

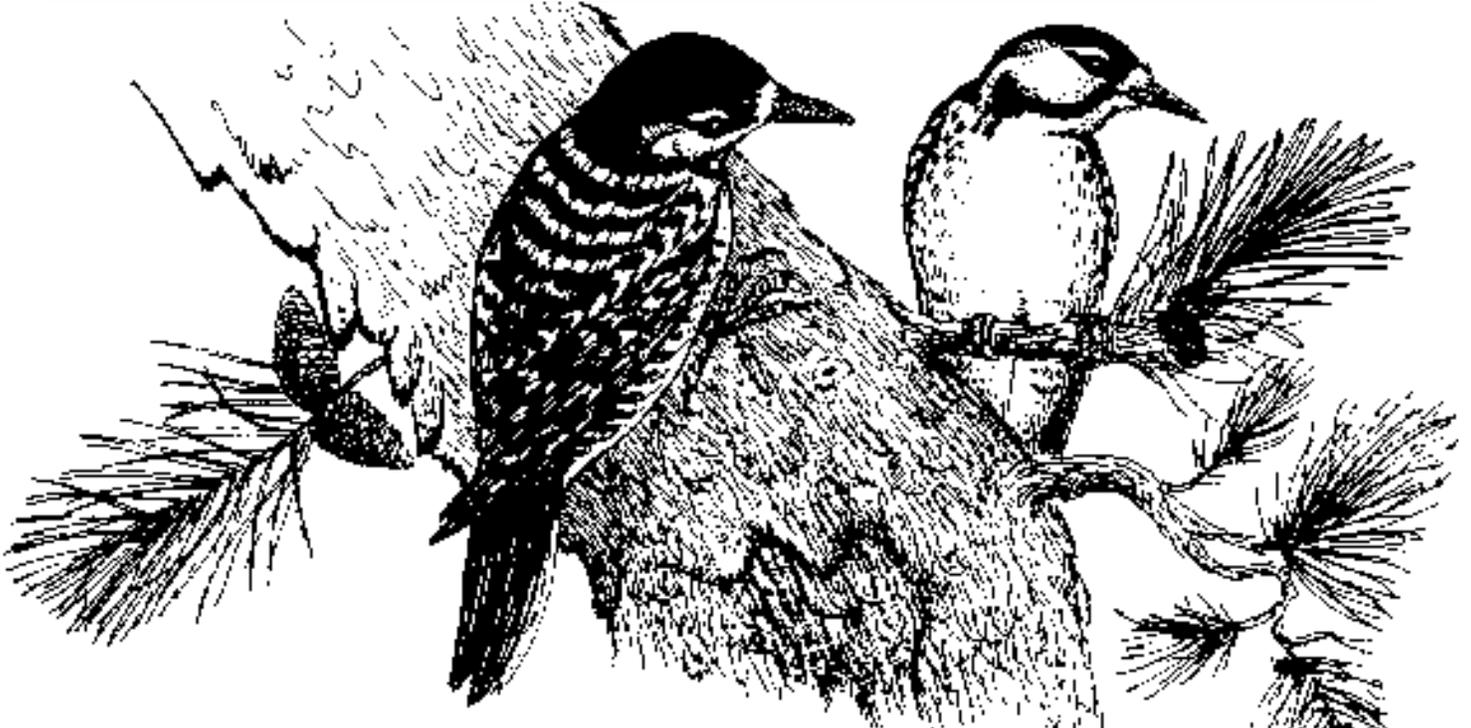
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**RED-COCKADED
WOODPECKER HABITAT
RESTORATION AND
IMPROVEMENT PROJECT IN
THE SWEETWATER AND
COLEMAN LAKE AREA**

Environmental Assessment

July 2009



**U.S. Department of Agriculture, Forest Service
National Forests in Alabama**

Red-Cockaded Woodpecker Habitat Restoration and Improvement in the Sweetwater Lake and Coleman Lake Area

Environmental Assessment

**National Forests in Alabama
Cleburne County, Alabama**

July 2009



**U.S. Department of Agriculture
Forest Service**



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ACRONYMS AND ABBREVIATIONS

BA	Basal Area
BMP	Best Management Practice
CAA	Clean Air Act
CCF	100 Cubic Feet
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FSH	Forest Service Handbook
FSM	Forest Service Manual
HMA	Habitat Management Area
KV	Knutson-Vandenberg
MIS	Management Indicator Species
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PILT	Payments in Lieu of Taxes
PETS	Proposed, Endangered, Threatened, and Sensitive
RCW	Red-cockaded Woodpecker
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SIO	Scenic Integrity Objectives
SPB	Southern Pine Beetle
TMDL	Total Maximum Daily Load
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WMA	Watershed Management Area

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1.0 INTRODUCTION

This environmental assessment (EA) documents the results of a study of the potential environmental impacts of actions proposed by the United States Department of Agriculture (USDA), Forest Service (USFS) to restore habitat needed for the recovery of the Federally endangered red-cockaded woodpecker (RCW) (*Picoides borealis*) on the Shoal Creek Ranger District of the Talladega National Forest, which is part of the National Forests in Alabama.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (USC) 4321 et seq.), which requires an environmental analysis for Federal Actions having the potential to impact the quality of the human environment; the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500 through 1508) for implementing NEPA; Forest Service Procedures for Implementing CEQ regulations (Forest Service Manual (FSM) Chapter 1950); and the Forest Service Policy and Procedures Handbook (Forest Service Handbook (FSH) 1909.15).

A key objective of NEPA is to help Federal agency officials make well-informed decisions about agency actions. The District Ranger on the Shoal Creek Ranger District is faced with a decision as to what, if anything, the USFS should do to restore habitat for the RCW on the Shoal Creek Ranger District to aid in the recovery of the species. This decision will be made within the overall management framework already established in the:

- *Revised Land and Resource Management Plan for the National Forests in Alabama* (Forest Plan, signed January 2004), and its accompanying EIS and Record of Decision (ROD);
- *Vegetation Management in the Coastal Plain/Piedmont Final EIS* (Volumes I and II) *and Supplement*; and
- *Revised Red-Cockaded Woodpecker Recovery Plan* (Recovery Plan, signed January 2003), prepared by the United States Fish and Wildlife Service (USFWS).
- *Pinhoti National Recreation Trail Management Plan* (signed November 2006)

The Forest Plan, EIS, and Recovery Plan establish overall rules and guidance for actions taken within the Shoal Creek Ranger District. Therefore, the alternative courses of action considered in this EA were crafted to be consistent with the concepts established in the above documents.

1.1 BACKGROUND

The RCW is endemic to open, mature and old-growth pine ecosystems in the southeastern United States. Due to a nearly complete loss of habitat, and subsequent extreme decline in population size, the RCW was federally listed as endangered in 1970. Currently, less than three percent of the species' former population size exists (USFWS, 2003a). The Shoal Creek Ranger District contains 16 RCW clusters and has the potential to support many more clusters, or family groups, of these woodpeckers.

In 1995, the USFS, Region 8 ROD for the *Management of the Red-cockaded Woodpecker and its Habitat on National Forests in the Southern Region* EIS directed National Forests to delineate Habitat Management Areas (HMAs) to support the recovery of the RCW. The management direction on the Shoal Creek Ranger District designated 20,753 acres of the District as a HMA for the RCW (USFS, 2001).

1.2 PROJECT AREA DESCRIPTION

The project area is located on the Shoal Creek Ranger District of the Talladega National Forest in Cleburne County, Alabama, approximately 8 miles north of Heflin (see **Figure 1.2-1**). The project area is located within a Dispersed Recreation management prescription area immediately adjacent to the RCW HMA and encompasses approximately 5,800 acres of National Forest Service land located within Compartments 31 – 35 and 38 - 41. The project area has been treated with periodic prescribed burning by the USFS since the early to mid-1980s for the purposes of hazardous fuels reduction and wildlife habitat improvements, and will continue to be prescribed burned in the future.

The project area (Compartments 31 – 35 and 38 - 41) comprises 21.6% percent of the Shoal Creek sixth level Hydrological Unit Code (HUC) watershed, .5% of the Cane Creek sixth level HUC, .2% of the South Fork terrapin Creek sixth level HUC, and .1% of the Cottaquila Creek sixth level HUC. Land administered by the Shoal Creek Ranger District comprises 92.6%, 20.2%, 79.4%, and 55.2% of the sixth level HUCs respectively.

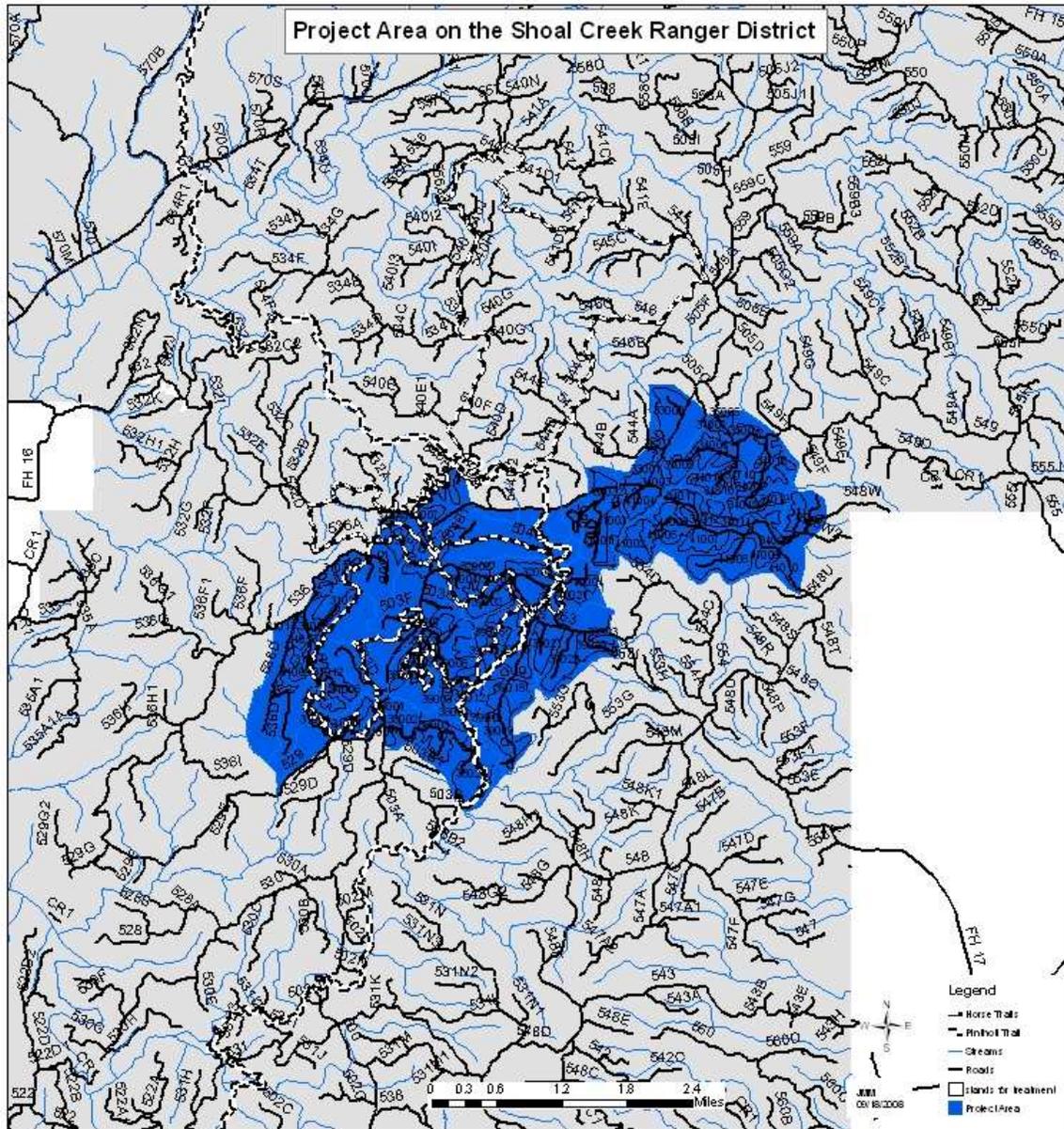


Figure 1.2-1: Location of the Project Area

1.3 PURPOSE AND NEED FOR ACTION

Under the Endangered Species Act (ESA), there are legislative requirements to positively manage for endangered species like the RCW on Federal lands. A prime objective of the Shoal Creek Ranger District is to comply with the ESA by providing habitat for the recovery of the RCW by restoring and managing a pine ecosystem, which furnishes preferred habitat for RCW foraging and nesting.

