Area of Potential Effect). In addition, thirty-one heritage sites were recorded during recent survey of the remaining 1,245 acres. None of the 31 heritage sites are considered eligible for nomination to the NRHP, pending SHPO and THPO concurrence.

The boundaries of the 39 protected heritage sites, including a 10-15 meter buffer zone, were marked on the ground at the time they were deemed potentially eligible for the NRHP. These heritage sites and their protective buffers will be avoided during all project activities.

Should additional or unknown cultural/heritage resource material be revealed during project implementation involving any cleared site or area, work on this project will cease until professional assessment and SHPO/THPO consultation has been made.

Alternative A

Since no action would take place with this alternative, there are no expected adverse direct, indirect, or cumulative effects.

Alternatives B & C

There are no expected adverse direct, indirect, or cumulative effects with implementation of either of these alternatives, as protected heritage sites are marked on the ground and avoided during project implementation.

**1.7.3 Non-key Issue C: Soil Resources**

*Harvest activities may adversely affect sensitive soils*

Much of the project area suffered extensive erosion and loss of topsoil following abandonment after the end of row crop agriculture in the early 1900’s. Since that time, conservation practices and restoration of vegetation has arrested erosion and restored productivity to the landscape. The areas proposed for thinning have been previously harvested, site prepared, and regenerated and soil productivity has been maintained or improved through the growth of forest stands on these sites. Other than prescribed burning, there have not been any other treatments in the stands.

The sites proposed for thinning are located mainly on upland ridges and side slopes and are typical of the Piedmont area. Soils on these landform positions are deep, well-drained soils with textures ranging from sandy loam to clay. Soil series include Hiawassee, Iredell, Gwinnett, Cecil, Louisburg, Pacolet, Wedowee, Wickham and Wilkes. These landforms and soils have slight to severe erosion hazard that can be mitigated by minimizing soil disturbance and maintaining soil cover during and after treatments.

This issue is non-key due to implementation of Forest Plan standards and best management practices (BMPs) on soil mapping units identified with erosion hazard.

The following table summarizes the soil series mapped within the project area. A complete listing of soil map acres by compartment and stand number is located in the project file and is available at the district office:

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Table 1-3: Comparison of Soil Map Units

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Soil Series	# Acres	Harvesting Limitations	Erosion Hazard
Hiawassee	2110	Slight to moderate	Slight to moderate
Pacolet	1673	Slight to moderate	Slight to moderate

Cecil	1284	Slight to moderate	Moderate to severe
Gwinnett	840	Slight to moderate	Slight to moderate
Wedowee-Pacolet complex	712	Slight to moderate	Slight to moderate
Wilkes	919	Moderate	Moderate
Louisburg	289	Moderate	Severe
Iredell	275	Moderate	Slight
Toccoa-Cartecay complex	189	Moderate to severe	Slight
Wickham	71	Moderate	Slight to moderate

Alternative A

There would be no changes in the soil conditions.

Alternative B

Some soil disturbance would occur in major skid trails and log landing sites. Expected impacts include compaction, rutting and erosion, which will be mitigated by use of Best Management Practices (BMP's). Harvesting activities may expose mineral soil, though this is expected to be less than 10% of the stand area and most would be naturally revegetated within a year after disturbance. The stands are located on moderately sloping sites so soil movement is minimal. Mitigation measures (Section 2.5, Chapter 2) and Forest Plan standards (BMPs) are applied to further reduce potential for compaction and long-term damage.

The effects are typically short-term when proper mitigations and best management practices are implemented in project treatments. When combined with the impacts of past and future projects that would occur on Federal lands, the effects of this project on soil resources would not noticeably alter existing conditions.

**1.7.4 Non-key Issue D: Scenery Resources**

*Harvest related activities may adversely affect scenic resources*

Within the project area the landscape character is predominantly natural appearing. Managed change is the primary cause of change in the visual elements of form, line, color, and texture. Evidence of human intervention in the appearance of the landscape is frequent. Management changes are designed to be moderate contrast or less and therefore compatible with the SIO (Scenic Integrity Objectives).

The project area contains high, medium, and low SIO's. Commercial thinning is considered to be an appropriate management activity within all three of these SIO's for both 8.D and 8.D.1 Management Areas. A complete list of SIO's for proposed stands along with Ecological Treatment Standards are located in Appendix E of this document.

This issue is non-key because scenery mitigation has been incorporated into proposed activities; therefore, all activities in the action and no action alternatives would meet assigned SIOs.

#### **1.7.5 Non-key Issue E: Recreation Resources**

*Harvest related activities may adversely affect recreation opportunities*

The Oconee National Forest offers various opportunities for hiking, atv's, horse trails, camping, and hunting. Within the project area there are no developed recreation areas and approximately 50 dispersed hunting camps. These hunting camps are scattered throughout the project area and receive peak use during the fall deer hunting season. However, there are enough sites scattered across the district to accommodate demand if there are active thinning operations within the vicinity of a particular camp. In addition, there will be warning signs posted along forest roads during logging operations to increase safety for forest visitors while traveling on forest roads. For these reasons, no adverse effects are expected to occur to the recreation resource as a result of the proposed thinning operations.

#### **1.7.6 Non-key Issue F: Financial Concerns**

*Harvest related activities may have adverse effects to non-timber related markets*

This issue is non-key because it is beyond the scope of this project to place a quantifiable number on values such as aesthetics, habitats, and recreation opportunities. It would be difficult to assign quantifiable numbers to those values without introducing personal judgments into the analysis. Any two analysts would arrive at different results. Environmental effects to these resources are discussed in the EA and with mitigation measures in place; adverse effects to these resources would be negligible. Forest Service policy requires economic analysis of timber sale costs and benefits. An economic impact analysis of resource values is not required if environmental effects are minimal. A discussion of non-market valuation is described in the EIS to the LRMP to which this document is based on (see also the Financial Analysis, Appendix D).

#### **1.7.7 Non-key Issue G – Air Quality**

*Prescribed fire may decrease air quality in the watershed*

There is no prescribed burning proposed under this document. However, prescribed burning is expected to occur within the project area but would be analyzed under a separate environmental decision document. This issue is non-key because prescribed burning on National Forest lands is done under specific weather conditions designed to minimize the effect on air quality. The current effect from all sources now contributing to air quality is insignificant.

### **1.7.8 Non-key Issue H – Other Areas of Concern**

*Harvest activities may adversely affect park lands, prime farmlands, wetlands, wild and scenic rivers, ecologically critical areas, or local law or requirements imposed for the protection of the environment.*

This Commercial Thinning Project does not propose actions within park lands, prime farmlands, wetlands (as per 1977 Executive Orders 11988 and 11990), wild or scenic rivers, or ecologically critical areas. It also would not violate local law or requirements imposed for the protection of the environment.

## **1.8 Project Record**

This EA incorporates by reference the project record (40 CFR 1502.21). The project record contains specialist reports and other technical documentation used to support the analyses and conclusions in this EA.

Relying on specialist reports and the project record helps implement the CEQ Regulations' provision that agencies should reduce NEPA paperwork (40 CFR 1500.4), and that NEPA documents be analytic rather than encyclopedic, kept concise, and no longer than absolutely necessary (40 CFR 1502.2). The objective is to furnish enough site-specific information to demonstrate a reasoned consideration of the environmental impacts of the alternatives and how these impacts can be mitigated, without repeating detailed analysis and background information available elsewhere. The project record is located at the Oconee Ranger District Office in Eatonton, GA.

# CHAPTER TWO

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## 2.0 Alternatives

Chapter 2 is the “heart” of the EA (40 CFR 1502.14) and describes alternatives the Forest Service considered in addition to the proposed action. It also summarizes each alternative’s effects on the issues introduced in Chapter 1.

### 2.1 Range of Alternatives

The range of alternatives developed and analyzed by the interdisciplinary team was driven by the purpose and need underlying the proposed action, and by the key issues responding to the proposed action. An alternative to the proposed action must (1) reasonably respond to the purpose and need, and (2) address one or more key issues. The only exception is the No-Action Alternative, which is required under Council on Environmental Quality (CEQ) regulation 40 CFR 1502.14(d).

The interdisciplinary team (IDT) considered four alternatives. Following internal review, two alternatives were developed in detail and two were eliminated from detailed study. Each of the alternatives developed in detail complies with the standards and guidelines identified in the Forest Plan.

Individual alternative descriptions follow, along with estimates of the activities to take place.

### 2.2 Alternatives Considered but Eliminated from Detailed Study

#### 2.2.1 Alternative A – No Timber Harvesting

This alternative focused on an ecosystem restoration proposal without commercial timber harvest; instead trees that would otherwise be sold and harvested would be cut and left on site. This alternative was dropped from detailed study because it did not meet the Purpose and Need of the project. The trees that are cut and left would create an unnatural and hazardous fuel loading during prescribed burning and could jeopardize the remaining green trees, while also increasing the risk of insects and disease. Portions of this alternative are met with Alternative A – No Action.

#### 2.2.2 Alternative B – Additional Timber Harvest

This alternative contained an additional 660 acres of proposed thinning. These stands were dropped from the original proposed action because (a) there was insufficient current information available as to the potential effects of harvesting these stands on water quality within three separate areas described as having impaired streams within the project area or (b) the stands were located outside of the 8.D or 8.D.1 Management Prescription.

## 2.3 Alternatives Analyzed in Detail

Two alternatives were developed by the IDT in response to the issues and concerns regarding the proposed action; Alternative A – No-Action and Alternative B – Proposed Action. The action alternative fulfills the specific purpose and need for these actions. Mitigation measures are also described in this chapter.

The following table summarizes management activities within each of the alternatives.

Table 2-1: Management Activities for Each Alternative

Activity	Alternative	
	A	B
Commercial Thinning	0 acres	8339

### 2.3.1 Alternative A – No Action

Under this alternative, the projects described in the proposed action would not be accomplished. No management actions would be taken to improve the existing condition of the environment in the project area. This alternative serves as the environmental baseline for analysis of effects.

### 2.3.2 Alternative B – Proposed Action

This alternative was developed to improve existing stand conditions to meet RCW habitat needs; to reduce the risk of mortality of these stands to the southern pine beetle; and to reduce longterm fuel accumulations. Specific activities and locations are summarized below.

Following is a summary of activities proposed in Alternative B. A complete listing of the stands proposed for treatment may be found in Appendix A.

Table 2-2: Summary of Treatments – Alternative B

- a) Thin approximately 8339 acres in 208 timber stands that are in an overstocked condition. The majority of these stands (96%) are less than 40 years in age and are typed as a loblolly pine (98%) or loblolly pine-hardwood (2%) forest type.
- b) Use and maintenance of the existing road system, including temporary roads;

## 2.4 Mitigation Measures for the Action Alternatives

Mitigation is defined as measures designed to reduce or prevent undesirable effects that could be caused by an action. Mitigation can include avoiding an effect, minimizing the effect by limiting the action, rectifying the effect, reducing the effect through maintenance, or compensating for the effect. The mitigation measures listed here are designed to prevent or reduce adverse effects resulting from alternative implementation. The following mitigation measures are required for Alternative B:

1. Heavy equipment is not allowed on sensitive soils when soils are wet. Forest Plan Standards limit the area of soil disturbance to less than 10% of the harvest unit. If unacceptable impacts begin to occur, such as excess rutting, then harvesting will be suspended until ground conditions improve.
2. Log decks and skid trails with exposed mineral soil will be disked and revegetated in order to reduce potential erosion and compaction problems.
3. Intermittent springs and seeps would be mapped during unit marking. No equipment would be allowed to cross these areas when they are wet.

The following tables compare environmental effects by alternative:

Table 2-5: Comparison of Environmental Effects in the Project Area by Key Issue

Issue	Measurements	Alternative A (No Action)	Alternative B (Proposed Action)
Key Issue#1: Water Quality	Miles of existing temporary road utilized	0	75
Key Issue#2: Threatened & Endangered Species	Acres of RCW habitat created  PETS adversely affected?	0  yes	8339  no

## CHAPTER THREE

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### 3.0 Environmental Impacts

This chapter forms the scientific and analytical basis for the comparison of alternatives as required by the National Environmental Policy Act (NEPA). Included in this chapter are disclosures of direct, indirect, and cumulative effects of the alternatives on the different resources relevant to the key issues. Direct and indirect effects occur at, or near the same time and place as a result of the action [40 CFR 1508 (a) and (b)]. They have been combined in this chapter, as it is difficult to completely separate between the two effects. Cumulative effects result “...*from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time*” (40 CFR 1508.7). Reports from different resource specialists supplied information for portions of this analysis.

Effects analyses are disclosed by key issue in this chapter. The two key issues associated with this proposed project were identified through a public participation process, which included input from Forest Service natural resource specialists, other government agencies, organizations, and individuals (see Section 1.6, Chapter 1). The key issues were determined to be relevant to the decision to be made concerning the Commercial Thinning Project. Other resources and issues (non-key issues) were eliminated from discussion in this chapter (see Section 1.7, Chapter 1).

#### 3.1 Effects Related to Key Issue #1; Water Quality

Issue Statement: *The proposed action may adversely affect water quality*

Measurements:

- Miles of existing temporary road utilized

A Hydrologic Unit Code (HUC) is a watershed of a specific scale or size used by multiple agencies to organize or catalogue hydrologic data. Using this system, water resources are organized by levels. Basically, the United States was divided and subdivided into successively smaller hydrologic units, which are currently classified into 6 levels (USGS Water-Supply Paper 2294). Table 3-1 lists these levels. Each Hydrologic Unit is assigned a unique *code*, which often results in these watersheds being called HUCs. This is an acronym for Hydrologic Unit Code.

Streams in the project vicinity are part of the Upper Ogeechee River and Upper Oconee River Systems. These Rivers merge and become the Altamaha River, which then drains into the Atlantic Ocean. Streams in the project vicinity are warm water systems with designated beneficial uses that include fishing, recreation, and drinking water supply. The dominant beneficial use in the project vicinity is fisheries.

**Table 3-1 – Hydrologic Unit Code Levels as Defined by U.S. Geological Survey**

Level	Description
1	Major Geographic Areas or Regions (i.e., South Atlantic Gulf Region)
2	Area drained by a River System, a reach of a river system and its tributaries in that reach, or a closed basin (i.e., Ogeechee-Savannah, or Altamaha- St. Marys)
3	This level further divides larger river systems (i.e., Altamaha River Basin)
4	Part or all of a surface drainage basin, a combination of drainage basins, or a distinct hydrologic feature. (i.e., Upper Oconee, Upper Ocmulgee)
5	Large Watershed Delineation (i.e., Ocmulgee River – Big Sandy Creek, Big Cedar Creek, Etowah River, Tallulah River)
6	Subwatershed (small watershed delineation)

The following table displays the miles of temporary road utilized by alternative:

Table 3-1: Temporary Roads by Alternative

Measurement	Alternative A	Alternative B
Miles of existing temporary road utilized	0	75

**3.1.1 Alternative A – No Action**

**Direct and Indirect Effects**

Implementation of Alternative A would perpetuate the existing condition in the project area. Under this alternative, there would be no land disturbance resulting from project implementation.