Existing habitat is not suitable for the RCW within the project area on the Shoal Creek Ranger District. A majority of the pine stands within the project area have excessive amounts of pine stems beyond the preferred habitat requirements (see Revised RCW Recovery Plan). Preferred habitat is between 40 and 70 basal area (BA), while current stand information within the project area shows basal areas between 80 and 170 sq.ft./ac. Thus, at present, stands do not provide the open park-like stands that the RCW needs for suitable habitat. RCWs require open areas of mature pines 60 years and older for nesting. Foraging habitats vary in age but usually are areas that are pine savannas with little, if any, midstory of hardwood (USFWS, 2003a).

The majority of the project area itself is not in the RCW HMA, but is adjacent and provides an opportunity for expanding the usable habitat for the RCW. Seventeen of the stands are in the RCW HMA, while the remaining 54 stands are not in the RCW HMA. The management of the RCW is currently listed as Goal 12 and Management Prescription 8.D.1 in the Revised Land and Resource Management Plan (USFS, 2004). Desired conditions for the RCW are stated here. The Shoal Creek Ranger District is not currently meeting these desired conditions. Habitat management is clearly necessary for the recovery of the species and therefore meeting the purpose and need. Five stands are in the 7.D (Concentrated Recreation Zone) Management Prescription which states “the protection of rare communities and species associates will be provided, along with protection measures for population occurrences for threatened, endangered, sensitive and locally rare species. This will provide a high likelihood that species within these associations will continue to persist on NFS lands” (p3-30 USFS, 2004). The remaining stands are in the 7.E.2 (Dispersed Recreation) Management Prescription) which allows for timber harvesting and vegetation manipulation to be used to achieve recreational, wildlife, ecosystem restoration, or aesthetic values.

1.3.1 Summary of Proposed Action

The following is a general description of the Proposed Action (Alternative 2). A more detailed description of each activity and connected actions can be found in Section 2.2.

- a) RCW Thin approximately 1004 acres;
- b) Conduct approximately 357 acres of first thinning.
- c) Conduct 477 acres of longleaf restoration treatment. A combination of artificial and natural regeneration will be utilized. Prescribed fire and mechanical site preparation along with hand-tool and herbicide release (when needed) is proposed in order to insure survival of seedlings.
- d) Conduct 16 acres of shortleaf restoration treatment. Similar to the longleaf restoration, except for promoting shortleaf pine instead of longleaf pine.
- e) Approximately 74 acres of timber stand improvement.

- f) Approximately 102 acres of midstory removal.
- g) Approximately 44 acres of pre-commercial thinning.
- h) Installation of RCW artificial cavity inserts.
- i) Improvements to the Warden Station Horse Camp

1.4 DECISION FRAMEWORK

Given the purpose and need, the Responsible Official (Shoal Creek 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 in the next five years.

1.5 PUBLIC INVOLVEMENT

Public involvement during the NEPA process includes, at a minimum, public scoping, public review of the EA, and responses to comments submitted by the public. In accordance with CEQ's regulations for implementing NEPA, the Forest has involved the interested and affected public during the preparation of this EA.

On October 20, 2008, a scoping letter explaining the proposal to improve the habitat for RCW to meet the requirements of the Recovery Plan and RCW EIS with site specific information was mailed to 73 individuals and organizations that had previously expressed interest in the management of the Shoal Creek Ranger District. In addition, the proposed action appeared in both print and Internet versions of the quarterly Scheduled of Proposed Actions for the National Forests in Alabama in 2008. A legal notice requesting comments was also published in the *Anniston Star* in October 2008. Copies of the scoping letter and maps of the project areas were posted at Coleman Lake, Sweetwater Lake, and Warden Station Horse Camp for 30 days. Two written responses were received during scoping and both responses were in favor of the project.

The purpose of the scoping process is to determine the scope of issues to be addressed in the EA and to identify major or significant issues relating to the Proposed Action. The connected actions of improving the Warden Station Horse Camp were scoped by placing a legal notice in the *Anniston Star* on January 26, 2009 and by contacting interested horse groups. In addition, a copy of the scoping notice was posted in the Warden Station Horse Camp for 30 days.

A copy of the EA was placed on the National Forests in Alabama web site. Appendix F of this EA contains a detailed response to the comments received. Since no negative comments were received this project is not subject to appeal and maybe be implemented immediately.

1.6 ISSUES AND SCOPE OF THE EA

Issues can be defined as the relationship between the Proposed Action or its alternatives and the human and natural environment. Issues were identified by the Forest, State and Federal agencies, a review of similar projects, and by the public during the scoping process.

Issues are used to define and focus the discussion of the affected environment for each resource area and the analysis of the potential environmental consequences of an action. Issues were separated into two groups: significant (or major) and non-significant. Significant issues are defined as those directly or indirectly caused by implementing the Proposed Action or its alternatives. Non-significant issues are identified as those outside the scope of this EA; already decided by law, regulation, the Forest Plan, or other higher-level decision; irrelevant to the decision to be made; or conjectural and not supported by scientific or factual evidence. In addition, resource areas that would remain unaffected by any of the alternatives are considered non-significant issues.

A summary of issues and resource areas analyzed in this EA is presented in Section 1.6.1 below. Those issues and resource areas that were dismissed from further analysis are discussed in Section 1.6.2, along with the rationale for their dismissal.

1.6.1 Significant Issues

The following four significant issues are analyzed in this EA:

Water Quality (Significant Issue #1)

Protection of water quality is required by the Federal Clean Water Act (CWA), as well as Alabama water quality regulations. Timber management activities could affect water quality, and subsequently, aquatic species, by exposing soils, leading to increased erosion during storm events and subsequent higher suspended solid loads and turbidity in downstream surface waters. In addition, water quality could be degraded by the use of herbicides. Activities within riparian areas and wetlands have the potential to degrade water quality. Therefore, impacts to water quality are analyzed in this EA.

Vegetation and Wildlife, Including Proposed, Endangered, Threatened, and Sensitive (PETS) Species (Significant Issue #2)

Given the purpose and need of the project – to restore habitat for the RCW, a federally endangered animal species, both vegetation and wildlife, including PETS species, would be affected by the project. Plant communities in the project area would be affected by timber management, and even more so cumulatively with prescribed fire.

Visual Resources (Significant Issue #3)

Visual resources have the potential to be adversely affected by the presence of workers and equipment during management activities. In addition, vegetation management by thinning, herbicide use, and prescribed fire, as well as temporary road construction and reconstruction, could alter the appearance of the project area.

The majority of the project area has been assigned a spectrum of high/moderate scenic integrity objectives (SIOs; USFS, 2004). The majority of the forested stands within the project area currently have high basal areas and a closed canopy. However, since the late 1990s, part of the canopy has opened up in areas as a result of SPB infestations and subsequent pine mortality. In 2000, cut-and-leave suppression was conducted on various SPB spots in the project area. Overall, the project area has quite a few viewers with the horse trails and hikers. There is also use by hunters during the fall and winter months. Numerous gravel roads dissect the area allowing for vehicle travel. The visual impacts along the Pinhoti National Scenic Hiking Trail will be mitigated by following Forest Wide Objectives 135 – 137 as stated in the Revised Land and Resource Management Plan.

Soils (Significant Issue #4)

Disturbance of soils from management practices involving timber harvest, site preparation and reforestation may result in some form of physical, chemical and biological change. Soil disturbance is closely associated with potential water quality issues. Alabama state Best Management Practices and Forest Plan standards and objectives address practices to minimize soil disturbance.

1.6.2 Non-Significant Issues

The following issues and resources were dismissed from further analysis in this EA:

Air Quality (Non-Significant Issue)

Consideration of air quality impacts is required by the Federal Clean Air Act. Air quality has the potential to be degraded during management activities by dust/particulates and emissions from heavy equipment. Minor increases in carbon monoxide, nitrogen oxides, hydrocarbons, and particulate matter would be expected. None of these increases would result in a change in attainment status of the area, and all impacts on air quality would be short-term. Air quality would also be affected temporarily by prescribed fire. All prescribed fires on the Forest are planned in coordination with the Alabama Forestry Commission, which regulates prescribed burning in the State in accordance with the State Implementation Plan (USFS, 2003a). The low population density of the affected Forest compartments, distance to sensitive receptors, and need to prepare prescribed burn plans should mitigate impacts on air quality. Therefore, air quality is dismissed from additional analysis.

Herbicide Use (Non-Significant Issue)

Herbicide treatments to eliminate unwanted species (including noxious weeds and certain midstory species) would be done within RCW foraging and nesting areas under Alternative 2 (see Section 2.2 below). After harvest operations are completed, prescribed fire would be used to reduce the existing ground fuels and aid in the reduction of unwanted vegetation. Treatments needed to control unwanted vegetation would be determined upon post-harvest evaluations. Herbicide treatments, such as foliar spray and/or injection applications or felling (cut stems) with stump treatment applications, may be chosen for the best control methods. A combination of foliar spray mixtures may be used for better control of unwanted species, depending on species composition. When implemented, foliar spray applications would be applied to unwanted vegetation less than 5 feet in height. Felling with stump treatment applications or injection applications would be used to treat unwanted vegetation over 5 feet in height. Areas with older and/or dense growth of unwanted vegetation may have selective treatments with herbicides prior to prescribed fire applications to better manage the desired control. Some of these areas may also have post prescribed fire selective treatments with herbicides. Areas where prescribed fire controls most of the unwanted vegetation would only have selective spot treatments with herbicides. Some areas may have unwanted vegetation controlled by prescribed fire and the use of herbicides may not be necessary.

The Record of Decision for the *Vegetation Management in the Coastal Plain/Piedmont Final Environmental Impact Statement (FEIS)* limits the application of herbicide active ingredients (a.i.) per acre. All herbicide applications will be prescribed not to exceed the a.i. limitations per acre.

Herbicide types, application methods, mixtures, and rates that may be applied upon post-thinning evaluations are presented in **Table 1.6-2**. Site preparation methods associated with restoration treatments will range from, or include a combination of prescribed burning, mechanical, handtools and chemical treatment of competing vegetation. Chemical treatment of stands will include either a directed foliar spray of a mixture containing 4% Garlon 4, ½% Arsenal, 1% Cide-Kick and 94.5% water or by injection using a mixture containing 50% Garlon 3A, ½% Arsenal, and 49.5% water. Stands identified as harboring proposed, endangered, threatened, and sensitive species (PETS) will not receive chemical treatment. Stands containing streamside management zones (SMZ) will not receive chemical treatment within the SMZ, as SMZ areas are not part of the proposed project. Additionally, chemical treatments will only be utilized in stands where competition from other vegetation necessitates chemical application.

Table 1.6-2. Herbicide Types, Application Methods, Mixtures, and Rates				
Type	Application Method	Purpose	Mixture	Rate (Maximum Limit)
Surfactant	N/A	Added to non-aquatic mixtures for better leaf surface coverage	No more than a 1% solution of surfactant	0.90 lbs a.i./acre
Imazapyr	Foliar	Control of hardwood and conifer species	½% solution (with water)	26 gallons of mixture applied per acre (0.50 lbs a.i./acre)
	Injection and stump treatment	Control of hardwood and conifer species	½% solution (with water)	5 gallons of mixture per acre (0.10 lbs a.i./acre)

Triclopyr (amine)	Injection and stump treatment	Control of hardwood and conifer species	50% solution (with water)	5 gallons of mixture per acre (4 lbs a.i./acre)
Triclopyr (ester)	Foliar spray	Control of hardwood and conifer species	3% solution (with water)	26 gallons of mixture applied per acre (2 lbs a.i./acre)
	Foliar spray	Control of invasive species such as privet and wisteria	4% solution (with water)	12.5 gallons of mixture per acre (2 lbs a.i./acre)

The use of herbicides under Alternative 2 may pose a risk to humans, fish, and/or wildlife. However, any herbicides applied would be done according to the labeling information and at the lowest rate effective at meeting project objectives in accordance with guidelines for protecting the environment. When labeling and application directions are followed and safety recommendations are implemented, minimal adverse effects are expected. The effects of the treatment would be limited to the trees in the immediate vicinity of the application areas. All herbicides would be ground-applied through manual methods, such as with low pressure backpack sprayers and/or cut surface treatments (stump treatment or injection), and application would be restricted during unfavorable weather conditions, such as high winds.

A project-specific risk assessment to determine risks to humans, fish, and wildlife from herbicide use under Alternative 2 has been completed and is provided in Appendix E. This risk assessment determined that there would be no adverse effects on humans, wildlife, and fish from the use of herbicides under this project. In addition, with the provision of riparian buffer areas on stream zones, the risk of herbicide spills or movement into stream zones is further reduced. All applicable mitigation measures contained in the *Vegetation Management in the Coastal Plain/Piedmont Final EIS* (USFS, 1989a) would be followed. A complete discussion of the effects of herbicides is contained in this EIS, to which this document tiers. In addition, all herbicide applications would follow the standards and objectives of the Forest Plan and RCW Recovery Plan. Current risk assessments for the above-listed herbicides may be found at: www.fs.fed.us/foresthealth/pesticide/risk.htm.

The use of herbicides carries some risks to human health and safety, particularly to the applicator. This risk is reduced by requiring the applicator to be trained in safety precautions, proper use, and handling of herbicides. Other factors reducing the risk of herbicide use to human health and safety is the low level of active ingredient per acre and placement of notice signs in areas where herbicide has been applied. The signs include information about the herbicide used, when it was applied, and who to contact for additional information. Appendix E of this EA also contains a list of standard mitigation measures for herbicide use that would be followed during this project.

There would be no effects from herbicide use under Alternative 1 since herbicides would not be used under this alternative.

Cultural Resources (Non-Significant Issue)

Consideration of potential effects on heritage resources is mandated by the National Historic Preservation Act (NHPA) and NEPA. Consequently, an archeological survey of proposed treatment areas in compartments 31 – 35 and 38 - 41 will be conducted prior to implementation. Any sites found plus a 10 meter buffer will be marked on the ground and not included in the project area. The project leader will coordinate with the Forest Archeologist during the project planning and implementation. Therefore, this is a non-significant issue that is not addressed further in this EA.

Recreation (Non-Significant Issue)

Vegetation management activities have the potential to temporarily disrupt or displace recreational use in the nine compartments due to the presence of workers and use of equipment. The horse trail and the Pinhoti National Scenic Hiking Trail pass through the project area. Fishing opportunities are provided in Sweetwater Lake on the southern border of the project area and Coleman Lake in the north central portion of the project area. The Warden Station Horse Camp is also located within the project area.

Alternative 1 would not result in any direct adverse effects on recreation in the area. Temporary adverse effects on recreation may result from these activities due to the presence of workers and equipment, temporary effects on the visual quality of the area, and noise generated from equipment and vehicles. These impacts would only affect recreation users and opportunities immediately surrounding the activity sites, and for the short duration that a particular site is being worked on. While recreational use of public lands would not be restricted during the proposed activities, it is likely that use would decline due to disturbance in the area, and as a result of signs posted to notify the public of the activities. There would remain many acres of forest surrounding the project area that would remain unaffected and available to recreationists.

Beneficial impacts on recreation are anticipated over the longer-term from Alternative 2. Thinning would result in increased visibility into forested areas, which would allow hunters to more easily identify game species and would provide a more manageable terrain for hiking. Wildlife viewing would also be enhanced. Reopening temporary roads in the area may allow hunters and hikers easier foot access to interior forest areas. However, unauthorized off-road vehicle (ORV) use may increase as a result of the open forest conditions created by thinning activities, particularly from unauthorized ORV riders using skid trails and logging landings. To reduce impacts from potential ORV use of the area, skid trails and logging decks would be placed away from known high use areas by at least 50 feet. In the event that ORV use and resource degradation is evident, mitigation measures, such as lopping and strategically scattering slash in the vicinity of skid trails and log landings (piles 1 to 2 feet above the ground) would be performed to discourage unauthorized ORV riding, but to still allow for foot access.

Overall, neither the adverse nor the beneficial impacts on recreation from Alternative 2 are of such a magnitude as to constitute a major issue; therefore, this is a non-significant issue that is not addressed further in this EA.

Human Health and Safety (Non-Significant Issue)

All potential effects on worker and public safety under the action alternatives would be short-term, lasting, at most, a short period following completion of vegetation management activities. Thinning activities, road construction, rehabilitation, and maintenance, and several of the other proposed activities would require the use of heavy equipment. The use of heavy equipment and the movement of fallen timber present the highest potential for safety risks during these activities. Injuries to both workers and recreational users of the Forest could occur. Forest planning documents clearly require numerous safety precautions, as well as requirements for qualified personnel to conduct management actions. Equipment operators must demonstrate proficiency with the equipment and be licensed to operate it. In accordance with Forest Service Health and Safety Code Handbook (FSH 6709.11), vegetation management activities require all USFS workers to wear safety equipment, including hard hats, eye and ear protection, chaps, and fire retardant clothes. The USFS would stipulate these and other safety measures as part of the timber sale/services contract. In addition, since the project area is used for hunting, the USFS would stipulate in the contract that all workers wear orange vests, and not leave the project site without an orange vest being worn, in order to be visible to any nearby hunters. The USFS would make the contractor aware of the dates of the hunting season.

The USFS would notify the public of the proposed activities, locations of activities, and dangers at the sites prior to the onset of any activity. Notification would be made through newspaper releases, appropriate signage, and use of bulletin boards at information sites. The USFS would also post information on the project operations and times of project implementation on the Forest website. Most of the general public is already aware of logging, burning, and other Forest operations.

The private contractor would be responsible for adhering to public safety protection measures during all vegetation management and service activities. These requirements may include, but are not limited to: removal of slash and debris from skid roads to facilitate public foot traffic; immediate repair of any damage to roads and ditches during activities; and use of appropriate devices, such as barricades, where necessary, to control entry to any open, dangerous site.

In addition to the use of heavy equipment and site safety risks, proposed herbicide use under Alternative 2 could potentially adversely affect worker health and safety, and to a lesser extent, public health and safety. As discussed above under the non-significant issue *Herbicide Use*, a project-specific risk assessment to determine risks to humans, fish, and wildlife from herbicide use under Alternative 2 has been completed and is provided in Appendix E. This risk assessment determined that there would be only negligible adverse effects on human health and safety from the use of herbicides under this project. All applicable mitigation measures contained in the *Vegetation Management in the Coastal Plain/Piedmont Final EIS* (USFS, 1989a) would be followed. A complete discussion of the effects of herbicides is contained in this EIS, to which this document tiers. Current risk assessments for the above-listed herbicides may be found at: www.fs.fed.us/foresthealth/pesticide/risk.htm.

The use of herbicides carries some risks to human health and safety, particularly to the applicator. This risk is reduced by requiring the applicator to be trained in safety precautions, proper use, and handling of herbicides. Other factors reducing the risk of herbicide use to human

health and safety is the low level of active ingredient per acre and placement of notice signs in areas where herbicide has been applied. The signs include information about the herbicide used, when it was applied, and who to contact for additional information. Appendix C of this EA also contains a list of standard mitigation measures for herbicide use that would be followed during this project.

Since numerous measures to ensure worker and public safety would be in place during the proposed activities under all action alternatives, no significant adverse impacts on human health and safety would result from any of the alternatives. Any risks to workers or the public would be minor and short-term. Strict adherence to the safety measures described above and in Appendix C would minimize or eliminate adverse human health and safety effects.

Socioeconomics (Non-Significant Issue)

Counties with National Forest land within their boundaries are paid 25 percent of the monies received from natural resources extraction and consumption, such as timber harvest, mining, and recreation (USFS, 2004b). County revenues from these 25 percent funds vary annually, depending on timber harvest, mining, and recreation use that year. If these payments by the USFS do not add up to at least \$1.75 per acre annually, then Payments in Lieu of Taxes (PILT) are used to address the shortfall. PILT payments are payments to local governments/counties containing federally owned lands to compensate for non-taxed (Federal) property under the jurisdiction of those governments/counties.

Trends in the levels of the 25 percent funds and PILT payments in the National Forests in Alabama over time are very important to individual counties, which depend on them as an important part of their tax base (see **Table 1.6-3**). While PILT payments have risen dramatically, it has not been enough to make up for the lost revenue.

Table 1.6-3. PILT Payments to Cleburne County from the National Forests in Alabama for Selected Years					
Payment Type	2003	2004	2005	2006	2007
PILT payments	\$33,264	\$36,462	\$38,039	\$40,222	\$42,174

The Secure Rural Schools and Community Self-Determination Act of 2000 (PL 106-393) gave counties options on how to contend with this funding shortfall that affected basic public facilities and services like roads and K-12 education. Counties could continue to receive 25 percent fund payments or elect to receive their share of the average of the three highest 25 percent payments during the period from 1986 through 1999 (USFS, 2004b). The latter is called the full payment option. Cleburne County has elected the full payment option (Matthews, 2008).

Under the action alternatives, thinning and vegetation management to benefit the RCW would occur within Compartments 32 – 35 and 38 - 41. Sawtimber would be harvested in the estimated volumes shown in **Table 1.6-4** (for Alternatives 1 and 2).

Table 1.6-4. Estimated Volumes Proposed For Thinning From Selected National Forests in Alabama Compartments and Predicted Range of Revenues

Comp.	Sawtimber Volume (CCF)	Pole/Pulpwood Volume (CCF)	Predicted Range of Bids*	Hypothetical Range of 25 Percent Payments to County**
31	1509	5209	\$96,286 - \$142,093	\$24,701 - \$35,523
32	84	654	\$6,816 - \$10,458	\$1,704 - \$2,615
33	0	0	\$0	\$0
34	901	551	\$47,254 - \$66,927	\$11,814 - \$16,732
35	17	0	\$850 - \$1,190	\$213 - \$298
38	124	87	\$6,548 - \$9,289	\$1,637 - \$2,322
39	653	1221	\$37,534 - \$54,257	\$9,384 - \$13,564
40	28	278	\$2,512 - \$3,906	\$628 - \$977
41	1402	582	\$72,428 - \$102,214	\$18,107 - \$25,554
Totals	3209	3373	\$173,942 - \$248,241	\$43,487 - \$62,062

* Assuming minimum bid prices of \$50 to \$70/CCF (hundred cubic feet) for pine sawtimber and \$4 to \$7/CCF for pine pulpwood and bidding that ranged from minimum bid price to 20 percent above minimum price, rounded to nearest \$1,000 (Matthews, 2008).
** These are not annual payments, but spread out over the life of the project.

Given the likely range of 25 percent payments that would be made to Cleburne County during a multi-year timber sale under Alternative 2, these would not exceed the payments now being made under the “full payment option” described above. In other words, the current PILT payment is greater than the likely annual 25 percent payment that would be realized from the action alternatives. Therefore, none of the alternatives would have a fiscal impact on Cleburne County government’s budget, revenue, or expenditures.

Environmental Justice/Protection of Children (Non-Significant Issue)

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires that Federal agencies identify and address, as part of their action, any disproportionately high and adverse human health or environmental effects on minority or low-income populations. According to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs Federal agencies to “identify and assess environmental health risks and safety risks that may disproportionately affect children” and to “ensure that [their] policies, programs, activities, and standards address disproportionate risks to children.”

The proposed project is located within the boundaries of a National Forest, and thus, would not cause any displacement of any residents, nor would it eliminate any employment opportunities. Therefore, none of the alternatives would have a disproportionate effect on these populations. All adverse effects resulting from the project would affect all persons within the project area, regardless of income, race, or age. In addition, none of the alternatives are expected to result in any major changes in the economic environment in or around the project area, result in long-term health or safety impacts.

Climate Change (Non-Significant Issue)

This project affects 1% of the district, while the remaining 99% of the district will continue to function in the carbon cycle, so any impacts will be negligible. The project will initially leave fewer trees to store carbon on site, but will also involve planting trees, which will allow for carbon sequestration at a higher rate, as younger trees sequester carbon faster than older trees. At a global or national scale, the short term reduction in carbon stocks and sequestration rates of the proposed project are very small, as are the potential long term benefits. Therefore, the effects of climate change on this project and the effects of this project on climate change are not analyzed further in this environmental assessment.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for the RCW habitat restoration and improvement project. Two alternatives are examined in detail in this EA, and are described in Sections 2.1 and 2.2. Section 2.3 lists mitigation measures, which would be implemented as part of the action to be taken. Section 2.4 presents the alternatives considered in comparative form, defining the differences in impacts resulting from each alternative.

Note on Reported Acreages – For the purposes of this assessment, all acreages for specific treatments, landscape analyses, etc. are calculated using GIS (Geographic Information System) based data sources. GIS based calculations of acreage and distances are made from an aerial perspective, and do not take into account topographic effects on area and length measurements. As a result, reported acreages in this document are considered to be approximate, and may vary slightly from acreages determined by ground-based methods.

2.1 ALTERNATIVE 1: NO ACTION (CURRENT MANAGEMENT)

Consideration of the No Action alternative is required by NEPA and CEQ regulations for implementing NEPA. Under Alternative 1, no vegetative thinning or other treatments would occur within the project area, and current management of the project area would continue. Current management includes periodic prescribed burning, some level of noxious weed control, and other activities permitted in the Forest Plan. There would continue to be some efforts made for the protection and enhancement of the RCW, including monitoring, placement of inserts, and removal of predators and nest cavity competitors; however, no direct efforts to improve the quality and quantity of RCW foraging and nesting habitat would be made. This alternative would not meet the requirements of the ESA. In addition, other resource-related activities, including midstory removal and aggressive noxious weed treatment, would not occur under this alternative. The No Action alternative serves as a basis for comparison of the environmental impacts of the Proposed Action and its alternatives, and is a viable alternative.