**Cumulative Effects**

There would be no cumulative effects with the No Action Alternative.

**3.1.2 Alternative B – Proposed Action**

**Direct and Indirect Effects**

Proposed thinning treatments will take place in several subwatersheds, and treatments would be implemented over a 7-year period. The treatment acres, percent of subwatershed treated, and estimated miles of existing temporary road for each subwatershed or 6<sup>th</sup> Level HUC are listed below in table 3-2.

**Table 3-2 – Treatment Acres and Miles of Existing Temporary Road by Subwatershed for the Proposed Action**

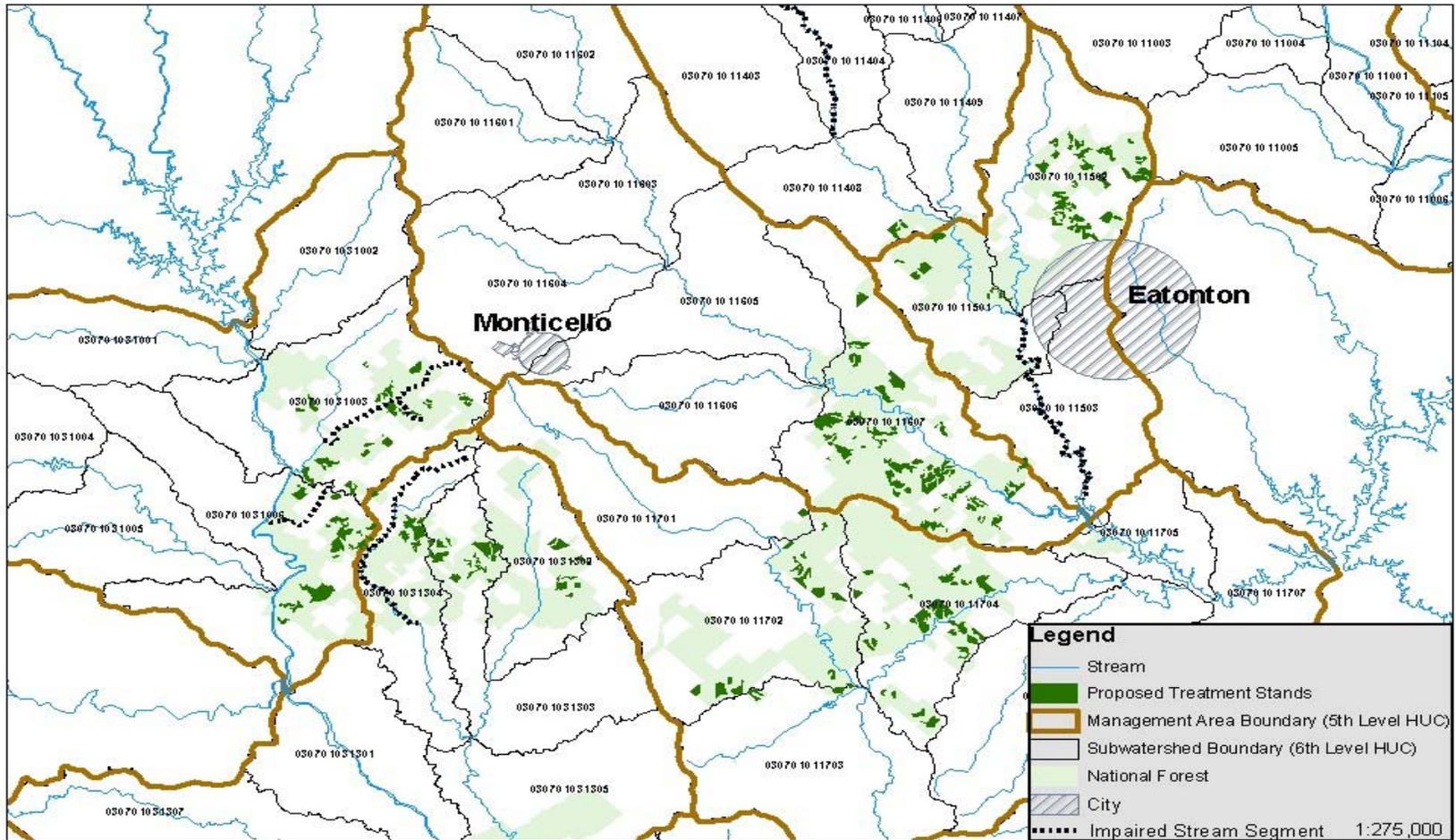
5 <sup>th</sup> Level HUC	Subwatershed Code (6 <sup>th</sup> Level HUC)	Treatment Acres	Percent of Subwatershed Treated	Miles of Existing Temporary Road Used
<b>Little River - Upper</b> 0307010114	030701011408	102	0.9	0.6
<b>Little River – Lower</b> 0307010115	030701011501	219	1.7	2.1
	030701011502	1216	5.7	13.1
	030701011503	10	0.1	0.1
<b>Murder Creek</b> 0307010116	030701011606	1	0.01	0
	030701011607	2208	7.3	19.7
<b>Big Cedar Creek</b> 0307010117	030701011701	42	0.2	0.2
	030701011702	604	2.7	3.8
	030701011703	107	0.4	0.6
	030701011704	1172	5.3	11.8
	030701011706	1	0.002	0.4
<b>Ocmulgee River – Big Sandy Creek</b> 0307010310	030701031003	765	3.0	5.6
	030701031006	828	3.1	8.1
<b>Ocmulgee River – Rum Creek</b> 0307010313	030701031302	278	1.9	3.4
	030701031303	468	2.6	3.3
	030701031304	334	2.4	2.6

Five streams or stream segments in the project area have been identified as partially supporting or not supporting beneficial uses due to biota impairment, which is an indirect effect of excessive sedimentation. These streams or stream segments with their 6<sup>th</sup> Level HUC include Wise Creek (030701031003), Harmon Pye Branch (030701031003), Long Branch (030701031006), Gladesville Creek (030701031304), and Little River (030701011501, 030701011503). Figure 3-1 shows their location, the subwatershed (6<sup>th</sup> level HUC boundary) and proximity to proposed treatments. For each of these streams, non-point source pollution is cited as the source of impairment (GA DNR, 2002). Critical stands have been dropped from the proposed action to insure no further degradation of these streams. The percent of subwatershed that will be treated over several years ranges from 0.1 to 3.1 for subwatersheds with impaired segments.



Figure 3-1

### Proposed Treatment Stands with Watersheds (5th and 6th Level HUCs)



Direct effects include erosion from skid trails, log landings and reopening of existing temporary roads. No new permanent or temporary roads will be constructed for this project. These eroded soils result in sedimentation if transported to a water body. On most forested watersheds, sediment is the most troublesome pollutant and roads are a major source of that sediment. Sediment can adversely impact water quality by increasing turbidity, affecting the geomorphology and capacity of channels, changing substrate size distribution, altering stream temperatures, which collectively results in loss or degradation of aquatic habitats.

Most of the existing temporary roads that will be used for this project follow ridges with some short segments located on slopes. These roads have been in place and used for administrative purposes for many years. Brush and fallen woody debris will be removed from temporary roads during project implementation. Best Management Practices (BMPs) for Forestry will be used to insure adequate drainage and minimal effects during project implementation. Most of the temporary roads will require coweeta dips and spot surface gravel when treatments are implemented. Skid trails, log landings, and temporary roads are all short-term disturbances with effects that are also short in duration. These areas will be treated for erosion control after use.

**Cumulative Effects:**

The primary sources of additional sediment in subwatersheds in the project vicinity are county roads and private land development. The proposed treatments will take place across several subwatersheds and over a period of 7 years. It is unlikely that given the location and types of management proposed, any adverse effects on aquatic resources would be measurable, and therefore contribute to cumulative effects.

Mitigation through the use of Best Management Practices for Forestry, Forest Plan standards, and the Riparian Corridor management prescription is expected to minimize sedimentation from treatments. There are no adverse cumulative effects anticipated with this alternative.

### 3.2 Effects Related to Key Issue #2; Threatened & Endangered Species

Issue Statement: *Harvest related activities may impact Proposed Endangered and Threatened Species (PETS)*

Measurements:

- Acres of RCW habitat created
- PETS adversely affected?

Additional detailed analysis on wildlife habitat is disclosed in Appendix B, Biological Evaluation (BE), and Appendix C, Management Indicator Species (MIS). ***Discussion of effects to PETS in this chapter focuses on RCW, Bachman’s sparrow and Oglethorpe oak as these are the species identified within or near the project area.*** Also included in this section is a discussion of Locally Rare Species as this is not covered elsewhere in the document. The following table displays the acres of habitat treated by alternative:

Table 3.2: Acres of Habitat Treated by Alternative

Action	Alternative A	Alternative B
Commercial Thinning	0	8339
<b>Total</b>	<b>0</b>	<b>8339</b>

### Proposed, Endangered, Threatened, and Sensitive (PETS) Species

There are 116 species (26 federally listed and 90 sensitive) on the Chattahoochee-Oconee National Forest PETS species list. From this list, potentially affected species were identified by: 1) reviewing their general habitat preferences, 2) consulting records of known locations of PETS species prepared by the Georgia Natural Heritage Program (GNHP) historical records, and 3) consultations with other agencies and universities, as well as reviewing data from Neotropical Migratory Bird (NTMB) Point Samples, GDNR Bald Eagle Flights, Breeding Bird Census Routes, PETS Risk Assessment for the Oconee National Forest, and general observations. The following 17 PETS species are within the range of the Oconee National Forest based on a review of the above sources.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
<u>(Plants)</u>		
Relict trillium	<i>Trillium reliquum</i>	Federally Endangered
Oglethorpe oak	<i>Quercus oglethorpensis</i>	Sensitive
Scherwin’s false indigo	<i>Amorpha schwerinii</i>	Sensitive
Bay Starvine	<i>Schisandra glabra</i>	Sensitive
<u>(Terrestrial Animals)</u>		
Red-cockaded woodpecker	<i>Picoides borealis</i>	Federally Endangered
Bald eagle (nests)	<i>Haliaeetus leucocephalus</i>	Federally Threatened
Wood stork (foraging habitat)	<i>Mycteria americana</i>	Federally Endangered
Bachman’s sparrow	<i>Aimophila aestivalis</i>	Sensitive

Migrant loggerhead shrike	<i>Lanius ludovicianus migrans</i>	Sensitive
Raffinesque big-eared bat	<i>Corynorhinus rafinesquii</i>	Sensitive
(Insects)		
Appalachian snaketail	<i>Ophiogomphus incurvatus</i>	Sensitive
Margarita river skimmer	<i>Macromia margarita</i>	Sensitive
(Aquatics)		
Altamaha shiner	<i>Cyprinella xaenura</i>	Sensitive
Inflated floater	<i>Pygandon gibbosa</i>	Sensitive
Ocmulgee shiner	<i>Cyprinella callisema</i>	Sensitive
Robust redhorse	<i>Moxostoma robustum</i>	Sensitive
Bluestripe shiner	<i>Cyprinella callitaenia</i>	Sensitive

Of these, all but 5 were dropped from further consideration because their range does not extend into the project area or their specific habitat requirements are not found in the areas of proposed activities. A detailed rationale for elimination of these species is presented in the Biological Evaluation (BE). The BE concludes that the proposed project is not likely to adversely effect the RCW and it also would have no adverse impacts to any sensitive species.

### **Locally Rare Species**

From a list of 84 plants listed on the Chattahoochee-Oconee National Forest 2004 Locally Rare Species List (USFS, 2004—see project file), the GNHP data indicates that only the Carolina windflower (*Anemone caroliniana*), log fern (*Dryopteris celsa*), and dwarf palmetto (*Sabal Minor*) occur within the counties where the project is proposed. Although these 3 plants may occur in the general vicinity or the surrounding area, none of these species are known from the project area (GDNR, 2003).

From a list of 27 animal species (not including fish species) listed on the Chattahoochee-Oconee National Forest 2004 Locally Rare Species List, the GNHP indicates the four-toed salamander (*Hemidactylium scutatum*) occurs in Jasper County. The four-toed salamander has been recorded from the Hillsboro Northwest, Southwest, and Southeast Quarter Quads, all of which contain land within the project area. The four-toed salamander is known to inhabit swamps, boggy streams and ponds, and wet woods (GDNR, 2003).

Mussel surveys in 2002 found two locally rare species on the Oconee National Forest; the Georgia elephant-ear (*Elliptio dariensis*) and the Altamaha pocketbook (*Lampsilis dolabraeformis*). Both of these mussels are endemic to the Altamaha system and were found at the confluence of Falling Creek and the Ocmulgee River.

### **3.2.1 Alternative A – No Action**

#### **Direct, Indirect, and Cumulative Effects**

#### **Threatened, Endangered, and Sensitive Species**

##### **RCW**

This species uses open pine-woods and habitat is generally of mature trees with little or no midstory, resembling a park-like stand. Currently, potential foraging habitats within the project area are overstocked with trees, which hinders RCW foraging and increases competition from other vertebrates. There are currently seven inactive RCW cluster sites, one active RCW cluster site and several potential recruitment areas within the project area.

Under this alternative, no thinning activities would occur. The general health of forested stands in the project area would likely decline as overcrowded trees become more susceptible to attack by the Southern Pine Beetle. Although the pine stands would become more mature with time under this alternative, they would continue to be overstocked and would become more crowded. Over time, potential RCW foraging and nesting habitat within the project area would become less suitable as future habitat for the species. Although this Alternative would not directly affect the RCW, indirect effects on potential habitat for the species would be adverse and could result in a violation of the Endangered Species Act, RCW EIS Guidelines, the RCW Recovery Plan, and the Forest Plan for the Chattahoochee-Oconee National Forests. RCW would not be able to recruit into the project area if no vegetation management activities are conducted to create suitable habitat.

Cumulatively, habitat capability for the RCW would decrease.

##### **Bachman's Sparrow**

As with RCW, Bachman's sparrow habitat would not be created under the No Action Alternative. Potential habitat for this species would also be lost over the long-term.

##### **Oglethorpe Oak**

Alternative A would have no effects to Oglethorpe oak.

##### **Locally Rare Species**

Log fern, dwarf palmetto and Carolina windflower are the only locally rare plants within the general vicinity of the project area. Alternative A would not affect these species.

The four-toed salamander is known to inhabit swamps, boggy streams and ponds and wet woods within or adjacent to the project area. Alternative A would have no effect on these areas.

The site where the Georgia elephant-ear and the Atamaha pocketbook were found is approximately 10 miles south of the project area. Alternative A would have no effect on these species.

### **3.2.2 Alternative B – Proposed Action**

#### **Direct and Indirect Effects**

Alternative B proposes about 8339 acres of commercial thinning. Thinning these acres to provide habitat would have positive, negative, or no effects to wildlife, depending on the individual species.