2.2 ALTERNATIVE 2: RCW HABITAT RESTORATION (PROPOSED ACTION)

This alternative primarily consists of using vegetation manipulation by restoration, thinning and midstory control (via mechanical methods, herbicide use, and prescribed fire) to help restore habitat for the RCW within Compartments 31-35 and 38-41. Specific activities that would occur under Alternative 2 are listed and described below. Maps of project activities and tables of current stand conditions, by compartment, under Alternative 2 are provided in Appendix G of this EA.

- Thin approximately 1004 acres in Compartments 31-35 and 38-41 to reduce stands to a 60 – 80 square-foot basal area (BA). **Table 2.2-1** shows a breakdown of the approximate number of acres proposed for harvest in each compartment. All vegetation management activities would be implemented in accordance with Forest Plan standards and Alabama’s *Best Management Practices for Forestry*.

Table 2.2-1. Acres Proposed for Thinning By Compartment under Alternative 2						
Comp.	Stands	Total Comp. Acres*	No. Acres to be Harvested*	No. Acres For Each Stand Type*		
				First Thinning	Restoration	RCW Thin
31	1, 4, 6, 9, 11-14, 28, 30, 33, 37, 39	1,124	367	53	117	197
32	2-5, 7	1,075	187	93	0	94
33	32	1,060	36	0	0	36
34	3, 5, 7, 9-15, 19-20	1,121	298	88	84	126
35	5, 9	1,756	18	0	0	18
38	1-4, 24	1,139	180	50	30	100
39	1, 2, 4, 7, 8, 10, 12-15, 18-19, 23, 27, 33	1,243	438	60	60	318
40	4, 21	994	30	13	0	17
41	1-6, 8-10	949	300	0	202	98
TOTAL		10,461	1,854	357	493	1004

*Includes National Forest System lands only.

- Restoration harvest on approximately 493 acres of stands occupied by off-site loblolly pine in Compartments 31, 34, 30, 39, and 41.
- First Thinning on approximately 357 acres in Compartments 31, 32, 34, and 38-40. These loblolly pine stands are 25 – 40 years old and are overstocked with basal areas ranging from 95 – 167 sq.ft./ac.
- Conduct prescribed burning of approximately (5740 acres) over the next several years, including growing season burns within recruitment stands to control midstory vegetation (already analyzed in Prescribed Burning CE).
- Make improvements to the Warden Station Horse Camp including, developing a host site with electricity, improving roads in the Horse Camp, designating camping sites, installing additional SST’s (vault toilets), and installing traffic barriers.
- Conduct Timber Stand Improvement on approximately 74 acres.
- Conduct Pre-commercial Thinning on approximately 44 acres.
- Conduct Midstory removal on approximately 102 acres.
- Conduct RCW Thinning on approximately 1004 acres.
- Use and maintain the existing permanent road system. Annual maintenance, including blading, graveling/surface replacement, and mowing, and some pre-haul maintenance, including reshaping and ditch work for proper drainage, would occur on existing permanent roads in the project area prior to initiation of RCW habitat restoration activities (USFS, 2002a; 2003d).

- Construct approximately 2 miles of temporary road;
- Reopen and rehabilitate approximately 4.5 miles of temporary roads to access timber stands and utilize existing log landings within the project area where possible. These roads were used the last time timber was removed from the area (approximately 10 years ago), and reopening them would only involve minor disturbance. Understory vegetation would be cleared from the surfaces of these temporary roads, and gravel would be spread in dips, on slopes exceeding 10 percent, and at intersections with surfaced roads. **Table 2.2-2** presents a breakdown of the number of miles of existing and new temporary roads to be used in each compartment. In addition, this table presents the number and acreage of landings to be used in each compartment under Alternative 2.

Comp.	No. of Landings (Approx. Total Acres)	Miles of Existing Temp. Roads Reopened	Miles of New Temp. Road Construction
31	12 (2.4)	1.0	.3
32	5 (1.0)	.2	.1
33	1 (.2)	0	0
34	8 (1.6)	1.0	.3
35	2 (.4)	0	0
38	5 (1.0)	.5	.2
39	10 (2.0)	1.3	.6
40	1 (.2)	0	.1
41	6 (1.2)	.5	.4
Total	50 (10)	4.5	2

- Plant the approximately 493 acres of restoration harvest areas with containerized longleaf pine seedlings (16 acres of the 493 will be planted with shortleaf pine); conduct site-prep burns and/or chemical site prep depending on the presence of PETS.

Restoring longleaf pine to sites, historically occupied by longleaf pine, but currently stocked by other species is to be implemented on 477 acres. Restoration of shortleaf pine is also proposed for 16 acres. This restoration will be implemented by a clearcut method while reserving existing longleaf pine for purposes other than supplying natural regeneration. In the majority of these stands, 0 – 10 sq.ft. of basal area of longleaf pine will be left on site. It is desirable to have 30 sq.ft. of basal area of longleaf pine to rely solely on natural regeneration to restock the stand. In addition, it is difficult to time the harvest to a good seed crop year. For these reasons, the optimal way to ensure successfully restocking the stands to longleaf pine is to clearcut, site prep, and then plant longleaf pine seedlings. The above, also applies to the shortleaf pine stand, where 20 – 30 sq.ft. of basal area will be retained in reserve trees on the site, however artificial regeneration will ensure that this stand is successfully regenerated. In areas of these stands where there is adequate stocking already, then that portion of the stand will not be replanted to either longleaf pine or shortleaf pine.

Upon completion of the proposed vegetation management activities, all of the temporary roads would be closed except for administrative use; permanent roads would continue to be maintained as permanent roads. The majority of these temporary roads would be seeded with wildlife

mixtures and native grasses and allowed to revegetate. However, some would be permanently maintained as wildlife openings. In addition, roads that access a RCW insert or natural RCW tree would be seeded and maintained.

2.3 MITIGATION MEASURES

During vegetation management activities, standard best management practices (BMPs) and Forest-wide standards and objectivess would be implemented as provided in the revised Land and Resource Management Plan and *Alabama’s Best Management Practices for Forestry*. Implementation of these BMPS would control or reduce potential adverse impacts from soil erosion, surface water runoff, and sedimentation. In addition to these, other measures would minimize or avoid adverse impacts to environmental resources during the proposed activities. **Table 2.3-1** lists these other measures according to the resource area affected. Appendix C also lists standard mitigation measures for prescribed burning and herbicide use that would be implemented under the action alternatives.

Table 2.3-1 Recommended Mitigation Measures By Resource Area	
Resource Area	Mitigation Measure
Water Quality and Aquatic Species	<ul style="list-style-type: none"> • The USFS would stipulate that the contractor avoid use of heavy equipment when soils are wet, such as after a storm event. If work on saturated soils is not preventable, the USFS would require the contractor to use low ground pressure equipment, logging mats, or other techniques. • Planning and approval of log landing and skid trail locations would ensure that they are located in stable, well-drained areas, away from gullies. Skidding and decking would be limited to designated and approved routes along ridgetops and gentle side slopes to protect sensitive soils (i.e., wet and micaceous soils). • The USFS would require the contractor to conduct all timber harvest and roadwork activities in accordance with <i>Alabama’s Best Management Practices for Forestry</i> and Forest Plan standards and objectives. • Compacted soils on skid trails, temporary roads, and log landings would be tilled before seeding to increase water infiltration. • Drainage structures at existing stream crossings would be assessed to determine if maintenance, repair, or replacement is required to accommodate stream discharge and fish passage, and to protect water resources. • If wetlands within the project area are field-verified, thinning operations within the wetland boundaries would be minimized and performed to ensure that the function of the wetland is preserved.
Vegetation and Wildlife, Including PETS Species	<ul style="list-style-type: none"> • Log landing and skid trail locations would be reviewed and approved by the USFS prior to harvest to ensure they are appropriately planned to minimize soil impacts and damage to residual trees. • Compacted soils on skid trails, temporary roads, and log landings would be tilled before seeding to enhance revegetation. • No mechanical or herbicide treatment will be allowed during the RCW nesting season of April 4th through July 6th each year in stands where RCW’s are present.

Table 2.3-2 shows mitigation measures that will be in place in stands where the horse trails and the Pinhoti National Scenic Hiking Trail pass through.

Table 2.3-2 Recommended Mitigation Measures by Trail System		
Trail System	Mitigation Measures	Stands Affected
Pinhoti National Scenic Hiking Trail	<ul style="list-style-type: none"> • In restoration units, only thin the trees in the 100 feet corridor on either side of trail. • In contract, specify that there will be no skidding on the trail. • No new logging roads paralleling the trail within 5 chains of the trail. • Infrequent perpendicular crossings of the trail are ok at locations agreed upon by contractor and USFS. • Specify in contract that trail will be rehabbed if it is skidded over and any damage occurs. • In restoration units and thinning units leave trees for trail markings. • Any slash that is generated within 50 feet of the trail will be removed. • Any slash that is generated within 50-100 feet of the trail will be lopped and scattered so that it is less than 12 inches high. • Unit boundary markings will be applied so that they are minimally visible within 100 feet of travel routes. • Log landings and skid trails are located out of view of trail to minimize bare mineral soil observation from trail. 	39018
		39027
		39033
		32003
		38003
		38004
		38024
		39012
		39013
		39016
Horse Trails	<ul style="list-style-type: none"> • Specify in contract that trails will be rehabbed if it is skidded over and any damage occurs. • In contract, specify that there will be no skidding on the trails. • Unit boundary markings will be applied so that they are minimally visible within 100 feet of travel routes. • Slash is removed, burned, chipped or lopped to within an average of 2 feet high, when clearly visible within 100 feet on either side of travel routes. • Stems are cut to within 6 inches of the ground in the immediate foreground. • Re-route or close horse trail during periods of logging for safety of the horse riders. • In restoration units and thinning units leave trees for trail markings, so that the trail does not become lost in the unit. • In restoration units, only thin trees in the 50 feet corridor on either side of the trails. • No slash should be left in the horse trail or piled along side 	31001
		31004
		31011
		31012
		31030
		39009
		39016
		30915
		39024
		31033
		31037
		31039
		31041
32003		
39001		
39002		
39004		
39007		

	the trails.	39008 39010 39013 39014
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In addition, to mitigation by following the Forest Wide Objectives any activities near the Pinhoti National Scenic Hiking trail or in areas classified as High Scenic Integrity Objective, the following measures will be adhered to; 1) Flowering and other visually attractive trees and understory shrubs are favored when leaving vegetation; 2) The visual impact of log landings is blended so that they remain subordinate to the existing landscape character in size, form, color, and texture; 3) The openings created by the cut boundaries are organically shaped; 4) Rehabilitate any physical effects on trails; 5) Slash is removed, burned, chipped, or lopped to within an average of 2 feet high, when clearly visible within 100 feet on either side of travel routes; 6) Unit boundary marking is applied so as to be minimally visible within 100 feet of travel routes; 7) Log landings, roads, skid trails are located out of view to minimize bare mineral soil observation from concern level 1 travel routes; 8) Stems are cut to within 6 inches of the ground in the immediate foreground.

No direct impacts on visual quality would occur as a result of Alternative 1. Alternative 2 would result in short-term, minor, very localized impacts on visual quality from the presence of workers and equipment in the project area. Thinning activities to open up the midstory under Alternative 2, would alter the visual character of the project area for a longer period of time by making forest stands appear more open. These impacts would affect only viewers in the immediate vicinity of treated stands. The more open appearance may have different impacts on different viewers, as some viewers may prefer a more open and managed forested setting (and subsequently, greater visibility into forested stands) and others a more heavily vegetated forest. However, since there would remain a mixture of thinned and unthinned areas within the overall project area, as well as a range of age classes, any long-term, adverse impacts on visual quality would be localized and negligible. In accordance with Forest Plan direction, thinning activities would be planned to achieve natural-appearing edges in the foreground distance zones. Therefore, thinning operations would not result in the failure of any of the proposed treatment stands to meet SIOs.

Temporary road rehabilitation/construction (including skid trails and landings) would primarily have short-term effects on the visual quality of the area. Negative visual impacts associated with logging decks and skid trails would be minimized by locating these areas away from frequently used areas. The majority of temporary roads to be used were constructed for previous management activities, and contain mainly understory vegetation. No major clearing would be associated with reopening these roads, and reopening and reuse of these roads would not result in major changes in the visual quality of the landscape.

Up to 2 miles of new temporary roads would be constructed, and these may involve more vegetation clearing and greater landscape disturbance. Only very short stretches of new road would be constructed in any given area, and any clearing associated with these new roads is not anticipated to dominate the landscape or violate the SIOs of the project area. Although they would be occasionally used for administrative purposes, the majority of temporary roads would

be seeded and allowed to revegetate following completion of activities. The only exceptions would be those temporary roads, skid trails, or landings to be permanently maintained as wildlife openings. These areas would remain open over the long-term, and would primarily contain early successional vegetation. These openings would be planned and designed so that their shapes appear natural in the landscape, and their presence does not significantly modify the landscape. Since no major impacts on visual quality would occur as a result of the project, impacts on visual quality are not discussed further in this EA.

2.4 COMPARISON OF ALTERNATIVES

Table 2.4-1 compares the potential environmental impacts resulting from the Proposed Action and its alternatives. Potential impacts are grouped according to significant issue. Section 3.0 of this EA contains a detailed discussion of these potential impacts by significant issue.

Significant Issue	Measurements	Alternative 1: No Action (Current Management)	Alternative 2: RCW Habitat Restoration (Proposed Action)
Water Quality / Soils	Number of new road-stream crossings	0	0
	Miles of temporary road constructed and reconstructed/ reopened (and miles within riparian corridor)	0	2 mile new construction; ~4.5 miles reopened (0 miles within riparian corridor)
	Number of log landings developed (and number within riparian corridor)	0	50 log landings (0 within riparian corridor)
	Acreage of treatment stands within riparian corridor of perennial and intermittent streams and wetlands	0	0 acres within riparian corridor

Vegetation and Wildlife, Including PETS Species	Changes in available habitat for management indicator species (MIS) and general wildlife in the project area	<p><u>General:</u> --Continued loss of vegetation diversity and abundance in forest understory (decrease browse). --Long-term increase in mature, continuous canopy forest habitat and wildlife species. --No promotion of early successional habitat.</p> <p><u>MIS:</u> --Beneficial effect on pileated woodpecker and wood thrush and their habitats. --No noticeable effect on Acadian flycatcher, hooded warbler, field sparrow, prairie warbler, scarlet tanager, Swainson's warbler, and white-tailed deer or their habitats. --Adverse effect on pine warbler and RCW and their habitats.</p>	<p><u>General:</u> --Increase in understory plant diversity and abundance (increased browse). --Increase in early successional habitat. --Increase in habitat diversity from a combination of thinning and prescribed burning.</p> <p><u>MIS:</u> --Beneficial effect on prairie warbler, pine warbler, RCW, and white-tailed deer and their habitats. --No noticeable effect on Acadian flycatcher, pileated woodpecker, hooded warbler, field sparrow or scarlet tanager or their habitats. Slight beneficial impact to Swainson's warbler and its habitat through canebrake restoration. --Adverse effect (minor) on wood thrush habitat.</p>
	Changes in forest health (changes in general forest conditions, SPB incidences, and noxious weeds)	<p>--Tree growth and forest health would decline over time, and would stabilize at a lower level. --Increased potential for SPB attacks. --Noxious weeds would continue to take over portions of the project area, and would likely spread to adjacent areas.</p>	<p>--Tree growth and forest health would improve. --Decreased potential for SPB outbreaks to occur. --Decrease in spread of noxious weeds, benefiting natural vegetation.</p>

	Effects on the RCW and available habitat for the species	<p>--No promotion or creation of RCW habitat. --Alternative would not work toward recovery plan objectives or be in compliance with the Endangered Species Act.</p>	<p>--Long-term, beneficial impact on RCW populations and habitat. --About 2,000 acres of habitat would be improved for the RCW. --Alternative is in compliance with recovery plan objectives and with the ESA.</p>
	Effects on other PETS	No effects on any other PETS species.	No effects on any other PETS species.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section has been organized according to environmental components, or resource areas. Each resource section contains information on the affected environment (existing conditions), direct and indirect environmental consequences of each alternative, and cumulative impacts.

The interdisciplinary study team (see Section 6.0, List of Preparers) first identified the specific activities, tasks, and subtasks involved in the Proposed Action and its alternatives. The full range of direct and indirect effects that could potentially occur as a result of the Proposed Action and its alternatives were then identified and analyzed. Direct effects are impacts caused by the alternative(s) at the same time and in the same location as the action. Indirect effects are impacts caused by the alternative(s) that occur later in time or farther in distance than the action.

A cumulative impact is an impact on the natural or human environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency, organization, or person undertakes such other actions. Cumulative impacts can result from individually minor and insignificant, but collectively significant actions, taking place over a period of time. Cumulative impacts were assessed by combining the potential environmental impacts of the alternatives with the potential impacts of known projects that have occurred in the past, are currently occurring, or are projected to occur in the future within the region of the Proposed Action. Known past, current, and reasonably foreseeable future projects in the vicinity of the project area are described below.

3.1 PHYSICAL ENVIRONMENT

3.1.1 Water Quality

3.1.1.1 Affected Environment

Surface Water:

The proposed management activities on the Shoal Creek Ranger District of the Talladega National Forest fall within four 6th level watersheds, the Cane Creek, the Shoal Creek, Cottaquila Creek, and the South Fork Terrapin Creek. The Cane Creek watershed is within the Tallapoosa River - Cane Creek 5th level watershed. The Cottaquila Creek and the Shoal Creek watersheds are within the Choccolocco Creeek 5th level watershed. The South Fork Terrapin Creek watershed is within the Terrapin Creek 5th level watershed. Annual precipitation is approximately 52 to 56 inches with approximately 20 to 30 inches of runoff. Surface waters include streams, beaver ponds, wetlands, constructed fishing ponds, and ephemeral ponds. Streams within the affected environment tend to be headwater in nature exhibiting a dendritic drainage pattern. The Alabama Department of Environmental Management has designated the

use of some or parts of these watersheds including Coleman Lake, Sweetwater Lake and Shoal Creek as Public Water Supply, Fish and Wildlife and Swimming.

Groundwater:

The groundwater on the Talladega Division is contained in the Piedmont and Blue Ridge aquifer system as well as the Valley and Ridge aquifer system. The majority of the ground water in the Piedmont and Blue Ridge aquifer system can be found in fractures within the metamorphic rock. The majority of the ground water in the Valley and Ridge aquifer system can be found in sandstone, limestone and dolomite formations. Both systems have some lateral communication with the surface. The productivity of the Piedmont and Blue Ridge aquifer system varies with fracture size but is generally inadequate for municipal supply. The productivity of Valley and Ridge aquifer system is generally good. (Miller, 1990.)

3.1.1.2 Direct/Indirect Effects

Alternative 1: No Action (Current Management)

The No Action Alternative proposes no new activities that would have any effect on sedimentation and/or water quality.

Alternative 2: RCW Habitat Restoration (Proposed Action)

The RCW Habitat Restoration Alternative proposes to restore RCW habitat within Compartments 31-35 and 38-41 through vegetation manipulation through the use of common silvicultural activities. This alternative proposes 493 acres of restoration (*clear-cuts with reserves, site prep and planting*), 1004 acres of RCW thinnings to reduce BA to 60 – 80 square-foot, 357 acres of first thinnings, 74 acres of timber stand improvements using hand tools, pre-commercial thinning of 44 acres with hand tools, and mid-story removal on 102 acres with hand tools. To support these silvicultural activities it will be necessary to use the existing road system and construct approximately 2 miles of temporary roads. In addition, to these activities to restore RCW habitat, this alternative proposes to make improvements to the Warden Station Horse Camp including developing a host site, road improvement, designating camp sites, installing additional SST's and installing traffic barriers.

Silvicultural practices (proposed thins and clear-cuts) are known to potentially affect water quality, water quantity, channel morphology, and downstream designated uses. Thinning and restoration cuts have the potential to cause the following direct effects: erosion, changes in ground cover condition, and changes in stand composition of streamside forest communities (Golden et al., 1984; Ursic, 1991; Belt et al., 1992; Brown and Binkley, 1994). Indirect effects could include sedimentation, changes in stream nutrient levels (particularly nitrates) increases in water yield, and changes in stream flow behavior (Golden et al., 1984; Brown and Binkley, 1994). The proposed action calls for the thinning (RCW thinnings and first thinnings) of 1308 acres and the clear-cutting of 536 acres. The erosion coefficient for thinning in the project area is 0.384 tons per acre per year with a one year recovery period. The erosion coefficient for clear-cutting in the project area is 0.1664 tons per acre per year with a three year recovery period. The 74 acres of Timber Stand Improvements using hand tools, the pre-commercial thinning of 44 acres with hand tools, and the mid-story removal on 102 acres with hand tools have negligible effects on the water resource and will not be analyzed in detail.

Site Preparation: The Proposed Action would use herbicides (Imazapyr and Triclopyr) to prepare the 536 acres of restoration for planting using Directed Foliar Spray and Cut Surface Treatments including stump treatment.

- **Directed Foliar Sprays** - Herbicide-water sprays, often with a non-ionic surfactant added, aimed at the target plant foliage to cover all leaves to the point of run off. They are usually applied with a backpack sprayer or mobile pump sprayer with hand controlled wand(s).
- **Cut Surface Treatment – Stem Injection (including hack-and-squirt and stump treatments)** – herbicide mixtures or concentrates applied into downward incision cuts spaced around wood stems made by an ax, hatchet, machete, brush ax or tree injector. Injection is a selective method of controlling trees and shrubs, which are greater than 2 inches in diameter.

Direct/indirect Effects of Herbicides to be used:

Imazapyr

Solubility: Imazapyr is soluble in water.

Potential For Leaching Into Groundwater: Imazapyr has a low potential for leaching into groundwater.

Surface Waters: Imazapyr may move from treated areas into streams. Most movement of imazapyr was found in runoff from storms. Use of a streamside management zone can significantly reduce the amount of offsite movement of imazapyr in stormflow. The half-life of imazapyr in water is about 4 days. **Additional Mitigation:** *Do not apply on irrigation ditches. Do not apply where runoff water may flow onto agricultural land. Do not apply to water or wetlands.*

Soils: Imazapyr is strongly absorbed by the soil, usually only found in the top few inches. It is soil active with soil mobility being relatively low. Imazapyr can remain in the soil from 6 months to as long as 2 years. Exposure to sunlight assists with breakdown in soil as well as soil microorganisms.

Triclopyr

Solubility: moderate to low

Potential For Leaching Into Groundwater: The potential for leaching depends on the soil type, acidity and rainfall conditions. Triclopyr should not be a leaching problem under normal conditions since it binds to clay and organic matter in soil. Triclopyr may leach from light soils if rainfall is very heavy.

Surface Waters: Sunlight rapidly breaks down triclopyr in water. The half-life in water is less than 24 hours.

Soils: Triclopyr is not highly mobile in soil. It is rapidly broken down by soil organisms.

Temporary roads associated with silvicultural activities are also known to potentially affect water quality, water quantity, channel morphology, and downstream designated uses. Temporary roads pose the greatest threat to the sustainability of the downstream designated uses. The effects of the 2 miles of temporary roads may be evident for the entire two years of their recovery period. State Best Management Practices as well as Forest-Wide standards will be applied to these roads as mitigation measures. All temporary roads should be closed immediately after completion of the proposed action.

Prescribed burning, although not proposed under this alternative, is a connected action and will be analyzed in the cumulative effects. Direct effects from prescribed burning and under burns are potential changes in ground cover and increase in the hydrophobicity (water repellency) of a soil as well as erosion from plowed fire lines (VM EIS, Appendix B; Shahlaee et al., 1991). The severity of indirect effects depends on the intensity of the fire. Indirect effects are potential increase in sediment, storm flows and nutrient levels in the water column (VM EIS, IV-114). The erosion coefficient for prescribed burning is approximately 0.384 tons per acre per year. The amount of plowed lines will be minimized by using natural and existing fire breaks where possible. State Best Management Practices as well as Forest-Wide standards will be applied to these plowed lines as mitigation measures. The effects of prescribed fire should be minimal.