#### **Threatened, Endangered, and Sensitive Species**

##### **RCW**

Activities proposed under Alternative B would enhance the quality of RCW habitat on the forest. Thinning these pine stands would improve forest health, reduce the threat of SPB infestations, and make the project area more suitable for RCW nesting and foraging in the future. This Alternative would be working toward the recovery objectives for RCW on the Oconee National Forest within the direction of the RCW EIS, Recovery Plan, Endangered Species Act, and the LRMP.

##### **Bachman's Sparrow**

This species is found within open pine forests subject to frequent fires. The specific habitat this species prefers is large areas of well-developed bunch grass and herb layer with limited shrub and hardwood midstory. Bachman sparrows have been identified in compartments adjacent to the project area.

Implementation of Alternative B may temporarily disturb or displace a few individuals during thinning operations. However, the likelihood of this is low due to low population densities within the project area. Overall, proposed thinning would benefit this species by lowering stem densities and thereby improving habitat conditions within the project area.

##### **Oglethorpe Oak**

The extent of the area occupied by Oglethorpe oak is known and documented. The project area is approximately five miles from the area where Oglethorpe oaks have been identified. The majority of the thinning activities are proposed in areas that do not have Iredell soils, which may indicate the presence of the Oglethorpe oak. However, if an Oglethorpe oak is located during harvest activities it would not be cut and proper procedures for release of the stems around the tree would be encouraged. Based on current plant survey information no impacts to Oglethorpe oak are expected with the implementation of Alternative B as it does not occur in the project

area. More detailed information regarding this species is referenced in the Biological Evaluation in Appendix B.

**Locally Rare Species**

Log fern, dwarf palmetto and Carolina windflower are the only locally rare plants within the general vicinity of the project area. However, implementation of Alternative B would not affect these species because they are not found within the dense pine stands proposed for thinning.

The four-toed salamander is known to inhabit swamps, boggy streams and ponds and wet woods within or adjacent to the project area. However, implementation of Alternative B would not effect these areas due to the presence of riparian buffer strips and streamside management zones.

The site where the Georgia elephant-ear and the Atamaha pocketbook were found is approximately 10 miles south of the project area. Alternative B would have no effect on these species due to the distance of their location from the project area.

**Management Indicator Species (MIS)**

Following is a summary of the effects of each alternative on MIS. A more detailed discussion of MIS is in Appendix C.

**Summary of Effects of Alternatives on the MIS**

	ALT. A	ALT.B
Acadian flytcher	M	M
Pileated woodpecker	M	M
Hooded warbler	M	M
Field sparrow	M	M
Prairie warbler	M	I
Wood thrush	M	M
Scarlet tanager	M	M
Swainson’s warbler	M	M
Pine warbler	M	I
Red-cocked woodpecker	D	I
White-tailed deer	M	I

M = maintain habitat capability (no change expected)

I = increase in expected habitat capability

D = decrease in expected habitat capability

There is potential for nest failure or loss with any forest silvicultural treatment involving the cutting or deadening of trees, either canopy or understory. The proposed timber cutting would take place over five to seven years and not more than two harvest units are generally open to harvest at any time. This timber cutting management reduces the potential for an area to be cut during nesting season. If a nest is lost early in the nesting season, many species will re-establish a nest. There would, however, be a limited loss of fledglings and nests from implementation of Alternative B.

#### Habitat Connectivity

Alternative B would not adversely affect habitat connectivity. Following implementation, habitat connectivity would be maintained through the analysis area via riparian areas, non-harvested areas, as well as harvested areas.

#### **Cumulative Effects**

The cumulative effects of past vegetative management have not caused adverse effects to wildlife in the analysis area, nor would the combination of Alternative B cause adverse cumulative effects.

# CHAPTER FOUR

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## 4.0 List of Preparers

The following individuals helped develop this environmental assessment:

### **INTERDISCIPLINARY TEAM MEMBERS:**

Charlene Breeden – Forest Hydrologist  
Elizabeth Caldwell - Wildlife Biologist  
Mitzi Cole – Fisheries Biologist  
Sandra Henning – NEPA Coordinator  
John Mayer – Forest Archaeologist  
Dick Rightmyer – Forest Soil Scientist  
Tim Walker – Timber Management Assistant  
Cindy Wentworth – Botanist

### **OTHER FOREST SERVICE PERSONNEL PROVIDING INPUT:**

William Nightingale – District Ranger

# APPENDIX A

## Commercial Thinning – List of Stands by Alternative

Compartment	Stand	Forest Type	Age	Acres	Alternative
102	1	Loblolly	31	84	B
102	6	Loblolly	31	26	B
102	14	Loblolly	20	12	B
102	26	Loblolly	20	16	B
102	27	Loblolly	20	44	B
103	11	Loblolly	35	60	B
104	1	Loblolly	28	51	B
104	9	Loblolly	28	29	B
104	22	Loblolly	21	15	B
104	24	Loblolly	28	21	B
104	41	Loblolly	28	8	B
105	4	Loblolly	25	58	B
105	11	Loblolly	25	18	B
106	1	Loblolly	21	43	B
106	2	Loblolly	21	7	B
106	4	Loblolly	21	15	B
106	5	Loblolly	24	26	B
107	7	Loblolly	22	34	B
107	10	Loblolly	22	82	B
107	13	Loblolly	23	48	B
107	15	Loblolly	23	84	B
108	2	Loblolly	33	76	B
108	3	Loblolly	28	23	B
108	5	Loblolly	33	27	B
108	8	Loblolly	22	48	B
108	12	Loblolly	22	38	B
108	17	Loblolly	33	19	B
108	19	Loblolly	37	6	B
108	25	Loblolly	21	55	B
108	27	Loblolly	21	32	B
108	40	Loblolly	33	12	B
108	43	Loblolly	33	20	B
108	44	Loblolly	33	32	B
110	36	Loblolly	21	29	B
111	5	Loblolly	29	22	B
111	6	Loblolly	29	29	B
111	7	Loblolly	29	20	B
111	18	Loblolly	20	10	B

Compartment	Stand	Forest Type	Age	Acres	Alternative
111	33	Loblolly	29	17	B
111	34	Loblolly	28	22	B
111	39	Loblolly	21	146	B
112	6	Loblolly	19	35	B
112	8	Loblolly	18	13	B
112	11	Loblolly	44	13	B
112	13	Loblolly	31	36	B
112	27	Loblolly	28	42	B
112	29	Loblolly	18	16	B
112	31	Loblolly	28	19	B
112	59	Loblolly	22	23	B
115	5	Loblolly	24	16	B
115	8	Loblolly	26	63	B
115	14	Loblolly	23	15	B
115	16	Loblolly	25	56	B
115	18	Loblolly	25	171	B
115	20	Loblolly	23	14	B
115	20	Loblolly	23	13	B
115	23	Loblolly	26	29	B
115	26	Loblolly	18	15	B
115	27	Loblolly	25	10	B
115	29	Loblolly	18	12	B
116	4	Loblolly	25	28	B
116	7	Loblolly	25	31	B
116	10	Loblolly	39	36	B
116	15	Loblolly	44	94	B
116	19	Loblolly	64	61	B
116	24	Loblolly	64	88	B
120	2	Loblolly	32	64	B
120	8	Loblolly	32	30	B
120	11	Loblolly	32	20	B
120	13	Loblolly	19	20	B
120	15	Loblolly	22	18	B
120	16	Loblolly	19	69	B
120	33	Loblolly	32	25	B
120	34	Loblolly	32	12	B
123	1	Loblolly	28	44	B
123	13	Loblolly	23	59	B
123	17	Loblolly	27	65	B
123	19	Loblolly	27	20	B
123	20	Loblolly	27	66	B
123	21	Loblolly	22	11	B
123	23	Loblolly	22	17	B
125	14	Loblolly	26	9	B

Compartment	Stand	Forest Type	Age	Acres	Alternative
125	15	Loblolly	26	25	B
125	20	Loblolly	26	46	B
125	21	Loblolly	26	18	B
127	8	Loblolly	25	32	B
127	9	Loblolly	25	27	B
127	32	Loblolly	25	15	B
128	2	Loblolly	21	17	B
128	7	Loblolly	21	37	B
128	11	Loblolly	20	75	B
128	23	Loblolly	20	14	B
130	5	Loblolly	19	56	B
130	6	Loblolly	31	18	B
130	7	Loblolly	31	43	B
130	8	Loblolly	19	52	B
130	9	Loblolly	31	22	B
130	12	Loblolly	31	49	B
131	2	Loblolly	40	19	B
131	4	Loblolly	31	119	B
131	13	Loblolly	31	7	B
133	15	Loblolly	28	31	B
133	16	Loblolly	28	57	B
133	20	Loblolly	28	51	B
133	38	Loblolly	54	20	B
134	7	Loblolly- Hardwood	27	26	B
134	9	Loblolly	27	66	B
134	10	Loblolly	27	18	B
134	31	Loblolly	26	189	B
134	32	Loblolly	26	154	B
134	33	Loblolly	26	19	B
136	1	Loblolly	26	37	B
136	4	Loblolly	26	24	B
136	10	Loblolly	26	21	B
136	14	Loblolly	22	7	B
137	1	Loblolly	25	76	B
137	10	Loblolly	22	56	B
137	12	Loblolly	24	77	B
139	6	Loblolly	32	40	B
139	9	Loblolly	32	17	B
139	18	Loblolly	24	13	B
140	18	Loblolly	32	42	B
140	24	Loblolly	32	31	B
140	29	Loblolly	32	22	B
142	1	Loblolly	23	25	B

Compartment	Stand	Forest Type	Age	Acres	Alternative
142	7	Loblolly	21	9	B
142	13	Loblolly	22	7	B
142	23	Loblolly	31	87	B
142	43	Loblolly	23	11	B
143	3	Loblolly	29	43	B
143	17	Loblolly- Hardwood	52	92	B
144	3	Loblolly	29	78	B
144	7	Loblolly	29	131	B
144	7	Loblolly	29	161	B
144	8	Loblolly	23	20	B
144	11	Loblolly	29	18	B
144	14	Loblolly	23	56	B
144	23	Loblolly	29	35	B
144	24	Loblolly	29	32	B
144	26	Loblolly	29	14	B
144	30	Loblolly	29	24	B
144	35	Loblolly	29	57	B
144	36	Loblolly	29	44	B
145	31	Loblolly	35	20	B
146	1	Loblolly	24	89	B
146	2	Loblolly	21	68	B
146	4	Loblolly	36	29	B
146	10	Loblolly	24	50	B
146	11	Loblolly	24	7	B
146	14	Loblolly	36	27	B
146	28	Loblolly	23	5	B
146	31	Loblolly	18	10	B
146	32	Loblolly	20	29	B
146	33	Loblolly	36	10	B
146	39	Loblolly	59	9	B
147	7	Loblolly	25	42	B
147	10	Loblolly	25	5	B
147	15	Loblolly	23	20	B
147	18	Loblolly	34	44	B
147	21	Loblolly	23	19	B
147	22	Loblolly	34	11	B
147	28	Loblolly	34	33	B
150	1	Loblolly	29	130	B
150	2	Loblolly	29	44	B
150	6	Loblolly	20	17	B
151	11	Loblolly	32	98	B
151	12	Loblolly	32	64	B
152	3	Loblolly	29	56	B

Compartment	Stand	Forest Type	Age	Acres	Alternative
152	10	Loblolly	29	77	B
152	17	Loblolly	18	18	B
152	37	Loblolly	19	7	B
153	10	Loblolly	19	10	B
153	19	Loblolly- Hardwood	23	33	B
153	20	Loblolly	23	18	B
154	1	Loblolly	27	72	B
154	3	Loblolly	23	23	B
154	5	Loblolly- Hardwood	22	8	B
154	7	Loblolly	23	30	B
154	8	Loblolly	23	31	B
154	12	Loblolly	27	51	B
154	13	Loblolly	27	35	B
154	15	Loblolly	23	66	B
154	20	Loblolly	27	24	B
154	36	Loblolly	23	17	B
155	1	Loblolly	25	59	B
155	2	Loblolly	25	58	B
155	3	Loblolly	24	64	B
155	4	Loblolly	24	82	B
155	6	Loblolly	26	24	B
155	7	Loblolly	26	43	B
156	2	Loblolly	26	40	B
156	4	Loblolly	25	90	B
156	7	Loblolly	25	35	B
156	19	Loblolly	20	12	B
156	29	Loblolly	22	138	B
157	10	Loblolly	24	68	B
157	12	Loblolly	24	40	B
157	13	Loblolly	24	27	B
157	15	Loblolly	24	25	B
157	16	Loblolly	24	13	B
157	18	Loblolly	22	33	B
159	4	Loblolly	31	58	B
159	9	Loblolly	31	66	B
159	16	Loblolly	21	11	B
159	26	Loblolly	18	36	B
160	15	Loblolly	21	25	B
160	17	Loblolly	21	72	B
161	2	Loblolly	31	72	B

# **APPENDIX B**

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## **Biological Evaluation**

**Biological Evaluation  
For  
Thinning Project**

**Compartments South of I-20**

**I. Introduction**

The purpose of this biological evaluation is to document any direct, indirect, or cumulative effects of vegetation manipulation for habitat improvement on any proposed, endangered, threatened, or sensitive (PETS) species or their habitats, and to ensure that land management decisions are made with the benefit of such knowledge.

*Specific objectives of this BE are:*

- to ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species or contribute to trends toward Federal listing of any species,
- to comply with the requirements of the Endangered Species Act that actions of Federal agencies not add to the risk to the continued existence of a listed species or adversely modify critical habitat of federally listed species,
- to provide a standard process to ensure that PETS species receive full consideration in the decision-making process,
- to address the effects of management activities to PETS species habitat and/or potential habitat on the Oconee National Forest PETS list, and
- to incorporate any mitigation measures specifically addressing any potential impacts from management activities related of this project to PETS or their habitat or potential habitat.

**II. Project Area and Description**

The project area is located within a portion of the Oconee National Forest, west the Ocmulgee River and south of I-20 within Jasper, Jones, and Putnam Counties. This project focuses on 9,000 acres of loblolly pine and pine-hardwood that are within approximately 65,000 acres. Compartments 102-112; 115, 116, 120, 123, 125, 127, 128, 130, 131, 133, 134, 136, 137, 139, 140, 142-147, 150-157, 159, 160, and 161 are located within the tentative Sub-HMA (Habitat Management Area) and the Habitat Management area (HMA) and are subject to the interim guidelines set by the Red-cockaded Woodpecker Final Environmental Impact Statement (RCW FEIS), which has been added as an amendment to the Chattahoochee-Oconee National Forest Plan. The majority of the area is allocated in Management Area 8.D and 8.D.1, which is managed habitat for the RCW (See pages 3-138-144). This project area was designated for RCW management due to the proximity of existing RCW cluster sites to the Piedmont National Wildlife Refuge (PNWR). The Forest Service and PNWR work jointly in the management of the RCW as a Recovery Population. Project maps are available within project file.

### **III. Proposed Action**

The Oconee National Forest is proposing vegetation control by commercially thinning 9,000 acres of very dense young pine stands within compartments (see list above) which are south of Interstate 20. This proposed action would be in compliance with the Endangered Species Act (ESA) for the management of the RCW to improve future foraging and nesting habitat by reducing number of pine stems, which is required by the RCW EIS. See the EA for detailed descriptions of these actions. To be in compliance with the Endangered Species Act (ESA and the Southern Pine Beetle FEIS), it is necessary to also implement prevention of SPB infestation within the tentative Sub-HMA (Habitat Management Area) by maintaining a lower density of vegetation within the pine stands (See pages 188-190 of the RCW EIS). This treatment area will include any active and inactive RCW areas, future recruitment areas, and surrounding foraging and nesting habitat. This action will help improve habitat for future foraging and nesting habitat for the RCW.

Other connected activities will include the following activities (See the preferred alternative):

- Prescribed burning of all compartments will occur but will be analyzed under a separate environmental document
- Recruitment Stands set up in all compartments (Areas will be determined after pine stems have been reduced; Consultation with USFWS will occur to identify the proper areas adjacent to PNWR active cluster sites. Some of the stands are not mature for inserts but some boundaries can be determined for future nest sites)
- Trees will be identified for artificial cavities and can be installed in local area if we have the option to use stewardship dollars)
- Road maintenance

### **IV. Purpose and Need**

The Oconee RCW population is currently listed as a secondary core population by recovery unit (Recovery Plan, 2003) with a goal of 250 or more breeding groups. The definition of recovery roles and units are described in detail within the Recovery Plan; Section xii. The Oconee National Forest currently has 26 cluster sites. The FY 2004 Breeding season results showed that 14 of these sites were active. Within the 26 cluster sites, we have 14 active nests reported for FY 2004. Recruitment stands within Compartments 113, 114, 117, 118, and 119 have been identified and maintained by prescribed fire (3-5 year rotations). RCW cluster sites have suffered attacks by Southern Pine Beetle due to the dense vegetation that is currently above the 40-60 basal area requirements of the RCW Recovery Plan 2003 recommendations for optimal RCW habitat (RCW EIS, pp 188-190).

Compartments south of I-20 need immediate treatment to avoid jeopardizing nesting and foraging habitat. These compartments have several stands listed with 100+ basal areas. Several of the stands have not been thinned in the past and have heavy midstory of pines and hardwoods that are greater than seven feet in height. The proposed action will provide the proper treatment that will eliminate the loss of future foraging and nesting trees. The proposed treatment areas

will be thinned and prescribed burned to meet the desired future condition for RCW management following the direction provided in the RCW EIS.

Consultation with the USFWS was initiated on July 9, 2003 by letter, requesting recommendations for thinning treatments within the tentative Sub-HMA and HMA treatment areas. Recommendations were to make arrangements for treatment (See project file).

On April 28, 2003 an open house and consultation with cooperative agencies and partners occurred (See project file for details). The project file holds information on correspondence for improvements for habitat by prescribe burning, insect, vegetation control, and improvements for soil and water. All of these will contribute to a healthy watershed and provide habitat for the RCW, Bachman sparrow and other wildlife species. On July 9, 2004 another open house discussing the project area for 9,000 acres of thinning was conducted. Jimmy Rickard, USFWS consultant, was notified but was unable to attend the meeting. He concurred with the project proposal and a draft biological evaluation (Letter within project file). Jimmy and I looked at several of the thinning areas while out in field on July 19, 2004. He was going to be out of office for two weeks and sent in the concurrence letter prior to the finished biological evaluation July 22, 2004 that agrees the proposed project is not likely to adversely affect the RCW or any other TES species.

On July 29, 2004, Cindy Wentworth, Forest Botanist evaluated the stand information and surveyed several stands to concur that no further surveys were needed and evaluated the Georgia Natural Heritage Identification maps for presence of TES species on the Oconee National Forest. No TES plants have been identified within the project areas.

## **V. Species Evaluated**

There are 116 species (26 Federally listed and 90 Sensitive) on the Chattahoochee-Oconee National Forest PETS list. List was updated for TES species from USFWS and a new Sensitive Species list was reviewed by Regional Forester on August 7, 2001. From this list, potentially affected species were identified by (1) reviewing their general habitat preferences, (2) consulting records of known locations of PETS species prepared by the Georgia Natural Heritage Program (GNHP) historical records, and (3) consultations with other agencies and universities as well as reviewing data from Neotropical Migratory Bird (NTMB) Point Samples, Department of Natural Resources Bald Eagle Flights, Breeding Bird Census Routes, PETS Risk Assessment for the Oconee National Forest, and general observations. **The following 17 species are within the range of the Oconee NF based on a review of the above sources.**

**PETS SPECIES LIST – OCONEE NATIONAL FOREST  
THREATENED AND ENDANGERED SPECIES (FY2001)**

Species	Common Name	Federal Status
<b>Plants:</b>		
<i>Trillium reliquum</i>	Relict trillium	Endangered
<b>Vertebrates:</b>		
<i>Haliaeetus leucocephalus</i>	Bald eagle (nests)	Threatened
<i>Mycteria americana</i>	Woodstork (foraging habitat)	Endangered
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered

**REGIONAL FORESTER’S SENSITIVE SPECIES (2001REVISION)**

Common Name	Scientific Name
<b>MAMMALS</b>	
Rafinesque Big-eared Bat	<i>Corynorhinus rafinesquii</i>
<b>BIRDS</b>	
BACHMAN'S SPARROW	<i>Aimophila aestivalis</i>
MIGRANT LOGGERHEAD SHRIKE	<i>Lanius ludovicianus migrans</i>
<b>INSECTS</b>	
MARGARITA RIVER SKIMMER	<i>Macromia margarita</i>
APPALACHIAN SNAKETAIL	<i>Ophiogomphus incurvatus</i>
<b>MUSSELS</b>	
INFLATED FLOATER	<i>Pyganodon gibbosa</i>
<b>FISH</b>	
OCMULGEE SHINER	<i>Cyprinella callisema</i>
BLUESTRIPE SHINER	<i>Cyprinella callitaenia</i>
ALTAMAHA SHINER	<i>Cyprinella xaenura</i>
ROBUST REDHORSE	<i>Moxostoma robustum</i>
<b>PLANTS (Vascular)</b>	
SCHWERIN’S FALSE INDIGO	<i>Amorpha schwerinii</i>
OGLETHORPE OAK	<i>Quercus oglethorpensis</i>
BAY STARVINE	<i>Schisandra glabra</i>

Of these, all but 5 were dropped from further consideration because their range does not extend into the project area or their specific habitat requirements are not found in the areas of proposed

activities. (Also, See Appendix A). The following presents the rationale for eliminating these species from further consideration for this proposed action.

### Plants:

No locations of PETS plant species were identified in the GNHP database for the project area. In addition, contractor John Paul Schmidt conducted a 1998 plant survey on the Oconee National Forest. There were no PETS plant species found within the project areas of pine and pine-hardwood habitat, except for the Oglethorpe oak in Compartment 109. The extent of the area occupied by Oglethorpe oak is known and documented. The 1998 Plant Survey covered a majority of the area within Jasper County. Of the 9000 acres to be thinned approximately 1,165 acres were surveyed by contractors between 1992 and 2004. None of the PETS plant species were identified. Since we will not be cutting within hardwood areas, further inventories of this area would not provide information that is more definitive. These surveys were conducted in the late spring and summer of 1992-2004. Additional surveys done in 1997 in nearby similar habitats also did not show occurrence of PETS plant species. A plant survey conducted in the spring (2004) by Lisa Kruse (Botanist contractor), provides information on the project areas and confirms there is unlikely any PETS plant species that would be adversely affected by the proposed project. Surveys done by Jeff McDonald and myself were done week of July 19, 2004 through July 29, 2004. 4,000 acres were evaluated and surveyed within Putnam and Jasper County. The total amount evaluated and surveyed is 5,385 acres, which is 59% of the total proposed acres to be thinned. The acres surveyed were pine plantations the general observations consist of plant species, which are consistent with all pine stands. TES species listed for the Oconee National Forest would not likely be within these pine stands because of the soils, associated plant communities, and location. After checking the Georgia Heritage Maps, which have locations of TES, species the maps did not identify any of the areas with TES plants listed. The nearest location of relict trillium is approximately 3 miles away from the project area located on private land. Therefore, the proposed activity should not have any direct, indirect, or cumulative impacts to any TES plant species.

Oglethorpe oak, because of its confirmed presence near the project area within Iredell soils, was evaluated by referring to soil maps and plant survey information. Some Oglethorpe oaks have been found in pine stands that had Iredell soils within Compartment 109. The proposed project areas did not have Iredell soils present. Therefore, no additional surveys were needed. This evaluation supports that the proposed activity should not have any direct, indirect, or cumulative effects on the Oglethorpe oak.

### Aquatics

The CATT (Center for Aquatic Technology Transfer) in 2002 and DNR Stream Team in 1998 surveyed several streams for fish throughout the project area. The emphasis of the CATT surveys was to discern the presence or absence of the Altamaha and Ocmulgee shiners, both listed as Forest Service sensitive species.

In addition, in 1995, surveys were conducted in a number of the compartments proposed for thinning. These compartments include: 107, 125, 137, 141 and 145. Streams sampled include:

Murder Creek, tributary to Murder Creek, Rock Creek, Glady Creek, tributary of Cedar Creek and North Creek (tributary to Little River).

These are all warm water streams with fish communities in small headwaters consisting of banded sculpins, creek chubs, bluehead chubs, yellowfin shiners, blackbanded darters, Christmas darters and rosyface chubs. Surveys in lower stream sections were dominated by largemouth bass, redeye bass and redbreast sunfish. In addition, Glady Creek had the following mussels: *Villosa delumbis* and *Elliptio lugubris* (identification by Eugene Keferl, June 1996). Neither of these mussels is listed federally or by the state as a species of concern.

John Alderman conducted surveys within the Ocmulgee and Oconee watersheds on or near the National Forest boundaries in 2002. These tributaries included Gladys Creek, Little Gladys Creek, Murder Creek, Big Indian Creek, Cedar Creek and Big Cedar Creek (Jones County), Cedar Creek (Jasper County), Shoal Creek, Town Creek, Fishing Creek, Greenbriar Creek, Falling Creek, Beaverdam Creek, Rock Creek, Wise Creek, Little River and the main stems of the Oconee and Ocmulgee rivers. Seven species of native freshwater mussels were found in the above streams. Of these seven species, the Georgia elephant-ear (*Elliptio dariensis*) and the Altamaha pocketbook (*Lampsilis dolabraeformis*) are considered locally rare (G3) and are on the 2004 Chattahoochee-Oconee National Forest Locally Rare list. Both of these mussels were found approximately 10 miles downstream (south) of the proposed project area. The inflated floater (*Pyganodon gibbosa*), a mollusk on the Forest Service Sensitive List, was not found during these surveys. More intensive surveys of all of the available microhabitats should be sampled in the future to completely understand the mollusk community.

The inflated floater lives in soft mud and in sand bars generally found in slow moving water in large rivers. This species is known to occur within the Altamaha River Drainage. The project areas to be thinned are not immediately adjacent to any large river section, the type of habitat required by the inflated floater (per conversation with Mitzi Cole, Fisheries Biologist, 2004). The Ocmulgee shiner, Altamaha shiner, robust redhorse and inflated floater are listed as being present in the larger tributaries and creeks within the project analysis area within Jasper and Putnam Counties (See Georgia Rare Species information for Jasper and Putnam County within project file). These species will be further evaluated further in the document.

### Terrestrial Animals

Bald eagles occur along the seacoast and shores of large rivers and lakes. Nests are almost always located either along a shoreline or within two miles of the nearest large body of water in a live tree. Bald eagles use Lake Oconee, Lake Sinclair, and Oconee River for foraging. Some reports of eagles using the Ocmulgee River have been reported. Current observations this past March have identified a nest on the Oconee National Forest. Proper mitigations have been made to protect the site. This site is approximately 25 miles north of the project area. Georgia DNR and USFWS have been notified. No nests have been found south of I-20 on national forest. The eagle appears to be a transient resident on the Ocmulgee River and Lake Oconee, using these as areas for roosting and feeding on fish. There are nesting eagles below Wallace Dam on Lake Sinclair. Rum Creek Management Area, located west of the project area, have eagle nests on Lake Juliette located approximately 15 miles from the project area. Lake Jackson is north of

the project area and is a large body of water that also hosts a nesting pair of bald eagles. Based on existing information and knowledge of habitat suitability, I conclude that suitable habitat for this species does not occur within the affected area of this project. Therefore, existing information is adequate to conclude the project would have no effect, and no further inventories were conducted to support his analysis. The project proposal should have no direct, indirect, or cumulative impacts to the species.

Wood storks inhabit wet meadows, swamps, marshes, ponds, and coastal shallows. They have been observed foraging on the Oconee National Forest at Dyar Pasture. The nests of wood storks are usually found in large colonies, in trees within the swamps and marshes. They are not known to use pine trees or upland forested habitat. No wood stork nest or rookeries have been observed within the area affected by this project, and none are found within the project area. Based on existing inventories, I conclude that this species is not likely to occur in areas affected by this project. Therefore, no further inventories for this species have been done in support of this project. The project proposal should have no direct, indirect, or cumulative impacts to the species.

The loggerhead shrike is not a Neotropical migrant. There are two Georgia Populations, a year round breeding population (relatively small) and a winter population that includes the year round birds along with the birds from the north. Both are high conservation priorities (per conversation Nathan Klaus, June 2003). Point surveys have identified the species within the Jasper County area. Point count information did not reveal the presence of the species near the project area. It is likely the species could occur near the project area due to the habitat requirements. Loggerhead shrikes can be expected near agricultural landscapes where there is enough open country in the surrounding landscape to support a population. There are several acres of pasture and open country used for agriculture in the surrounding area that would support a population such as pastures and agricultural fields. The removal or cutting trees, live or dead, would not propose a threat or have a negative effect on the Loggerhead Shrike. Treatments of thinning and prescribed burning would benefit the species. Therefore, the proposed action should not impact the habitat for the species. The project proposal should have no direct, indirect, or cumulative impacts to the species.

Rafinesque's Big-eared bats are not listed on the GNHP database for the Putnam County area. This species likes caves, abandoned sheds, and snags. This species of bat has not been identified on this forest. Currently, there are no known caves, cliffs, or abandoned sheds within the area. Snags are however throughout the forest but no identification of this species has been made. A bat survey conducted by the University of Georgia in the 1980's by Josh Larem did not identify this species. A survey done in 2001 in the Greene County area by Dr. Steven Castleberry and graduate students also did not detect the species. There was limited optimal habitat available. The Lake Sinclair Area is similar to the areas that were surveyed in the Greene County area. A copy of the study and species listing is available at our district office. The sampling was done with Anabat Sensing system. Therefore, the information that is provided shows that the species is not likely to occur within the project area and the proposed project should not impact the species. The project proposal should have no direct, indirect, or cumulative impacts to the species.