3.1.1.3 Cumulative Effects on Water Resources

Current land use for all segments of the water, including agricultural practices and industrial and private timber production along with the proposed actions and other influences, were analyzed using the previously established Clingenpeel Model to determine the impacts of cumulative effects. The results of the model indicate that there would be minimal increases in sediment yield but only on a very short temporal scale, less than six years, for the Proposed Action. (See Figure 3.1.1.3-1 below)

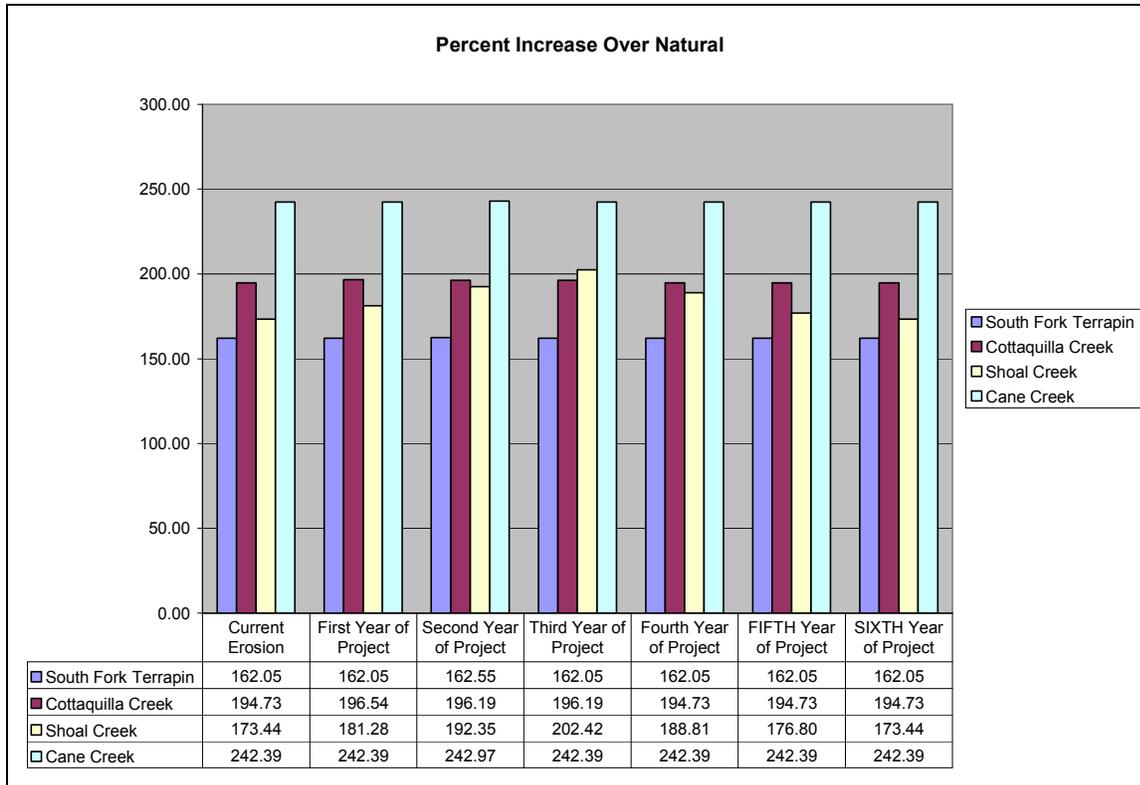


Figure 3.1.1.3-1 Cumulative Impacts on Water Resources in the Project Area

Although the cumulative effects analysis indicates that there will be only slight increases in sediment yield over a short period of time, it is important to note that the majority of the proposed activities are concentrated in the northern most section of the Shoal Creek Watershed. Implementation of State BMP's and Forest Wide Standards are increasingly essential to ensure the continued support of downstream designated uses when activities are concentrated in this manner.

3.1.2 Soil Resources

3.1.2.1 Affected Environment

Soils within the boundaries of the proposed project are located primarily in the Quartzite and Talladega Slate Ridge Subsection. The Quartzite and Talladega Slate Ridge Subsection is divided into four LTAs: Talladega Hills, Horseblock Mountain, Hollins East, and Cheaha Mountain. These four LTAs make up a large portion of the Forest ranging from the town of Heflin south to the town of Sylacauga. The proposed project is located in the Horseblock Mountain LTA. Horseblock Mountain LTA geology is derived from slate and phyllite. Soils weathered into loamy soils containing silt and clay. Land surface form ranges from upland hills of moderately low to moderate relief. Overstory vegetation is pine-oak. Overstory vegetation is primarily xeric oak-pine.

An Order 2 Soil Resource Inventory of the Talladega Division, Talladega National Forest at a 1:24,000 scale identified 4 soil map units within the proposed project boundary and is listed

below. Three primary soil series are identified within the map units listed below. Inclusions of similar and dissimilar soils can be found within each map unit identified. An estimated total of 20 acres of floodplain soils are identified for the action alternative. Stand layout, prior to implementing management prescriptions, will be adjusted to eliminate management activities within any floodplain soils and on slopes exceeding 40 percent. Maps and soil descriptions are available for viewing at the Ranger Station Office.

Soil Resource Inventory Map Units

- Fruithurst-Chewacla Complex, 2-30% slopes
- Fruithurst-Tallapoosa Complex, 6-15% slopes
- Fruithurst-Tallapoosa Complex, 25-40% slopes
- Tallapoosa-Fruithurst Complex, 40-65% slopes

Fruithurst soils average surface horizons 4 to 8 inches thick over loam and silt loam subsoils. The shallow Tallapoosa soils have surface thickness ranging from 2 to 4 inches over subsoils consisting of clay loams. Chewacla soils are floodplain soils that have sandy loam to silt loam surfaces and silt loam to silty clay subsurfaces.

3.1.2.2 Direct / Indirect Effects

Disturbance of soils from management practices involving timber harvest, site preparation and reforestation will result in some form of physical, chemical and biological change. Direct effects to the soil resources are changes/loss of soil organic matter content, soil erosion, soil compaction, and nutrient leaching and/or displacement. Indirect effects are accelerated weathering, loss of soil as sediment, alteration of organic matter formation, and alteration of soil permeability/water infiltration. A detailed discussion of direct, indirect, and cumulative effects of vegetative management and associated treatments and prescribed fire on the soil resource is presented in the **1999 Longleaf Restoration Final Environmental Impact Statement (pages 22-24)** and is hereby incorporated into this document. In addition, a detailed discussion, of direct, indirect and cumulative effects of herbicides, prescribed burns and mechanical methods on soil productivity are presented in the Vegetative Management-Final Environmental Impact Statement (VM-FEIS). No additional mitigations are required beyond the Standards and Objectives specified in the LRMP.

Alternative 1: There would be no potential for any direct, indirect, or cumulative effect upon the soil resource as a result of implementing this alternative. Effects from existing roads, implementation of the Talladega Restoration EIS and implementation of other small scale land practices would continue to occur. Some opportunities to improve watershed conditions through implementing watershed improvement projects and road improvements would be forfeited.

Table 3.1.2-1 Project Area Soils Data.

Soil Name (Map Unit Symbol #)	Slope (%)	Compaction Hazard	Erosion Hazard
Fruithurst-Chewacla Complex (2)	2-30	Moderate/Severe	Moderate/Severe
Fruithurst-Tallapoosa Complex (3)	6-15	Moderate	Slight/Moderate

Fruithurst-Tallapoosa Complex (4)	25-40	Moderate	Moderate
Tallapoosa-Fruithurst Complex (5)	40-65	Moderate	Severe/Moderate

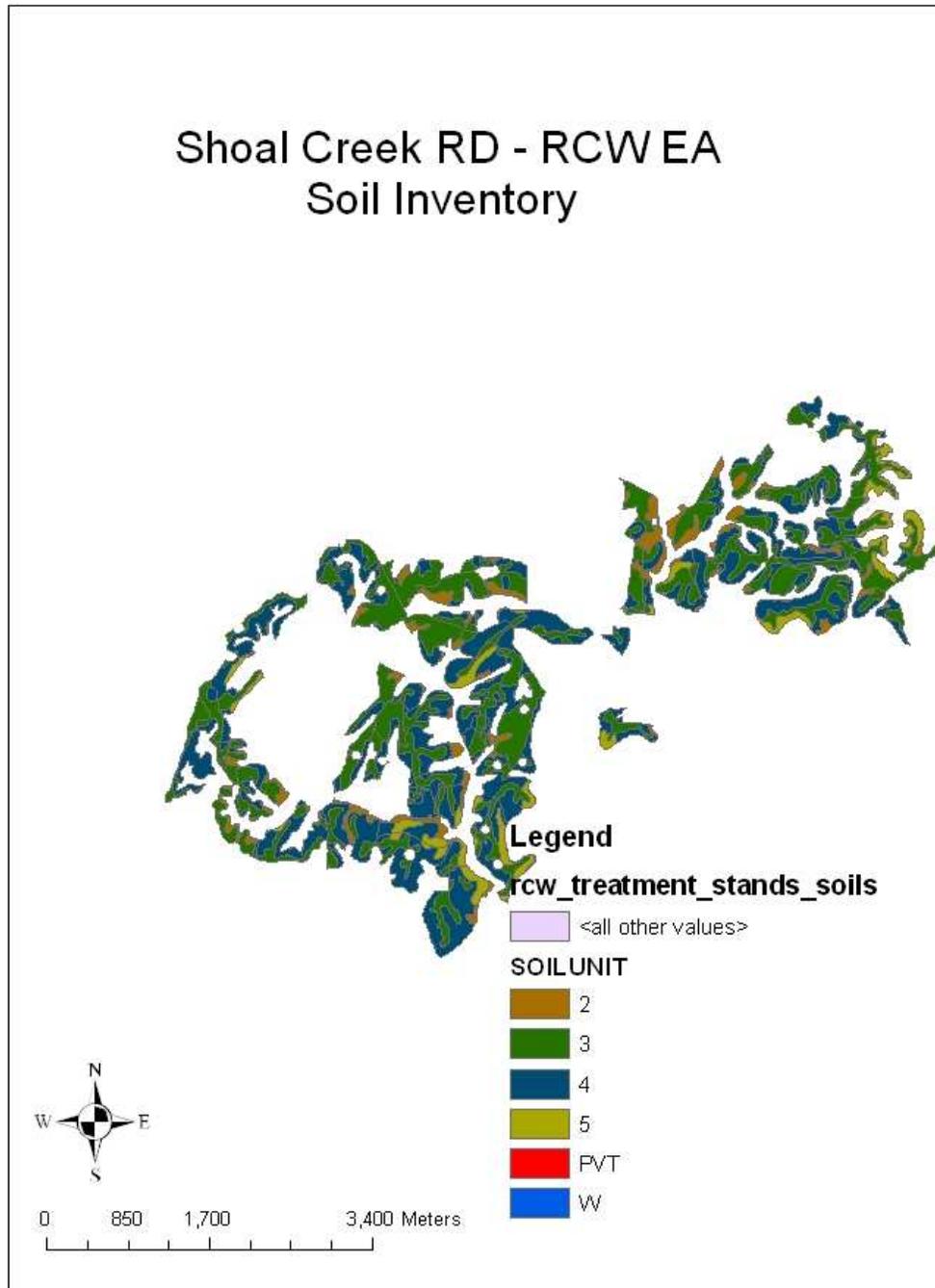


Figure 3.1.2-1 Soils Map of Project Area.

Alternative 2: The potential risk for a reduction in soil productivity from this alternative is slight. This alternative proposes 536 acres of clear cutting followed by site preparation using herbicides, 1,308 acres of thinning, 74 acres timber stand improvement, 44 acres pre commercial thinning, and 2 miles temporary road construction. The current prescribed burns will continue on a 3 year rotation.

Almost all of the acreage to be thinned and clear cut has a moderate rating for soil compaction. Approximately 20 out of 163 acres have a severe potential for soil compaction (Figure 3.1.2-2: Soil Compaction Hazard). The soils having a severe soil compaction hazard rating are located within and adjacent to riparian areas where soil moisture is usually very high 9 months of the year. These areas will be excluded during sale layout. The soils rated moderate for potential compaction and their location is filed at the Shoal Creek Ranger District office as part of the project files. Monitoring of timber salvage from the effects of Hurricane Opal (1996) and Monitoring Timber Sales on the Talladega Division (1993, 1994, 2005 and 2008) found soil compaction to be minimal off roads and primary skid trails. Compaction was determined by the percentage of tire rutting. Tire ruts observed averaged less than 6 inches and were over short distances of less than 100 feet. Tire rutting was over short distances as a result of enforcement of sale contract standard and guidelines. Soil compaction can be reduced by operating equipment during dry ground conditions. Soil compaction has been found to be the most detrimental on roads and skid trails (primary and secondary trails). Thinning involves fewer passes with equipment, usually less than two, compared to even-age and uneven-age harvests. Thinning, besides involving fewer passes, uses less skid trails. Implementation of mitigating measures such as ripping/disking, fertilizing and revegetating, can reduce the effects of soil compaction (improve soil bulk density).

The majority of the acreage to be thinned, 1,762 acres, has a slight/moderate or moderate rating for soil erosion. Approximately 302 acres have a moderate/severe potential for soil erosion (Figure 3.1.2-3: Soil Erosion Hazard). The soils having a severe soil erosion hazard rating are located on steep side slopes. Slopes exceeding 40 percent will be excluded from the sale area during sale layout.