The red-cockaded woodpecker and Bachman's sparrow are known to occur, or have suitable habitat, within the area affected by this project. They are analyzed in more detail within this document.

Insects:

Appalachian snaketail: There is much taxonomic uncertainty in this aquatic species complex, with a great deal of intergradations among specimens (Krotzer and Krotzer 1995, Vogt 1995, Tennessen et al. 1996). The Appalachian snaketail occurs in shallow riffles of low gradient streams with a sand/gravel substrate. There are two records from Georgia, both are fairly recent. There is a record from the Alaculsy Valley, Murray County, from 1998. This was on USFS property on the Chattahoochee National Forest. The second record was close to Helen, Georgia and very near USFS property. According to the information obtained on this species, it is unlikely that it would occur within the project area. The project proposal should have no direct, indirect, or cumulative impacts to the species.

Margarita river skimmer: The mountain river cruiser, a Forest Service Sensitive species, inhabits shallow pools between riffles in undercut banks and leaf packs (S. Krotzer, pers. comm. with K. Wooster). It has been reported from North Carolina, South Carolina, Virginia, Georgia (Brick 1983) and Alabama (S. Krotzer, pers. comm. with K. Wooster). The Georgia record is a single 1960 report from White County (Kormandy 1960). According to the information obtained on this species, it is unlikely that it would occur within the project area. The project area is over one hundred miles from the Georgia record siting of the species. The project proposal should have no direct, indirect, or cumulative impacts to the species.

The aquatic insects are known or have potential to occur in the drainages in the higher elevations of Georgia and within the Piedmont streams. However, the only records of these aquatic insects are known from sites over 100 miles away from the project area. To our knowledge and based on information discussed with the University of Georgia, DNR, and Forest Ecologist there could be a subspecies of the Appalachian snaketail or Margarita River skimmer on the Oconee National Forest but no records can document these occurrences. The proposed project will implement mitigations measures that will prevent negative impacts to the Forest Service Sensitive species listed. No new stream crossings will occur. Georgia State Best Management Practices will be implemented and removal of hazard trees will follow Forest Wide Standard and Guidelines to prevent adverse impacts to any aquatic species. Riparian corridor management guidelines will be used when activity takes place near any streams. The project proposal should have no direct, indirect, or cumulative impacts to the species.

## **VI. Status of the Species and Habitat in the Project Area and Evaluation of Effects**

### **Red-cockaded Woodpecker**

This species currently occupies habitat on the south end of the district and the Piedmont National Wildlife Refuge within the project area. It is most abundant on the Hitchiti Experimental Forest (14 active cluster sites) and the Piedmont National Wildlife Refuge (39 cluster sites). One active

and one inactive cluster are located in Compartment 114. The areas that have had RCW use, or contain recruitment stands are Compartments 107, 113, 115, 117, 118, and 119. These are located along the boundary of the PNWR. This species uses open pinewoods, which can be longleaf, loblolly, shortleaf, or slash. Preferred habitat is generally of mature trees with little or no midstory (resembling a park-like stand). RCW's nest and roost each day in live pine trees. RCW are located in the project area and protection from further SPB infestation is necessary. The direct or immediate effect of reducing the stems within the project area may lose some foraging habitat; however, long-term, this habitat would be lost if no action is taken. SPB infestations have been serious during the past couple of years. Therefore, the removal or cutting of dense trees will result in a cumulative beneficial effect, since it would stop the spread of the SPB infestation and minimize loss of habitat. Based on the information that is within project file, RCW EIS Standards and Guidelines, general observation, and requirements of the Recovery Plan, I conclude that the species would not be adversely affected by the proposed action for thinning the stands to improve future foraging and nesting habitat for the RCW. Intervals of prescribed fire on a 2-5 year basis would promote the optimal habitat requirements needed for the species. Dormant season controlled burns will be implemented when parameters can be met. A no action may result in unfavorable conditions for the RCW, and therefore, the no action may result in a violation of the Endangered Species Act, Section 7, RCW EIS guidelines, Recovery Plan, and our current Forest Plan.

### **Bachman's Sparrow**

This species is found within open southern pine forests subject to frequent fires. The specific habitat this species prefers is large areas of well-developed bunch grass and herb layer with limited shrub and hardwood midstory. This bird has been detected by Point counts done during the nesting season for Neotropical birds. Bird inventories are done on the forest yearly. Reports from the Georgia Department of Natural Resources and the PNWR found several RCW sites in the PNWR with Bachman sparrows present last year. Bachman Sparrows have been identified in Compartment 114. Even though this species has not been reported on the Oconee National Forest in the past, it did occur within some RCW stands last year within the RCW areas. The proposed action might disturb a few individuals, but it is unlikely due to low density. Overall, it should be more beneficial for the Bachman's Sparrow to continue maintaining RCW habitat by doing some vegetation control. Therefore, the proposed activity may directly disturb a few individuals, but the short and long term cumulative effects to the habitat may benefit the species.

### **Robust Redhorse**

According to the Department of Natural Resources the Robust Redhorse does not occur north of Lake Sinclair dam. Areas where the Robust Redhorse have been discovered are located south of Milledgeville, Georgia. Reintroduction of the species into the Ocmulgee River was done in 2002. To our knowledge and based on surveys, these are the only areas where the species has been identified. The project area is south of where the reintroduction occurred. The proposed action of vegetation management would not directly impact the species due to the location of the project area. The nearest proposed project area location is located about 1/4 mile east of the Ocmulgee River. The robust redhorse is a large river fish and all proposed activity is not within areas of large river sections.

Currently a recovery plan is being developed to help make sure the species is not listed as endangered. Robust Redhorse Conservation Committee (RRCC) and Georgia DNR Recovery Team meet annually to discuss the locations and progress of the studies of reintroduction and management objectives. Information based on annual reports and consultation with Jimmy Evans (GADNR) helps support the decision that the proposed action to implement vegetation management by thinning the project areas will not impact the robust redhorse. In addition, the timing of the removal would only be short term and vegetation would be present to reduce sediment loading into the Ocmulgee River according to riparian protection, buffer zones, and following BMP's. The proposed action should not impact the robust redhorse.

### **Altamaha shiner/Ocmulgee shiner**

Altamaha shiners occur in the upper Altamaha River Drainage. Preferred habitat for this species is rocky and sandy pools of creeks and small rivers. The CATT (Center for Aquatic Technology Transfer) in 2002 and DNR Stream Team in 1998 surveyed several streams for fish throughout the project area.

The Altamaha shiner is endemic to the upper Altamaha River drainage in north central Georgia. Altamaha shiners only occur in the Piedmont portions of the Oconee and Ocmulgee rivers and their tributaries. This shiner was collected within the following streams in the 2003 CATT surveys: Murder Creek, Little River and Falling Creek. They have also been collected in the Apalachee River two miles upstream of the Oconee National Forest boundary at U.S. Highway 441. Populations have also been recorded on or near the Oconee National Forest boundaries in the Oconee River basin in Big Creek and Richland Creek (Greene Co.), Little River (Putnam Co.), and Murder Creek (Jasper Co.).

The Ocmulgee shiner occurs in the Altamaha and Ogeechee River drainages in Georgia. Ocmulgee shiners are locally common in the Piedmont and Coastal Plain of the Altamaha drainage but are uncommon in the Ogeechee River system. Ocmulgee shiners are widespread in the upper Oconee and Apalachee rivers north of the Oconee National Forest. This shiner was collected within the following streams in the 2003 CATT surveys: Rose Creek, Apalachee River Murder Creek, Wise Creek, Little River, Big Sandy Creek, Caney Creek and Falling Creek They have also been collected in the Apalachee River two miles upstream of the Oconee National Forest boundary at U.S. Highway 441, Big Creek 0.7 miles from the boundary, and Richland Creek 2 miles from the boundary. Populations have also been recorded on or near Oconee National Forest boundaries in the Oconee River basin in Big Creek and Richland Creek (Greene Co.), Little River (Putnam Co.), Big Cedar Creek (Jones Co.) and Murder Creek (Jasper Co.)

However, all of these findings of the Altamaha and Ocmulgee shiners were in the main stem of these streams. All proposed activity for thinning is within the headwaters, where the stream is too small for the required habitat needs of these shiners.

These existing inventories are adequate to support the conclusion that the Altamaha shiner and Ocmulgee shiner are not likely to be found within the area affected by the project. The proposed areas to be thinned do not have main tributaries where these species were found. The Murder

Creek Area was sampled north of the proposed areas to be thinned (C-143, and 152), there are perennial streams within those areas but the habitat for the Ocmulgee and Altamaha shiner is not present. Mitigations from the Forest Plan protecting riparian areas will have proper buffers and BMP's to be implemented. Therefore, the proposed project will have no direct, indirect, or cumulative effects on the Altamaha shiner, robust redhorse or Ocmulgee shiner.

## **VII. Cumulative Effects**

Implementation of Forest standards and guidelines including maximum opening size, snag/mast requirements, burn parameters, and water quality standard and guidelines all assist in avoiding adverse cumulative effects on PETS and wildlife species. Adherence to these standards and guides assist in maintaining habitat for PETS species on the Forest level. Any future action requires the appropriate analysis including cumulative effects on PETS species and their habitats.

Surveys have been completed on majority of the acres and continue to be conducted in portions of the Forest to determine presence and distribution of various wildlife and plant species (including the PETS listing of species; See Project File). Consultations between the FS Biologist and biologists of the USFWS, GNHP, and GADNR biologist are maintained for occurrence records of PETS species on the Forest, refuge, wildlife management areas, and surrounding private lands. All records and information are shared between the agencies to provide information for all future management activities.

Future management activities and project locations will be analyzed utilizing any new information available on PETS species. For Sensitive species, mitigating measures will be implemented to maintain habitat for these species on the Forest, and to prevent future listing under the Endangered Species Act (ESA). The implementation of these strategies will assist in avoiding cumulative effects on PETS species and their habitats.

Forest specialist will supervise the ground disturbance involving timber removal. All ground disturbing activities will follow Georgia Best Management Practices (BMP's) and will not be allowed when weather conditions are unsuitable. No PETS were identified along these areas during the plant surveys conducted. A plant inventory based on information from the site and with past survey data, was completed by district biologist prior to project implementation. Best Management Practices (BMP's) and Forest-wide water quality standards and guidelines will be implemented to maintain water quality standards and prevent adverse impacts to aquatic species.

## **VIII. Summary Of Determination of Effects**

The proposed action is not likely to adversely affect the RCW. The proposed action would be beneficial for future RCW foraging and nesting habitat. The proposed action will have no impact on the Oglethorpe oak, Altamaha shiner, robust redhorse and Ocmulgee Shiner. The Bachman Sparrow should benefit from protected habitat associated from the proposed vegetation control activities that are proposed.

<b>Plants</b>		
Oglethorpe Oak	<i>Quercus oglethorpensis</i>	no impact
<b>Animals</b>		
Red-Cockaded Woodpecker	<i>Picoides borealis</i>	not likely to adversely affect
Bachman's Sparrow	<i>Aimophila aestivalis</i>	beneficial impact
Robust Redhorse	<i>Moxostoma robustum</i>	no impact
Ocmulgee shiner	<i>Cyprinella callisema</i>	no impact
Altamaha shiner	<i>Cyprinella xaenura</i>	no impact

This Biological Evaluation is based on existing available information which includes species and habitat relationships, species range and distribution, population and species occurrences derived from the past field surveys or observations. The amount, condition and distribution of suitable habitat for listed and sensitive species was also used to make determinations. This document is in compliance with guidance and direction provided in revision of the Chattahoochee-Oconee National Forest Land Management Plan, January 2004.

USFWS written concurrence was asked for the proposed action. The concurrence letter will be added to project file. Jimmy Rickard, USFWS Biologist, gave a verbal concurrence to Forest Service during an open house on July 19, 2004. A copy of the biological evaluation has been mailed to the USFWS office. The written concurrence was received on July 22, 2004.

### **IX. Data Sources**

USFS Plant Inventories  
 GNHP Occurrence Records  
 University of Georgia and DNR Fisheries data  
 USFS/DNR Fisheries Data  
 District Monitoring Data  
 Vegetation and Timber Data  
 Robust Redhorse Conservation Committee

### **X. Consultation With Others**

William Nightingale, District Ranger  
 Elizabeth Caldwell, District Biologist  
 John Moore, Brender (Hitchiti) Forest Project Coordinator  
 Rusty Rhea, Forest Entomologist  
 Jimmy Rickard, USFWS Biologist Athens Office  
 Jimmy Evans, Ga DNR Fisheries Biologist  
 Cindy Wentworth, USFS Forest Botanist  
 Becky Bruce, USFS Archeologist  
 Leigh Ann McDougal, USFS Mussel Specialist

John Petrick, Forest Planner  
Mike Hurst USFS Biologist  
Walter Lane, GADNR Wildlife Biologist  
Tim Walker, Forest Health  
Ray Ellis, USFS Natural Resource Manager  
Tony Wild, USFS Soils Technician  
Tom Patrick, DNR Wildlife Biologist  
Nathan Klaus, Georgia Natural Resource Coordinator, GADNR Biologist  
Malcom Hodges, Nature Conservancy  
Melissa Anderson, Engineering Specialist  
Lee Kennemar, Wildlife Biologist, Department of Natural Resources

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PREPARED BY: /s/Elizabeth D. Caldwell  
Elizabeth D. Caldwell

**Title: Wildlife Biologist**

Date: August 10, 2004

**Biological Evaluation - APPENDIX A**

*The following documents the review of the PETS list for the Chattahoochee-Oconee National Forests used to determine which species would be addressed in this Biological Evaluation.*

*Project Name: Red-Cockaded Woodpecker (**Picoides borealis**) and Bachman Sparrow Habitat (**Aimophila estivalis**) Habitat Improvement Project*

*Compartments 102-112; 115, 116, 120, 123, 125, 127, 128, 130, 131, 133, 134, 136, 137, 139, 140, 142-147, 150-157, 159, 160, and 161*

*Reasons species considered but eliminated from further analysis in Biological Evaluation:*

1. Project area not in range of the species
  2. Species habitat does not occur in the project area
  3. Species not found during inventories
- X = Species evaluated in BE

**THREATENED AND ENDANGERED SPECIES (FY2003)**

Species Reason	Common Name	Federal Status	
<b>Plants:</b>			
<i>Echinacea laevigata</i>	Smooth purple coneflower	Endangered	1
<i>Gymnoderma lineare</i>	Rock gnome lichen	Endangered	1
<i>Helonias bullata</i>	Swamp pink	Endangered	1
<i>Isotria medeoloides</i>	Small whorled pogonia	Threatened	1
<i>Sarracenia oreophila</i>	Green pitcher plant	Endangered	1
<i>Scutellaria montana</i>	Large flowered skullcap	Threatened	1
<i>Trillium persistens</i>	Persistent trillium	Endangered	1
<i>Trillium reliquum</i>	Relict trillium	Endangered	1
<i>Xyris tennesseensis</i>	Tennessee yellow-eyed grass	Endangered	1
<b>Vertebrates:</b>			
<i>Haliaeetus leucocephalus</i>	Bald eagle (nests)	Threatened	X,2
<i>Mycteria americana</i>	Woodstork (foraging habitat)	Endangered	X,2
<i>Myotis grisescens</i>	Gray bat	Endangered	1
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered	X
<i>Cyprinella caerulea</i>	Blue shiner	Threatened	1
<i>Etheostoma etowahae</i>	Etowah darter	Endangered	1
<i>Etheostoma scotti</i>	Cherokee darter	Threatened	1

<i>Percina antesella</i>	Amber darter	Endangered	1
<i>Percina aurolineata</i>	Goldline darter	Threatened	1
<i>Percina jenkinsi</i>	Conasauga logperch	Endangered	1
<b>Molluscs:</b>			
<i>Lampsilis altilis</i>	Fine-lined pocketbook	Threatened	1
<i>Medionidus acutissimus</i>	Alabama moccasinshell	Endangered	1
<i>Medionidus parvulus</i>	Coosa moccasinshell	Endangered	1
<i>Pleurobema decisum</i>	Southern clubshell	Endangered	1
<i>Pleurobema georgianum</i>	Southern pigtoe	Endangered	1
<i>Ptychobranthus greeni</i>	Triangular kidneyshell	Endangered	1
<i>Pleurobema perovatum</i>	Ovate Clubshell	Endangered	1

## REGIONAL FORESTER'S SENSITIVE SPECIES (2001REVISION)

Common Name	Scientific Name	Reason
<b>BIRDS</b>		
BACHMAN'S SPARROW	<i>Aimophila aestivalis</i>	X
PEREGRINE FALCON	<i>Falco peregrinus</i>	1
MIGRANT LOGGERHEAD SHRIKE	<i>Lanius ludovicia migrans</i>	X,3
<b>MAMMALS</b>		
RAFINESQUE'S BIG-EARED BAT	<i>Corynorhinus rafinesquii</i>	1
EASTERN SMALL-FOOTED MYOTIS	<i>Myotis leibii</i>	1
SOUTHERN WATER SHREW	<i>Sorex palustris punctulatus</i>	1
<b>INSECTS</b>		
GEORGIA BELONEURIAN STONEFLY 1	<i>Beloneuria georgiana</i>	
DIANA FRITILLARY BUTTERFLY	<i>Speyeria diana</i>	1
CHEROKEE CLUBTAIL DRAGONFLY	<i>Gomphus consanguis</i>	1
MARGARITA RIVER SKIMMER	<i>Macromia margarita</i>	X,3
EDMUND'S SNAKETAIL	<i>Ophiogomphus edmundo</i>	1
APPALACHIAN SNAKETAIL	<i>Ophiogomphus incurvatus</i>	X,3
<b>CRAYFISH</b>		
OCONEE STREAM CRAYFISH	<i>Cambarus chaugaensis</i>	1
A CRAYFISH	<i>Cambarus cymatilis</i>	1
CHICKAMAUGA CRAYFISH	<i>Cambarus extraneus</i>	1
LITTLE TENNESSEE CRAYFISH	<i>Cambarus georgiae</i>	1
HIAWASSEE HEADWATERS CRAYFISH	<i>Cambarus parrishi</i>	1
A CRAYFISH	<i>Cambarus speciosus</i>	1
<b>REPTILES/AMPHIBIANS</b>		
BOG TURTLE	<i>Clemmys muhlenbergii</i>	1
S. APPALACHIAN SALAMANDER 1	<i>Plethodon teyahalee</i> (=oconaluftee)	
<b>MUSSELS</b>		
Common Name	Scientific Name	Reason

GEORGIA PIGTOE	<i>Pleurobema hanleyianum</i>	1
INFLATED FLO	<i>Pyganodon gibbosa</i>	X,3
RIDGED MAPLELEAF	<i>Quadrula rumphiana</i>	1
ALABAMA CREEKMUSSEL	<i>Strophitis connasaugaensis</i>	1
ALABAMA RAINBOW	<i>Villosa nebulosa</i>	1
Tennessee Hillsplitter	<i>Lasmigona holstonia</i>	
<b>FISH</b>		
OCMULGEE SHINER	<i>Cyprinella callisema</i>	X,3
BLUESTRIPE SHINER	<i>Cyprinella callitaenia</i>	1
ALTAMAHA SHINER	<i>Cyprinella xaenura</i>	X,3
HOLIDAY DARTER	<i>Etheostoma brevirostrum</i>	1
COLDWATER DARTER	<i>Etheostoma ditrema</i>	1
TRISPOT DARTER	<i>Etheostoma trisella</i>	1
WOUNDED DARTER	<i>Etheostoma vulneratum</i>	1
LINED CHUB	<i>Hybopsis lineapunctata</i>	1
MOUNTAIN BROOK LAMPREY	<i>Ichthyomyzon greelyi</i>	1
ROBUST REDHORSE X,3	<i>Moxostoma robustum</i>	
POPEYE SHINER	<i>Notropis ariommus</i>	1
HIGHSCALE SHINER	<i>Notropis hypsilepis</i>	1
FRECKLEBELLY MADTOM	<i>Noturus munitus</i>	1
FRECKLED DARTER	<i>Percina lenticula</i>	1
OLIVE DARTER	<i>Percina squamata</i>	1
FATLIPS MINNOW	<i>Phenacobius crassilabrum</i>	1
<b>PLANTS (Vascular)</b>		
SCHERWIN'S FALSE INDIGO 1	<i>Amorpha schwerinii</i>	
GEORGIA ROCKCRESS	<i>Arabis georgiana</i>	1
GEORGIA ASTER	<i>Aster georgianus</i>	1
SPREADING YELLOW FALSE FOXGLOVE 1	<i>Aureolaria patula</i>	
AMERICAN BARBERRY 1	<i>Berberis Canadensis</i>	
MOUNTAIN BITTERCRESS	<i>Cardamine clematitidis</i>	1
BILTMORE SEDGE	<i>Carex biltmoreana</i>	1
FORT MOUNTAIN SEDGE	<i>Carex communis</i> var. <i>amplisquama</i>	1
MISERABLE SEDGE	<i>Carex misera</i>	1
RADFORD'S SEDGE	<i>Carex radfordii</i>	1
ROAN MOUNTAIN SEDGE	<i>Carex roanensis</i>	1
CUTHBERT'S TURTLEHEAD	<i>Chelone cuthbertii</i>	1
SMALL SPREADING POGONIA	<i>Cleistes bifaria</i>	1
WHORLED STONEROOT	<i>Collinsonia verticillata</i>	

1		
BROADLEAF TICKSEED	<i>Coreopsis latifolia</i>	1
MOUNTAIN WITCH ALDER	<i>Fothergilla major</i>	1
SMITH'S SUNFLOWER	<i>Helianthus smit</i>	1
HARPER'S WILD GINGER	<i>Hexastylis shuttleworthii</i> var. <i>harperi</i>	1
<b>Common Name</b>	<b>Scientific Name</b>	<b>Reason</b>
TAYLOR'S FILMY FERN	<i>Hymenophyllum tayloriae</i>	1
BUTTERNUT	<i>Juglans cinerea</i>	1
FRASER LOOSESTRIFE	<i>Lysimachia fraseri</i>	1
SWEET PINESAP	<i>Monotropsis odorata</i>	1
SMALL'S BEARDTONGUE	<i>Penstemon smallii</i>	1
MONKEYFACE ORCHID	<i>Platanthera integrilabia</i>	1
TENNESSEE LEAFCUP	<i>Polymnia laevigata</i>	
1		
<b>OGLETHORPE OAK</b>	<i>Quercus oglethorpensis</i>	<b>X,3</b>
ROSE GENTIAN	<i>Sabatia capitata</i>	1
PIEDMONT RAGWORT	<i>Senecio millifolium</i>	1
BAY STARVINE	<i>Schisandra glabra</i>	1
OCONEE BELLS	<i>Shortia galacifolia</i> var. <i>galacifolia</i>	1
OVATE CATCHFLY	<i>Silene ovata</i>	1
GRANITE DOME GOLDENROD	<i>Solidago simulans</i>	1
ASH-LEAF BUSH PEA	<i>Thermopsis mollis</i> var. <i>fraxinifolia</i>	
1		
LEAST TRILLIUM	<i>Trillium pusillum</i>	1
SOUTHERN NODDING TRILLIUM	<i>Trillium rugellii</i>	1
SWEET WHITE TRILLIUM	<i>Trillium simile</i>	1
CAROLINA HEMLOCK	<i>Tsuga caroliniana</i>	
1		
PIEDMONT STRAWBERRY	<i>Waldsteinia lobata</i>	1
<b>PLANTS (Nonvascular)</b>		
A LIVERWORT	<i>Drepanolejeunea appalachiana</i>	1
A LIVERWORT	<i>Pellia X appalachiana</i>	1
A LIVERWORT	<i>Plagiochila caduciloba</i>	1
A LIVERWORT	<i>Plagiochila echinata</i>	1
SHARP'S LEAFY LIVERWORT	<i>Plagiochila sharpii</i>	1
CAROLINA PLAGIOMNIUM	<i>Plagiomnium carolinianum</i>	1
PRINGLE'S PLATYHYPNIDIUM	<i>Platyhypnidium pringlei</i>	1
A LIVERWORT	<i>Radula sullivanti</i>	1

# **APPENDIX C**

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## **Management Indicator Species**

## **Management Indicator Species**

The Oconee National Forest hosts approximately 350 species of wildlife and fish and 1,500 species of plants. This great number of species makes it difficult to manage for every species on every acre of the Forest. Therefore, the USFS has identified 15 MIS for the Chattahoochee-Oconee National Forests to represent the many different ecological communities and associated successional stages and species within the Forest. The primary objective with every project is to ensure that viability of any species present is not adversely affected. National Forests use MIS as a tool for identifying specialized habitats and creating habitat objectives and standards and guidelines. The idea behind the MIS concept is to identify a few species that are representative of many other species, and to evaluate management direction by the effects of management on MIS habitats. Both population and habitat data are used to monitor MIS on National Forests. Trends in MIS populations are normally assessed relative to trends in their respective habitat.

Of the 15 terrestrial MIS, 4 do not occur on the Oconee National Forest (or, in the case of birds, may occur, but do not breed on the Forest). These MIS include the black bear (*Ursus americanus*), smooth coneflower (*Echinacea laevigata*), chestnut-sided warbler (*Dendroica pensylvanica*), and ovenbird (*Seiurus aurocapillus*), (USFS, 2004).

The following is a description of the 11 terrestrial MIS that do occur on the Oconee National Forest and the condition of their existing habitat. These MIS species are indicative of the major forest types in the project area and respond to changes in community diversity, successional diversity, and plant species diversity.

### Acadian Flycatcher (*Empidonax virescens*)

The habitat for the Acadian flycatcher consists of deciduous forests near streams with a moderate understory. This bird typically constructs its nest in branches directly overhanging streams. It requires a high dense canopy with an open understory (NatureServe Explorer, 2002). Acadian flycatcher habitat is currently fairly good, with riparian areas common across the forest and in generally good condition (USFS, 2003). Population levels have been relatively stable for this species on the Forest, with surveys showing an increasing trend in abundance Statewide during the past 35 years. The quality and integrity of riparian habitat on the Forest is expected to remain constant over time (USFS, 2003).

### Pileated Woodpecker (*Dryocopus pileatus*)

The pileated woodpecker is associated with mature (60+ years) and extensive hardwood and hardwood-pine forest. Deciduous forests are preferred over coniferous forests. The species is found in deep woods, swamps, river bottom forests, and open, upland forest of mixed types. The species bird forages and nests on and in dead trees (snags), with some foraging also occurring on fallen logs and other forest debris (USFS, 2003). It prefers woods with a tall, closed canopy and a high basal area (NatureServe Explorer, 2002).

Bird survey data indicate that pileated woodpecker populations have remained relatively stable both on the Forest and throughout the State over the past 10 years. In addition, habitat for the

species has been relatively stable over the past 15 years, and is expected to remain stable or increase in the future (USFS, 2003).

Hooded Warbler (*Wilsonia citrina*)

Hooded warblers are primarily found in mature (although young forests can also be used), mesic deciduous forests with a dense understory and midstory structure. The species nests in the understory of deciduous forests, especially along streams and ravine edges, as well as thickets in riverine forests. A dense shrub layer and scant ground cover are important to the species (NatureServe Explorer, 2002).

Field Sparrow (*Spizella pusilla*)

The field sparrow prefers old fields, brushy hillsides, overgrown and weedy pastures, thorn scrub, deciduous forest edge, untilled and idle cropland, brushy woodlands, sparse second growth, hedgerows, and fencerows. The species nests on or near ground in weed clumps or grass tufts. Woody vegetation and dense grass appear to be critical components for habitat suitability. Optimal habitat includes dense, moderately tall grass, and low to moderate shrub density (NatureServe Explorer, 2002).

Prairie Warbler (*Dendroica discolor*)

The prairie warbler is an early-successional species that is found in areas with shrubby vegetation, including brushy second growth, dry scrub, low pine-juniper, mangroves, pine barrens, burned-over areas, abandoned fields, powerline corridors, and revegetated strip-mined areas. Breeding habitats for the species are typically suitable beginning about 5 years after burning or clearing, and continuing for about 10 to 20 years. The species typically nests in a shrub, sapling, thicket, or fern clump (NatureServe Explorer, 2002).

Wood Thrush (*Hylocichla mustelina*)

The wood thrush is a forest interior species typically found in mature deciduous or mixed forests with a dense tree canopy and a fairly well-developed deciduous understory. Bottomlands and other rich hardwood forests are optimal habitats. The species is also found in pine forests with a deciduous understory (NatureServe Explorer, 2002).

Scarlet Tanager (*Piranga olivacea*)

The scarlet tanager is an MIS for the upland oak community, and is not very common on the Oconee National Forest (USFS, 2004). The species is found in deciduous forests and mature deciduous woodlands, including deciduous and mixed swamp and floodplain forests and rich moist upland forests, preferring oak trees. The species nests most commonly in areas with a relatively closed canopy, dense understory with a high diversity of shrubs, and scanty ground cover. The species also sometimes nests in wooded parks and orchards (NatureServe Explorer, 2002).