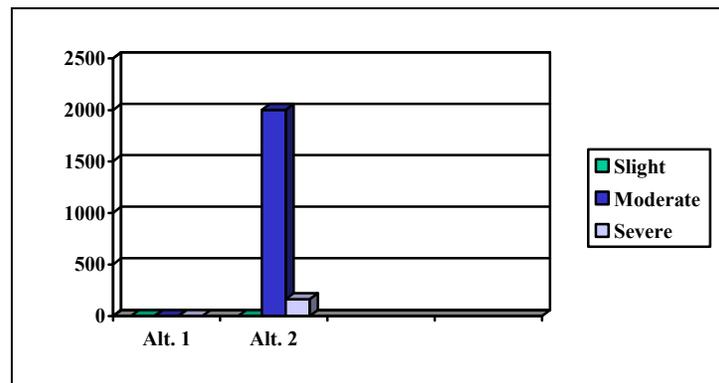


Figure 3.1.2-2: Soil Compaction Hazard

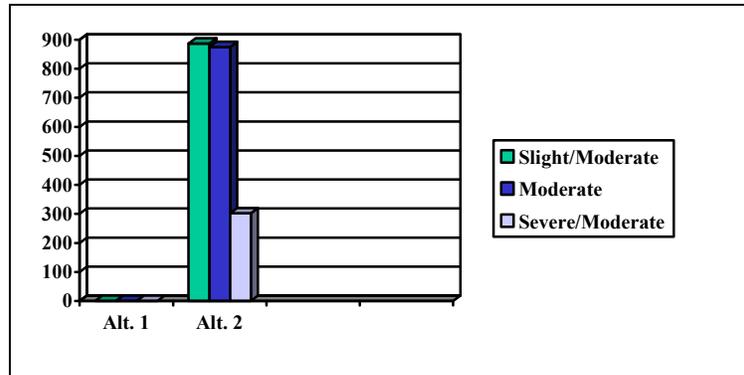


Figure 3.1.2-3: Soil Erosion Hazard

Soil erosion can be expected under high rainfall and road use if standards and objectives are not followed. Even-age/uneven-age harvest systems have a higher road frequency use and usually require more miles of roads than thinning. Other than roads, site preparation usually accounts for most of the erosion potential. Thinning also does not require site preparation since no trees are being planted. Monitoring of even-age harvests and thinning on the Talladega Division, Talladega National Forest, (1993,1994, 2005, 2008) has found soil exposure off roads and skid trails to be minimal, usually resulting from equipment tire slippage and dragging of tree stems. Soil erosion on these areas has been found to occur over short distances with soil being trapped by surface debris. Revegetation has been found to occur over a two year period returning the site back to non-erosive conditions.

Soil erosion will occur primarily from temporary roads accessing stands and from primary and secondary skid trails. Soil productivity is reduced on roads and skid trails primarily from the loss of organic matter and portions of the surface soil horizon. Proper road locations on a landscape, soil interpretations and design level followed by placement of standards and objectives for erosion, water control, and revegetation will result in acceptable soil erosion rates and will assist with restoration of site productivity.

The 74 acres timber stand improvement and 44 acres pre commercial thinning will have minimal to no effect on the soil resource. Work will be performed using hand tools to remove brush and thin young pines.

The herbicides that would be used with this alternative have no known effect on soil physical and chemical properties. Herbicides may affect soil productivity through biotic impacts, soil erosion, and nutrient leaching (Veg. Mgmt FEIS volume 1, pIV-90). Resulting changes in soil organisms are due more to physical than chemical effects (Mayack and others 1982). Where adverse effects have been observed, herbicide concentrations exceeded those measured under actual operational conditions (Fletcher and Friedman 1986). There is, however, a general consensus that herbicide usage at normal forestry rates does not reduce the activity of soil micro-organisms. There is no evidence that the herbicides currently in forest management in the South produce any adverse effects on site and soil productivity. There is evidence that herbicide usage as a silvicultural tool can increase site productivity. Herbicides do not disturb the soil surface, thus the soil erosion is limited to natural processes or to the method of application. Existing organic layer(s) are left

intact after herbicide use which mitigates rainfall impact and promotes water infiltration. Examining erosion from a variety of site preparation techniques in the South, it is evident that herbicide use results in sediment yields more similar to undisturbed watersheds than mechanically prepared ones. Neary and others (1986) found erosion rates of 170 kg/ha on herbicide treated plots compared to 67 kg/ha on control plots. Douglas and Van Lear (1983) found erosion rates of 44 kg/ha on burned plots versus 39 kg/ha on control plots. Both experiments were conducted on Piedmont soils with Neary and others having plots located on steeper terrain. In the upper coastal plain Beasley and others (1986) found erosion rates for shear and windrow to be 1,005 kg/ha compared to 205 kg/ha for herbicides. The control plot erosion rate was measured at 147 kg/ha. Nutrient leaching after herbicide use has been little studied. Based on nitrate losses found by Neary, Bush, and Douglass (1983), nitrogen losses are less than 10 lbs/ac due to suppression of vegetative uptake. Losses of other less mobile nutrients are negligible.

Two herbicides are proposed for use in this project; imazapyr and triclopyr. Triclopyr is not soil active. Triclopyr is not highly mobile in the soil and is absorbed primarily by plant leaves and moves readily throughout the plant. It is rapidly broken down by soil organisms and ultraviolet light, persisting an average of 30-56 days depending on soils and weather. Imazapyr is soil active with soil mobility being relatively low. Imazapyr is strongly absorbed by the soil, usually only found in the top few inches. Imazapyr can remain in the soil from 6 months to as long as 2 years. Exposure to sunlight assists with break down in soil as well as soil microorganisms.

Soil compaction and soil erosion from fire management is primarily from fire line construction. Prescribe burning for wildlife, fuel reduction, mid story reduction, or other purposes other than site preparation, following burning plans and mitigation measures, usually are low intensity burns that result in slight to very slight soil exposure, surface litter can be consumed with duff and organic matter minimally affected to unaffected. The highest potential for soil erosion occurs on constructed fire lines where soil exposure may be necessary to maintain control of the fire.

3.1.2.3 Cumulative Effects

The potential risk for cumulative effects of soil erosion and soil compaction on site productivity is slight for acres to be clear cut, thinned, site prepared by herbicide, and prescribed burned. Ground disturbance is expected to be minimal.

No permanent road construction is scheduled for this project. Use of existing road corridors will not result in increases in acreage taken out of productivity. An average of 10% of the land base is dedicated to transportation for management of resources. Monitoring of timber sale activities on the Talladega Division, Talladega National Forest (1993, 1994, 2005, 2008) has shown that transportation development for silvicultural management is well within the 10% limits. Repeated prescribed burns of the same site on a 3 year or less rotation can have a negative cumulative effect on site productivity. Cumulative effects are generally expected to be short term, lasting one year for thinning and three years or less for clear cutting and prescribed burn after application of soil restoration standards. On sites where vegetation management and prescribed fire are scheduled within the same three year period, recovery of site productivity may be as long as five years as a result of an expected longer time period for re-vegetation to occur.

Restoration of temporary roads, loading decks, and skid trails will restore soil productivity within one to three years. The potential for the highest soil erosion and compaction in this alternative peaks between the first and second year after implementation.

Portions of stands have slopes exceeding 40%, particularly soil map unit 5. Those portions having sustained slopes exceeding 40% need to be excluded from the stands during stand layout or non conventional logging equipment is to be used (reference RLRMP, page 2-11, standard FW-7).

3.1.3 Vegetation and Wildlife, Including Proposed, Endangered, Threatened, and Sensitive (PETS) Species

Management Indicator Species (MIS)

Affected Environment

The general wildlife community that occurs in the Sweetwater-Coleman Lake project area is typical of the Alabama Ridge and Valley and Piedmont physiographic region, with the exception of the red-cockaded woodpecker and large number of federally-listed aquatic species associated with the Shoal Creek system. Because it would not be feasible to monitor the effects of management on all wildlife species, a set of species were chosen to serve as “management indicators”. MIS are selected to monitor the effectiveness of the Forest Plan direction in meeting the desired future conditions and plant/animal outcomes. Population changes in these selected species are believed to indicate the effects of management. The MIS chosen for discussion with this project are the:

- **red-cockaded woodpecker** (indicator for mid- and late-successional pine and pine-oak forests),
- **northern bobwhite quail** (indicator for meeting hunting demand), and
- **prairie warbler** (indicator for creating and/or maintaining early successional forests).

3.1.3.1 Red-cockaded woodpecker Background and Existing Conditions

The red-cockaded woodpecker (*Picoides borealis*) is a federally listed endangered bird endemic to open, mature and old growth pine ecosystems in the southern United States. The RCW is a cooperative breeder, living in family groups typically consisting of a breeding pair and one or more helper males. The RCW excavates cavities in live pine trees that serve as nesting/roosting sites. The RCW utilizes the ability of live pines to produce large amounts of resin to create a barrier to snakes, one of the primary predators.

Red-cockaded woodpeckers require open pine woodlands with large old pines for nesting and roosting habitat. Large old pines are required as cavity trees because the cavities are

excavated completely within inactive heartwood. Old pines are preferred as cavity trees because of the higher incidence of heartwood decay. Cavity trees must be in open stands with little or no hardwood midstory and little overstory hardwoods. Red-cockaded woodpeckers also require abundant foraging habitat, which consists of mature pines with an open canopy, low densities of small pines, little or no hardwood and pine midstory, few overstory hardwoods, and abundant native grasses and forbs.

Bird point surveys are conducted on an annual basis to assess the presence and absence, frequency of occurrence, and habitat conditions of the Shoal Creek Ranger District. In addition, monitoring is conducted in RCW clusters and suitable habitats to determine numbers and status of breeding pairs, annual nesting success, nesting productivity, and survival. Further monitoring is conducted through annual banding of hatch-year birds and translocation monitoring.

Currently, there are less than 6,000 red-cockaded woodpecker family groups in the southern United States. In Alabama, fewer than 200 groups remain with most of these located on National Forest lands. On the Shoal Creek Ranger District, there are currently sixteen active clusters, up from two in 1988. Pre-1988, little information is available on the population status of RCWs on the District. However, the presence of natural cavity trees spread across the District indicates that it was once more common. Four active clusters are located within the project area. Additional active clusters and recruitment clusters are located near the periphery of the project area. These clusters are made up of old natural cavities and artificial inserts.

Environmental Effects

Alternative 1-No Action

There would be no direct effects to the RCW under this alternative since no management activities associated with this project would occur. However, management under other signed decisions would continue to maintain existing habitat. Indirect effects would occur as the canopy continues to close in plantations. Canopy closure would continue to decrease diversity in the understory and reduce the food base, insects, available to the RCW. Since no thinning treatments would be conducted, the stands would not provide the open “park-like” conditions required by this bird. No restoration treatments would be performed and would not provide future habitat for the RCW. Midstory removal and timber stand improvement practices would not be conducted in association with this project. Midstory removal is an important tool in providing suitable RCW habitat, particularly when fire suppression has allowed stems to reach a size where fire is unable to control.

Some actions, such as routine road maintenance, prescribed burning, suppression of southern pine beetles, and other timber projects would continue under separate analysis. Of these actions, prescribed burning and beetle epidemics have the greatest potential to impact the RCW. Prescribed burning, on a regular schedule, could keep hardwood midstory encroachment to a level that would provide limited habitat for the RCW. Over-stocked pine stands, although not optimal habitat for the RCW, provide some foraging habitat for

the RCW. These stands would be at increased risk to southern pine beetles, and if infested, would provide less acreage/habitat for foraging.

Alternative 2-Proposed Action

There would be no direct effects to the RCW since timber operations would be conducted in accordance with recovery plan standards, during daylight hours, and outside of the breeding and nesting season within or near cluster sites. Some treatments may temporarily disturb some habitat, but these effects are considered minor since only a portion of the area would be treated at any one time.

Thinned stands would create or move the structure closer to conditions required by the RCW. Over time, native grasses and forbs will colonize the bare ground, and in combination with fire, will provide the appropriate understory structure that supports the prey base of the RCW. Thinnings will be conducted from below, meaning that smaller, suppressed trees would be removed and larger trees left untreated. Restoration treatments would not provide immediate habitat for the RCW; however, these areas would provide habitat within 30-50 years. Other proposed treatments, including midstory removal and TSI, would allow more sunlight to reach the ground and promote diversity in the understory. If the habitat created is not maintained with frequent fire, it would be expected to be ephemeral in nature.

Foraging habitat, within ½ mile, would be impacted for four active RCW clusters under the proposed action. The resulting actions would improve habitat structure and increase the amount of habitat available for family groups and allow for expansion.

Table 1. Acres of suitable foraging habitat for the RCW-Alternative 2

RCW Cluster	Current Suitable Foraging Habitat (Acres)	Foraging Habitat w/ Alt. 2 (Acres)
39-1	116	131
32-4	81	86
33-5	88	91
30-2	67	79

Acres treated with thinning, midstory removal, and TSI would create more preferred habitat for the RCW. After the proposed actions are completed there would be additional acres of improved habitat for the RCW on the Shoal Creek Ranger District. In restoration treatment areas, the use of herbicides for site-prep will allow planted longleaf a chance to get established and should provide suitable habitat in 30+ years.