Swainson's Warbler (*Limnothlypis swainsonii*)

Swainson's warbler is found in early-successional riparian habitats in the Piedmont, and is strongly associated with canebrakes, tangles, and thick shrubby understories of open bottomland hardwoods and mixed forests. The species is found in rich, damp, deciduous floodplain and swamp forests, requiring areas with deep shade from both canopy and understory cover. The species nests in understory canes, shrubs, vine tangles, and similar sites, typically within about 200 meters of open water (NatureServe Explorer, 2002).

Pine Warbler (*Dendroica pinus*)

The pine warbler is associated with pine and pine-oak forests, generally occurring only where some pine component is present. The highest numbers of the species occur where pure stands of pine are found; the species is less abundant as the proportion of hardwood tree species increases. Optimal nesting habitat for the species is provided by pure, dense, mature pine stands that lack a tall understory (NatureServe Explorer, 2002).

Red-cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker (RCW), a federally listed endangered species, currently occupies habitat on the south end of the Oconee National Forest and in the Piedmont National Wildlife Refuge, which is just outside of the project area. According to the revised RCW Recovery Plan, the Oconee National Forest and Piedmont National Wildlife Refuge together make up one secondary core recovery population of RCW, referred to as the Piedmont Recovery Unit. The plan defines a secondary core population as "a population identified in recovery criteria that will hold at least 250 potential breeding groups at the time of and after delisting." In 2004, the Piedmont Recovery Unit had 53 breeding pairs—14 on the Oconee National Forest (including the Hitchiti Experimental Forest) and 39 on the Piedmont National Wildlife Refuge.

Under the direction of the RCW Final EIS and ROD and the ESA, the Oconee National Forest must not jeopardize endangered species and must carry out programs for their conservation (16 U.S.C. 1536 (a)). Therefore, the Oconee National Forest must protect all cavity trees, protect foraging and nesting habitat, and provide future foraging and nesting habitat. The recovery objective is to create and protect enough RCW habitat to support a genetically sustainable population of 250 breeding pairs. There are currently seven inactive clusters and several acres of potential recruitment areas for the RCW on the Oconee National Forest.

The RCW uses open pinewoods, which can be longleaf (*Pinus palustris*), loblolly (*P. taeda*), shortleaf (*P. echinata*), or slash (*P. elliotti*). Habitat is generally of mature trees (80+ years) with little or no midstory (resembling a park-like conditions). RCWs nest and roost each day in cavities they excavate in live pine trees (USFS, 2001; USFWS, 2002).

Currently, potential foraging habitats within the project area have thick basal areas of pine trees, which hinders RCW foraging and increases competition from other vertebrates. There is an

abundance of overstocked stands of mid-successional aged pine trees (future foraging and nesting habitat) that need treatment.

### White-tailed Deer (*Odocoileus virginianus*)

White-tailed deer are very adaptable and use a variety of habitat types and successional stages to meet their year-round needs. Grassed openings and closed temporary roads, along with regeneration areas, supply the early successional habitats preferred by the species. Foraging habitat is represented in all forest age classes up to 80 years. Availability of browse and escape cover year-round and hard mast during the fall and early winter are key factors for white-tailed deer success. Riparian habitats supply much of the hard and soft mast (USFS, 2001).

While there has been a slight decrease in the availability of deer browse on the Forest over the past 10 years due to a decline in early successional habitat, the white-tailed deer is very adaptable. Deer populations are higher on the Oconee (Piedmont) than in the Georgia mountains, with both populations stable to increasing. Since the deer population has been at or above carrying capacity in the Piedmont, State regulations have been liberalized to help reduce population densities to within habitat capability levels (USFS, 2003).

## ***Environmental Consequences***

Habitat alteration changes the diversity and abundance of wildlife species in a given area. Vegetation management can affect each species' habitat in a different way, benefiting some species, while harming others. Planning regulations define diversity as "the distribution and abundance of different plant and animal communities and species within [an] area..." (36 CFR 219.3(g)).

In general, forested areas that are in various stages of development and include periodic openings support a wide diversity of species and habitats. The maintenance of forest habitat diversity tends to increase wildlife populations and land values, since the majority of animals do not utilize a single stand or single forest type throughout their lives. Management activities that encourage layering of different types of vegetation, including thinning, increase wildlife diversity. Impacts beneficial to wildlife are typically greater with a combination of management activities versus any of the treatments separately.

### **Alternative A (No Action: Current Management)**

#### Vegetation

Under Alternative A, no thinning activities would occur.

In the absence of thinning, the general health of forest stands in the project area would likely decline. The incidence of SPB attacks, which are significantly decreased by reducing stand density and removing infected trees from a given stand, would increase, as infected trees spread

the beetle to those trees nearby. Forest stands in the project area would continue to develop overcrowded conditions, resulting in greater competition for nutrients, decreased growth, and increased potential for infection and insect attack, as well as increased natural mortality rates. Given the real possibility of SPB attacks under these conditions, an increase in salvage logging operations may become necessary. RCW habitat within these stands would also remain very poor, both currently and in the future.

### **Management Indicator Species**

#### *Acadian Flycatcher*

Implementation of Alternative A would have no direct or indirect effect on riparian deciduous forested habitat for the Acadian flycatcher. Habitat trends and patterns for this species in the area would continue.

Cumulatively, no additional activities are planned in the project area. Therefore, no cumulative effects to this species is expected.

#### *Pileated Woodpecker*

Implementation of Alternative A would have no direct or indirect effect on habitat for the pileated woodpecker. The forest within the project area would continue to be dense, and basal areas would remain high, under this alternative. Pileated woodpeckers would not be attracted to the area.

Cumulatively, this no action alternative would result in no effects to this woodpecker.

#### *Hooded Warbler*

Implementation of Alternative A would not directly or indirectly affect the availability or structure of mature, mesic deciduous forested habitat for the hooded warbler in the vicinity. Habitat trends and patterns for this species in the general area would continue. Cumulatively, no further effects are expected.

#### *Field Sparrow*

Implementation of Alternative A would have no direct or indirect effect on the field sparrow, since no old fields, woodlands, or other preferred habitat of the species would be affected. Habitat trends and patterns for this species in the area would continue.

Cumulatively, this no action alternative would have no further effect on the field sparrow.

*Prairie Warbler*

Implementation of Alternative A would not directly or indirectly effect habitat for the prairie warbler. While stands within the project area would continue to become more crowded under this alternative, increasing the potential for pine mortality and SPB infestations and associated salvage cuts, any resultant early successional habitat created by pine mortality would provide only a small amount of short-term marginal habitat for the species.

Cumulatively, this alternative would have no effect on this species.

*Wood Thrush*

The project area does not directly provide habitat for the wood thrush under Alternative A. Over time, populations of the species in or near the project area would likely remain the same. Therefore, indirect and direct effects on the wood thrush are not expected.

Cumulatively, no additional activities would be expected to affect this MIS.

*Scarlet Tanager*

Implementation of Alternative A would have no direct or indirect effect on upland oak or other deciduous forested habitat preferred by the scarlet tanager. Habitat trends and patterns for this species in the area would continue.

No cumulative effects to this bird are expected under the no action alternative.

*Swainson's Warbler*

Implementation of Alternative A would have no direct or indirect effect on early-successional riparian or deciduous floodplain/swamp forested habitat for the Swainson's warbler. Habitat trends and patterns for this species in the area would continue.

There are no cumulative effects to this bird or its habitat expected.

*Pine Warbler*

Implementation of Alternative A would have little direct or indirect effect on the availability of pine warbler habitat in the project area, although currently, some of the dense stands may be suitable for this pine preferring species, whether treated or not.

No cumulative effects to the pine warbler are expected under the no action alternative.

*Red-cockaded Woodpecker*

Direct effects to the RCW would not occur. However, indirect effects to habitat for the RCW would occur. No action would not provide or create suitable RCW habitat under Alternative A. Although the pine stands within the project area would become more mature with time under this alternative, they would continue to be overstocked and would become more crowded. Over time, potential RCW foraging and nesting habitat within the project area would become less suitable as future habitat for the species. Although Alternative A would not directly affect the RCW, indirect effects on potential habitat for the species would be adverse.

Currently, much of the potential RCW foraging habitat within the RCW HMA is fragmented and has thick midstory vegetation, which hinders RCW foraging and increases competition from other vertebrates. Under Alternative A, the abundance of overstocked stands of early- to mid-successional pine trees (potential RCW foraging and nesting habitat) would continue. Alternative A would neither be protecting existing habitat nor providing future foraging and nesting habitat for the RCW in the project area. RCW would not be able to be recruited to the project area in the future if no vegetation management activities are conducted.

Cumulatively, other treatments would not occur in the project area since habitat would not be treated or altered. Therefore, cumulative effects from continued no action would be expected to decrease habitat capability for the RCW.

*White-tailed Deer*

Implementation of Alternative A would not directly or indirectly affect the white-tailed deer or its habitat on the forest, since this species utilizes so many different habitat types and is extremely adaptable. The project area would continue to provide some cover habitat for the species over the long-term, and populations would be expected to continue under current trends and patterns.

Cumulatively, no additional activities would affect the deer.

**Alternative B (Proposed Action: Pine Thinnings for Forest Health and RCW Habitat Restoration)**

*Management Indicator Species*

Direct and Indirect Effects

Noise during thinning operations may temporarily displace some MIS and other wildlife species in or near the project area. However, these effects would be minor and short-term. There would be plenty of undisturbed stands in the surrounding area for displaced species to travel to in the short-term. Species such as the RCW, pine warbler, white-tailed deer and prairie warbler

would receive long-term benefits from the proposed action in just a short time after implementation.

#### *Acadian Flycatcher*

Implementation of Alternative B would not directly or indirectly affect riparian, deciduous forested habitat for the Acadian flycatcher.

Since habitat for this species is not affected, no cumulative effects would influence this bird species.

#### *Pileated Woodpecker*

No direct effects to this woodpecker are expected. Indirectly, Alternative B would not have a measurable effect on pileated woodpecker habitat within the project area. The project area is primarily dense, young loblolly pine habitat, which is not preferred habitat for the pileated woodpecker. There would continue to be many acres of suitable habitat for the pileated woodpecker on surrounding public and private lands that would remain unaffected by Alternative B, including preferred pileated woodpecker habitat.

Cumulatively, the thinnings would not affect this species since it would not be expected to occur in the treatment area.

#### *Hooded Warbler*

Implementation of Alternative B is not anticipated to have any direct affect on hooded warblers. The treatment area does not contain preferred habitat for this warbler. The proposed activities are targeting loblolly pine and mixed pine stands within the project area; mesic deciduous forest habitat preferred by this MIS would remain largely undisturbed by the project.

Cumulatively, the thinnings would not occur where these birds occur.

#### *Field Sparrow*

Neither the field sparrow (direct effect) nor its habitat (indirect effect) would be affected by implementation of Alternative B. None of the proposed activities would occur in habitats used by the species. Therefore, no cumulative effects are expected. The amount and availability of habitat for this species on the Forest would remain unchanged under this alternative.

#### *Prairie Warbler*

Implementation of Alternative B may increase habitat capability for the prairie warbler. Alternative B would create habitat for the prairie warbler because they prefer more open stands in general. If they are in the vicinity of the proposed project area, we could expect the thinned

stands to be more utilized by this warbler than the thick stands that would remain as a result of the no action.

Cumulatively, the thinnings would improve potential habitat for the prairie warbler within the project area.

#### *Wood Thrush*

The proposed project area is not expected to contain suitable habitat for the wood thrush. Preferred mature, deciduous forested habitat would remain largely unaffected by project implementation. Alternative B would not affect the wood thrush either directly or indirectly.

No cumulative effects are expected since the thinnings would occur outside favorable habitat for this bird species.

#### *Scarlet Tanager*

Implementation of Alternative B is not anticipated to affect scarlet tanager (directly) or its habitat (indirectly) within the project area. The proposed activity is targeting dense loblolly pine and mixed pine stands within the project area; upland oak and deciduous woodland/forest habitat would remain largely undisturbed by the project.

Cumulatively, no effect is expected since thinnings will not occur in habitats where these birds are expected to be found.

#### *Swainson's Warbler*

Alternative B is not anticipated to adversely affect the species directly or its overall habitat (indirectly) availability on the Forest. Preferred and suitable habitat for this species is not targeted for thinning.

No cumulative effects are expected since the thinnings are not going to take place within this warbler's habitat.

#### *Pine Warbler*

The pine warbler would be slightly beneficially affected by implementation of Alternative B. Under this alternative, thinning the dense pines will allow more healthy pine stands that can become more suitable for nesting sites for the pine warbler in the future.

Cumulatively, no other actions would be expected to affect this bird species.

*Red-cockaded Woodpecker*

Activities proposed under Alternative B would enhance the quality of RCW habitat on the forest. Opening up the young / middle-aged pine stands through the proposed thinning would not only improve forest health and reduce threats on RCW clusters from SPB infestations, but would also make the project area more suitable for the RCW nesting and foraging in the future. Vegetation management in immature pine stands would enhance potential future habitat for the species within the project area, once the stands have matured.

Alternative B would be working toward the recovery objective for the RCW on the Oconee National Forest. In addition, this alternative would be keeping with the direction of the RCW Final EIS and ROD, Recovery Plan, and the ESA.

Cumulatively, other related activities that are geared towards improving RCW habitat (prescribed burns from the past and future and other RCW cavity enhancement work) would continue to benefit the RCW and associated species.

*White-tailed Deer*

Thinning would benefit the white-tailed deer by encouraging shrubby and grassy understory areas by opening up the forest canopy. Alternative B would create habitat for the white-tailed deer within the project area, and the species would likely be more attracted to the area, because improved forage substrate at the ground level would likely be developed after the thinnings.

Cumulatively, we could expect benefits to the deer habitat from the proposed action alternative.