3.1.3.2 Northern bobwhite quail Background and Existing Conditions

The northern bobwhite quail (*Colinus virginianus*) is a game bird species that is closely associated with early successional plant communities (Spears et al. 1993). Throughout its

range, the bobwhite provides important ecological, social, aesthetic, recreational, and economic values (Burger 2001). Overall, the population of bobwhite quail within its range has declined significantly in the past decades. Habitat degradation has been attributed for this decline. Quail primarily feed in fields and open forests. Their diet is mainly vegetative and composed primarily of small fruits, seeds, and green forage. Researchers have found that quail require a variety of cover types for different functions and activities throughout the year (Yarrow and Yarrow, 1999).

Year-round access to edge plant species in close proximity to cover are key factors for the success of this species. Northern bobwhite quail would not survive in mature closed canopy forests with no ground cover. In forested landscapes, the mid and overstory influence habitat suitability because these components affect groundcover composition through interception of light, water, and nutrients (Burger, 2001). Quality habitat for bobwhite quail in forests within its range can be maintained by controlling midstory and groundcover with prescribed fire on a strategic rotation (1 to 3 years). Like many wildlife species, bobwhite quail respond favorably in habitats with more diversity.

The bobwhite quail is monitored through bird point surveys that are conducted yearly, during May, to assess the presence or absence, frequency of occurrence, and habitat conditions across the Shoal Creek Ranger District. This survey detects breeding territories of birds. Additionally, bobwhite quail fall covey counts have been conducted the past two years and would provide a baseline across several habitat types.

Breeding bird survey data documents a 4% per year decline in bobwhite quail abundance in Alabama since the 1960's. In the mid 1980's to 1990's, decline accelerated to 9% per year. The quail population in Alabama is less than 20% of what it was when surveys began in 1966. On the Shoal Creek Ranger District, quail have experienced similar declines. On approximately 60 permanent bird points surveyed yearly on the District, the detection of quail across all habitat types has decreased from 14% to 2% of points surveyed. However, fall covey call counts indicated approximately 1 covey/38 acres in good quality quail habitat in 2004 and 1 covey/34 acres in 2006.

Environmental Effects

Alternative 1-No Action

There would be no direct effects to northern bobwhite quail under this alternative since no management activities would occur. Prescribed burning would continue under separate analysis and may maintain small pockets of suitable habitat. However, at a larger scale, canopy closure throughout the project area would not allow appropriate vegetation responses from fire alone to provide large areas of suitable habitat for quail.

Indirect effects would occur mostly as the canopy of stands continues to mature. As the stands age, the canopy would diminish the ability of herbaceous vegetation (i.e., grasses and forbs) to thrive. Habitat for disturbance-dependent species, such as quail, would occasionally benefit as natural openings were created. Natural disturbance could include

tornadoes, southern pine beetle spots, or wildfires. These disturbances would open an area and create habitat diversity. The benefit from these natural events would vary in degree of significance based on size and distribution.

Overall, habitat for this species would become less desirable or decrease under the no action alternative; therefore, it is anticipated that the quail population would continue to decrease within this area.

Alternative 2-Proposed Action

Generally, there would be no direct effects to the bobwhite quail since this species would be able to move away from treatment activities. However, it is possible that treatment activities administered during the nesting period could destroy nests and result in temporary reductions in productivity. These effects are considered minor since only a portion of the area would be treated at any one time and risk to annual productivity is limited to the spring nesting and brood-rearing period.

Thinned stands, over time, would result in habitat that is preferred by bobwhite quail. Restoration areas would provide ideal habitat for quail for several years after treatment. The removal of trees would open the stand and allow more sunlight to reach the forest floor and increase diversity of groundcover. If thinned stands are kept open by periodic burning, they would provide habitat preferred by this species for a longer time. Periodic prescribed burning in these more open stands would allow and encourage the establishment of native grasses and forbs and provide more cover and food.

Overall, habitat for this species would become more desirable and increase under this alternative. The quail population would be expected to increase along with increasing suitable habitat.

3.1.3.3 Prairie warbler Background and Existing Conditions

The primary habitat of the prairie warbler (*Dendroica discolor*) is early-successional openings or corridors in forests, or more optimally stable shrublands. Suitable habitats for this species include open pine woodlands with sparse woody vegetation and shrubs. In the absence of naturally occurring fires, where pine or deciduous forests are the climax vegetation, active management (i.e., prescribed burning, thinning, and clearcutting) is necessary to create the early successional, shrubby vegetation required by this bird. As single areas cannot provide continually favorable habitat, a landscape should be managed to provide a mosaic of sites in different successional stages.

The prairie warbler is monitored through bird point surveys that are conducted yearly to assess the presence or absence, frequency of occurrence, and habitat conditions across the Shoal Creek Ranger District.

According to breeding bird survey data, prairie warbler declined on average 2.15% per year from 1966-1992. On approximately 60 permanent bird points surveyed yearly on the

District, the detection of prairie warbler across all habitat types has decreased from 64% to 50% of points surveyed.

Environmental Effects

Alternative 1-No Action

There would be no direct effects to the prairie warbler under this alternative since no management activities would occur. Most of the indirect effects that would occur relate to natural disturbances that have potential to occur within the project area. These could include wildfires, tornadoes and other devastating wind events, and southern pine beetle epidemics. These natural disturbances would occasionally open up an area and provide habitat diversity across the landscape. The impacts of these types of disturbances would vary in degree of significance because of the limited size and distribution of areas opened by natural disturbances. Overall, habitat for this species would become less desirable or decrease under this alternative because open pine stands would not be maintained.

Alternative 2-Proposed Action

Generally, there would be no direct effects to this species since it would be able to leave the area once disturbances began. However, it is possible that if activities of the proposed action are carried out during the nesting season, individual nests could be impacted. These effects are considered minor since only a portion of the project area would be treated at any one time. In addition, treatments would have to occur at the exact time that this species is most vulnerable and also occur over successive years and on a larger scale to have substantial impacts. Based on past projects, this extent of impact is highly unlikely.

Thinned stands and improved vegetative structure would result in better foraging habitat for the prairie warbler. Restoration treatment areas would provide suitable habitat for several years after treatment. If thinned stands are kept open by periodic burning, this would continue to be preferred foraging habitat by this species for the long-term. If this habitat is not maintained with fire on a regular basis, the quality of this woodland type habitat would likely be ephemeral in nature.

Acres treated with thinning, TSI, and midstory removal will create more suitable habitat for the prairie warbler.

MIS not chosen for Sweetwater / Coleman Lake RCW Habitat Improvements Project:

Wood Thrush-indicate management effects on wildlife species dependent upon mature forest interior conditions.

Pileated woodpecker-indicate management effects on snag dependent wildlife species.

Acadian flycatcher-indicate management effects within mature riparian forest community.

Swainson's warbler-indicate management effects within early successional riparian forest community.

White-tailed deer-indicate management effects on meeting hunting demand for this species.

Eastern wild turkey-indicate management effects on meeting hunting demand for this species.

Hooded warbler-indicate management effects on mesic deciduous forest and mesic oak and oak-pine communities.

Scarlet tanager-indicate management effects on xeric oak and oak-pine forest communities.

3.1.4 Visual Resources

3.1.4.1 Affected Environment

A large portion of the project area is in areas classified as High or Medium for Scenic Integrity Objectives, as well as 1 or 2 for Scenic Class. The Pinhoti National Scenic Hiking Trail, the Coleman Lake Recreation area, and their immediately surrounding stands comprise the High scenic integrity and scenic class 1 areas. The medium scenic integrity objective and the scenic class 2 areas are mainly along the open forest roads, horse trails, and the Warden Station Horse Camp. The general forest area beyond these specific areas is generally considered to have a scenic class 3 and a low scenic integrity objective.

3.1.4.2 Direct / Indirect Effects

Alternative 1: No Action (Current Management)

The No Action Alternative proposes no new activities that would have any effect on visual resources.

Alternative 2: RCW Habitat Restoration (Proposed Action)

Visual quality may be impacted by the presence of harvesting equipment during the three year contract period for each of the three timber sales associated with this project. This equipment may be visible from main roads during the normal operating season of March to November. This would be less of a concern along the horse trails as they will likely be re-routed or closed during operations. This would also be of little concern to people using the Coleman Lake Recreation Area, as harvesting equipment would not be in this area during the portion of the year that the recreation area is open.

As a result of harvesting operations, which decrease stand density and remove some of the midstory component, especially in thinned stands, the distance that one can see may be increased. This would allow for greater wildlife viewing experiences for hikers and horse riders, as well as increase visual abilities for hunters. The nature of the treatments, especially the restoration treatment, will likely increase species richness of wildlife, and in turn increase viewing opportunities.

Visitors will notice a browning of understory vegetation for a short period of less than six months, after herbicides are applied as part of the site preparation process between harvesting and planting. Some overstory trees will still be present in these stands and have green foliage. In addition, during the winter after herbicide application, the treated areas will be replanted with new pine seedlings, which will quickly (1 – 2 years) return the green appearance to the stand.

Visitors may notice a change in stand structure when passing through the forest. Some areas will have a majority of the trees removed, such as in a restoration treatment area, while others will just have fewer trees per acre, such as in the thinning treatment areas. This appearance will likely be similar to other areas in the general vicinity to the project area, and therefore will not be greatly different from the rest of the forest.

3.1.4.3 Cumulative Effects on Visual Resources

Currently there are no other timber sales in the immediate vicinity of the project area, which would alter the appearance of the landscape. In 2007, within 1 mile of the project area, there were approximately 100 acres thinned, and 37 acres of restoration treatment. The 37 acres of restoration treatment, was replanted with longleaf pine seedlings in December 2007. In the next 10 years there will likely be timber sales to the south and southwest of the project areas, but these will be in areas with lower scenic class and scenic integrity objectives. Prescribed burning will also take place in the project area as well as in the remainder of the general forest area on a 3 to 5 year rotation. This prescribed burning may leave the ground and some of the lower portions of tree trunks with a black appearance, but the ground vegetation will quickly resprout and within a year it will be difficult for the untrained eye to know that prescribed burning occurred in a given area.

3.1.4.4 Mitigations

The following mitigations will further aid to minimize any impacts to visual resources within the project area. See figure 3.1.4.4-1 below for locations of the scenic classes in the project area.

Mitigations for stands surrounding the Pinhoti National Scenic Hiking Trail include the following: 1) Only thin the trees in the 100 foot corridor on either side of the trail; 2) In contract, specify there will be no skidding on the trail; 3) No new logging roads paralleling the trail within 5 chains of the trail; 4) Infrequent perpendicular crossings of the trail are ok at locations agreed upon by contractor and USFS; 5) Specify in contract that trail will be rehabbed if it is skidded over and any damage occurs; 6) Leave trees for trail markings; 7) Any slash that is generated within 50 feet of the trail will be removed; 8) Any slash that is generated within 50 – 100 feet of the trail will be lopped and scattered so that it is less than 12 inches high; 9) Unit boundary markings will be applied so that they are not visible within 100 feet of travel routes; 10) Log

landings and skid trails are located out of view of trail to avoid bare mineral soil observation from trail.

Mitigations for stands surrounding the horse trails include the following: 1) Specify in contract that trails will be rehabbed if it is skidded over and any damage occurs. 2) In contract, specify that there will be no skidding on the trails; 3) Unit boundary markings will be applied so that they are not visible within 100 feet of travel routes; 4) Slash is removed, burned, chipped, or lopped to within an average of 2 feet high, when clearly visible within 100 feet on either side of travel routes; 5) Stems are cut to within 6 inches of the ground in the immediate foreground; 6) Re-route or close horse trail during periods of logging for safety of the horse riders; 7) Leave trees for trail markings; 8) Only thin trees in the 50 feet corridor on either side of the trail; 9) No slash should be left in the horse trail or piled alongside the trails.

Mitigations for stands in areas with moderate scenic integrity objectives include the following: 1) Flowering and other visually attractive trees and understory shrubs are favored when leaving vegetation; 2) The visual impact of log landings is blended so that they remain subordinate to the existing landscape character in size, form, color, and texture; 3) the openings created by the cut boundaries are organically shaped; 4) Rehabilitate any physical effects on trails; 5) Slash is removed, burned, chipped or lopped to within an average of 2 feet high, when clearly visible within 100 feet on either side of travel routes; 6) Unit boundary marking is applied so as to not be visible within 100 feet of travel routes; 7) Log landings, roads, and bladed skid trails are located out of view to avoid bare mineral soil observation from concern level 1 routes. The mitigations for stands with high scenic integrity are the same as for the moderate with the addition of the mitigation that stems are to be cut to within 6 inches of the ground in the immediate foreground.

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