**Summary of Effects of Alternatives on the MIS**

	ALT. A	ALT.B
Acadian flycatcher	M	M
Pileated woodpecker	M	M
Hooded warbler	M	M
Field sparrow	M	M
Prairie warbler	M	I
Wood thrush	M	M
Scarlet tanager	M	M
Swainson's warbler	M	M
Pine warbler	M	I
Red-cocked woodpecker	D	I
White-tailed deer	M	I

M = maintain habitat capability (no change expected)

I = increase in expected habitat capability

D = decrease in expected habitat capability

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# **APPENDIX D**

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## **Financial Analysis**

## Appendix D

### Financial Analysis

The “No Action” alternative was compared to both the “Action” alternative to determine financial efficiency of the proposed timber sale. Dollar amounts of costs and revenues are an estimate based on cost/price information in July 2004. All alternatives include costs for environmental analysis and NEPA documentation. Only the harvest alternative has revenues associated with it. Alternative B has a Benefit/Cost Ratio (B/C) of 1.5 where benefits exceed financial costs. The analysis includes costs and benefits for the timber sale and required reforestation activities only. It does not include non-monetary benefits associated with wildlife habitat or recreation values. The following table summarizes the results:

Table F-1: Summary of Commercial Thinning Project Financial Analysis<sup>1</sup>

Alternative	PV-Costs	PV-Benefits	Present Net Value	Benefit/Cost Ratio
A (No Action)	-136,960	0	-136,960	0
B	1,663,350	2,554,543	891,193	1.5

1: Discount rate = 4.0%

The following tables display economic analysis results for each alternative:

Table F-2: Financial Analysis – Alternative A

Year	Description	Quantity	PNV Cost (\$)	Benefit (\$)
0	Environmental analysis	30 days	7,800	
0	Heritage resource survey (contract)	1247 acres	33,960	
0	Silvicultural Exams	9000 acres	90,000	
0	TES Survey	4000 acres	5200	

Table F-2: Financial Analysis – Alternative B

Year	Description	Quantity	PNV Cost (\$)	Benefit (\$)
0	Environmental analysis	30 days	7,800	
0	Heritage resource survey (contract)	1247 acres	33,960	
0	Silvicultural Exams	9000 acres	90,000	
0	TES Survey	4000 acres	5200	
1-7	Cruise/mark timber sales	8339 acres	250,194	
1-7	Road gravel	105 miles	97,855	
1-7	Road maintenance, level 5	30 miles	9060	
1-7	Sale administration	54,201 CCF	1,169,281	
1-7	Pine Pulpwood	20,847 CCF		107,936
1-7	Pine Sawtimber	33,356 CCF		2,446,607

**Calculations and Assumptions for Financial Analysis (Timber Sale Only):**

- Discount rate = 4%
- Assume implementation will occur over a 7-year time frame
- Assume harvest volume of 4 ccf/acre sawtimber and 2.5 ccf/acre pulpwood
- Assume average sawtimber price of \$85/ccf and average pulpwood price of \$6/ccf

**Costs:**

**Cruise/Mark Timber Sales** (\$35/ac, 1191 acres/year based on average data from MS):

$$\begin{aligned} & \$41,685/(1.04)^1 + \$41,685/(1.04)^2 + \$41,685/(1.04)^3 + \$41,685/(1.04)^4 + \$41,685/(1.04)^5 \\ & + \$41,685/(1.04)^6 + \$41,685/(1.04)^7 = \$250,194 \end{aligned}$$

**Environmental Analysis:** 30 days @ \$260/day = \$7800/(1.04)<sup>0</sup> = \$7800

**Heritage Surveys:** 1247 ac contract \$33,960 = \$33,960/(1.04)<sup>0</sup> = \$33,960

**TES Surveys:** 20 days at \$260/day = \$5200 = \$5200/(1.04)<sup>0</sup> = \$5200

**Silviculture Exams & Prescriptions** = \$10/acre = \$90,000/(1.04)<sup>0</sup> = \$90,000

**Road Maintenance:** 30 miles @\$350/mile (from appraisal guide) = 1500/(1.04)<sup>1</sup> ... + 1500/(1.04)<sup>7</sup> = \$9060

**Road Gravel:** 7560 tons @ \$15/ton = 16,200/(1.04)<sup>1</sup> ... + 16,200/(1.04)<sup>7</sup> = \$97,855

**Sale Administration** = \$25/ccf @ 7743 ccf/year (average TSPIRS cost):

$$\begin{aligned} & \$193,575/(1.04)^1 + \dots + \$193,575/(1.04)^7 = \$1,169,281 \end{aligned}$$

**Revenues:**

Pine Sawtimber (total 33,356 ccf @ 4765 ccf/year):

$$\begin{aligned} & \$405,037/(1.04)^1 + \dots + \$405,037/(1.04)^7 = \$2,446,607 \end{aligned}$$

Pine Pulpwood (total 20,847 ccf @ 2978 ccf/year):

$$\begin{aligned} & \$17,869/(1.04)^1 + \dots + \$17,869/(1.04)^7 = \$107,936 \end{aligned}$$

# **APPENDIX E**

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## **Scenery Management**

Comp	Stand	Acres	GIS Acres	Scenic Integrity Level*
102	1	76	84.11	3
102	6	31	25.64	3
102	14	11	11.54	1
102	26	11	15.68	3
102	27	40	44.14	2
103	11	70	59.95	2
104	1	52	51.11	2
104	9	31	29.11	2
104	22	23	14.76	2
104	24	21	21.39	2
104	41	11	8.48	2
105	4	34	57.72	2
105	11	16	18.31	2
106	1	35	42.96	1
106	2	7	7.08	1
106	4	14	15.24	1
106	5	23	26.12	1
107	7	45	33.86	1
107	10	78	81.66	1
107	13	43	48.41	1
107	15	83	83.57	2
108	2	99	76.13	1
108	3	11	22.52	1
108	5	14	26.64	1
108	8	55	47.55	1
108	12	40	37.73	1
108	17	11	19.10	1
108	19	5	5.61	1
108	25	54	55.28	1
108	27	43	31.50	1
108	40	10	12.27	1
108	43	24	19.50	2
108	44	28	32.15	1
110	36	34	28.76	2
111	5	26	22.41	2
111	6	36	28.59	2
111	7	22	20.41	2
111	18	15	9.95	2
111	33	19	17.34	2
111	34	26	21.57	2
111	39	135	145.89	2
112	6	42	35.03	2
112	8	17	13.11	2
112	11	12	13.47	2
112	13	39	35.57	2
112	27	39	42.33	2
112	29	20	15.95	2
112	31	22	19.33	3
112	59	3	22.63	2
115	5	16	15.77	2
115	8	52	63.12	2

115	14	13	14.51	2
115	16	51	55.76	3
115	18	172	171.45	2
115	20	13	13.59	2
115	20	13	13.26	2
115	23	22	28.56	2
115	26	20	15.24	3
115	27	12	10.27	2
115	29	14	12.47	2
116	15	70	94.48	1
116	16	58	52.78	1
116	19	56	61.22	2
116	24	86	88.15	2
120	2	65	64.18	3
120	8	35	30.06	2
120	11	21	20.45	2
120	13	20	19.66	2
120	15	15	17.73	3
120	16	60	69.37	2
120	33	20	25.30	3
120	34	10	12.05	2
131	2	12	18.76	2
131	4	108	119.16	2
131	13	10	7.40	2
133	15	29	31.41	3
133	16	57	56.55	2
133	20	46	50.88	2
133	38	16	19.89	2
134	7	28	26.15	2
134	9	48	66.20	3
134	10	24	18.27	3
136	1	33	37.40	2
136	4	21	24.35	2
136	10	23	20.72	2
137	1	67	76.06	2
137	12	72	76.73	2
139	6	41	39.91	2
139	9	22	17.01	2
139	18	13	13.26	2
140	18	38	42.47	2
140	24	35	30.53	3
140	29	20	22.29	2
142	1	23	24.72	2
142	7	10	9.29	2
142	13	19	7.06	1
142	23	79	86.60	1
142	43	10	11.24	2
143	3	50	42.79	2
143	17	89	91.75	1
144	3	78	78.02	2
144	7	278	131.11	2
144	7	278	161.15	2
144	8	26	19.52	2
144	11	18	18.41	1

144	14	60	56.49	2
144	23	30	34.53	2
144	24	29	31.88	2
144	26	14	13.73	2
144	30	25	24.29	2
144	35	67	56.57	2
144	36	40	43.99	3
145	31	24	19.84	2
146	1	80	88.52	3
146	2	70	68.16	2
146	4	21	29.44	3
146	10	58	49.84	2
146	11	8	6.82	2
146	14	15	27.10	2
146	28	7	4.63	2
146	31	10	10.30	2
146	32	15	29.09	2
146	33	10	10.35	2
146	39	9	8.93	3
147	7	37	42.01	2
147	10	8	4.93	2
147	15	16	19.90	1
147	18	41	44.10	2
147	21	21	18.96	2
147	22	14	11.33	2
147	28	34	33.39	3
150	1	151	130.14	2
150	2	50	43.95	1
150	6	19	17.39	1
151	11	98	97.58	2
151	12	80	63.68	2
152	3	54	56.31	2
152	10	86	76.88	1
152	17	14	17.52	2
152	37	8	6.62	1
153	10	10	9.75	2
153	19	30	32.67	2
153	20	22	17.63	2
154	1	78	72.01	2
154	3	16	22.55	2
154	5	13	8.23	2
154	7	27	30.11	2
154	8	26	31.02	2
154	12	46	50.55	2
154	13	33	35.41	2
154	15	54	65.50	3
154	20	33	23.64	2
154	36	19	17.08	2
155	1	56	58.55	2
155	2	59	58.31	2
155	3	68	63.74	2
155	4	80	82.46	1
155	6	22	23.93	2
155	7	48	43.30	2

156	2	44	39.94	1
156	4	81	89.80	2
156	7	40	35.02	2
156	19	12	11.65	1
156	29	147	137.53	1
157	10	76	68.34	2
157	12	57	40.07	2
157	13	20	27.13	1
157	15	25	25.39	2
157	16	10	13.38	2
157	18	36	33.18	1
159	4	54	57.75	2
159	9	105	65.75	2
159	16	10	11.29	2
159	26	530	36.18	2
160	15	39	25.38	2
160	17	60	72.29	1
161	2	80	72.17	2

**\*SMS Viewer Concern Levels:**

- 1 High**
- 2 Moderate**
- 3 Low**

LETTERS MODIFIED ABOVE, BUT NOT BELOW NJR 1/9/02 MODIFIED BELOW  
DCW 2/18/02

Topic or Management Activity	Applicable Physiographic Section	Applicable Landscape Character Theme*	Landscape Enhancement and Contrast Reducing Standards by Scenic Integrity Objective (SIO)**			Applicable Prescription Area
Vegetation and Other Management Activities			High	Moderate	Low	Applicable Prescription Area
<b>Commercial/Non-Commercial thinning</b>	<b>All</b>	<b>NA, H</b>	<b>A, B, C, D, E, G, H, I,</b>	<b>A,B, C,D, E,G, H,I,</b>	<b>A,B,</b>	<b>2A2,2A3,2B2,2B3b, 3A,3B,3C,3D ?4C2, 4D?4E1,4E2, 4F,4G, 4H,4J,4K?,4 K1,5A, 5B,5C 5D,6B,6C,6D ,6E,7A 7B,7C,7D,7E ,8A1, 8A2,8A2a,8B ,8C,8D1?8E1 8E2?8E5,9A 1,9A3, 9B1,9B3,9C1 ,9C2, 9D,9E,9G,9 H,10A, 10B,10E, 11 12A</b>
<b>Roadside Maintenance</b>	<b>All</b>	<b>NA, PA, H, U</b>	<b>A, B, F, H, V, W, Y, Z</b>	<b>A,B, F,V, W, Y,</b>	<b>A,F, V,W ,Y,</b>	<b>2A2,2A3,2B2 ,2B3a,2B3b, 3A,3B,3C,3D ?4C1, 4C2, 4D,4E1,4E2, 4F,4G, 4H,4J,4K,4K 1,5A,5B,5C? 5D,6B,6C?6 D,6E,7A 7B,7C,7D,7E ,8A1, 8A2,8B,8C,8 D,8E1, 8E2,8E3,9A1 ,9A3, 9B1,9B2,9B3 ,9C1,</b>

Topic or Management Activity	Applicable Physiographic Section	Applicable Landscape Character Theme*	Landscape Enhancement and Contrast Reducing Standards by Scenic Integrity Objective (SIO)**			Applicable Prescription Area
Vegetation and Other Management Activities			High	Moderate	Low	Applicable Prescription Area
						<b>9C2,9D,9E,9F,9G,9H,10A,10B,10C,10D,10E,1112A</b>

## ***Ecological Treatment Standards: List of Treatments***

- A. *(a) Trees are selectively removed to improve amenities within high use areas, vista points, and along interpretive trails.*
- B. *(b) Flowering and other visually attractive trees and understory shrubs are favored when leaving vegetation.*
- C. *(c) During temporary or permanent road construction, slash and root wads are eliminated or removed from view in the immediate foreground retention and partial retention zones to the extent possible. Slash may be aligned parallel to roads at the base of fill slopes to collect silt, but only to the extent it provides this function.*
- D. *(d and z) Slash is removed, burned, chipped or lopped to within an average of 2 feet of ground, when visible within 100-foot zone beyond travel routes.*
- E. *(aa) Root wads and other unnecessary debris are removed or placed out of sight within 150 feet of key viewing points.*
- F. *(e) Stems are cut to within 6 inches of the ground when doing roadside maintenance or at utility crossings.*
- G. *(f) Leave tree or unit marking is applied so as to not be visible within 100 feet of sensitivity level 1 and 2 travel routes.*
- H. *(g) Consider scheduling work outside of major recreation seasons on roads leading to recreation facilities.*
- I. *(h) Special road and landing design is used. When possible, log landings, roads and bladed skid trails are located out of view to avoid bare mineral soil observation from concern level 1 and 2 travel routes.*
- J. *(i) An actual opening size up to 1.5 acres is allowed.*
- K. *(new) An actual opening size up to 5 acres is allowed.*
- L. *(j) An actual opening size up to 10 acres is allowed in the foreground zone and 25 acres in middleground and background zone in concern level 1 & 2 travel routes.*
- M. *(k) An actual opening size up to 25 acres with inclusions is allowed.*
- N. *(l) An actual opening size up to 40 acres with inclusions is allowed.*
- O. *(m) Along concern level 1 and 2 travel routes, openings should be spaced at a minimum of 1000 feet apart next to the travelway.*
- P. *(n) Along remaining concern level 1 and 2 travel routes in prescription area, openings of up to 200 feet are allowed.*
- Q. *(o) Along concern level 2 travel routes, openings of up to 400 feet are allowed.*
- R. *(new) Along concern level 3 travel routes, openings of up to 500 feet or less are allowed.*
- S. *(p) Removal of overstory is delayed until understory is 10 feet in height.*
- T. *(q) Utility rights-of-ways are located and maintained to conform with natural patterns of vegetation.*
- U. *(r) Overhead utility lines and support towers are screened where possible.*
- V. *(s) The visual impact of roads is blended so that they remain subordinate to the existing landscape character in size, form, line, color, and texture.*
- W. *(t) Gravel pits and borrow areas are excluded from seen area of visually sensitive travelways and viewing points.*
- X. *(v) Openings are shaped and oriented to contours and existing vegetation patterns to blend with existing landscape characteristics. Edges are shaped and/or feathered where appropriate in retention and partial retention "seen areas." No geometric shapes are used.*
- Y. *(w) Cut and fill slopes are revegetated.*
- Z. *(x) Mowing or bush hogging is accomplished prior to roadside herbicide treatment.*

*AA.(y) Provide a range of stem diameters but favor 14 inch and larger stems in a mixture with other smaller sized tree stems.*

*BB.(bb) Introduce of favor wildflowers and/or shrubs and/or trees with showy flowers and/or fruits.*

*CC. (cc) Structures have finishes that reduce contrast with the desired landscape character.*

