USDA

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Department of
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Forest
Service

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Environmental Assessment

Telogia Analysis Area

Apalachicola Ranger District, Apalachicola National Forest
Liberty County, Florida

T2S R6W

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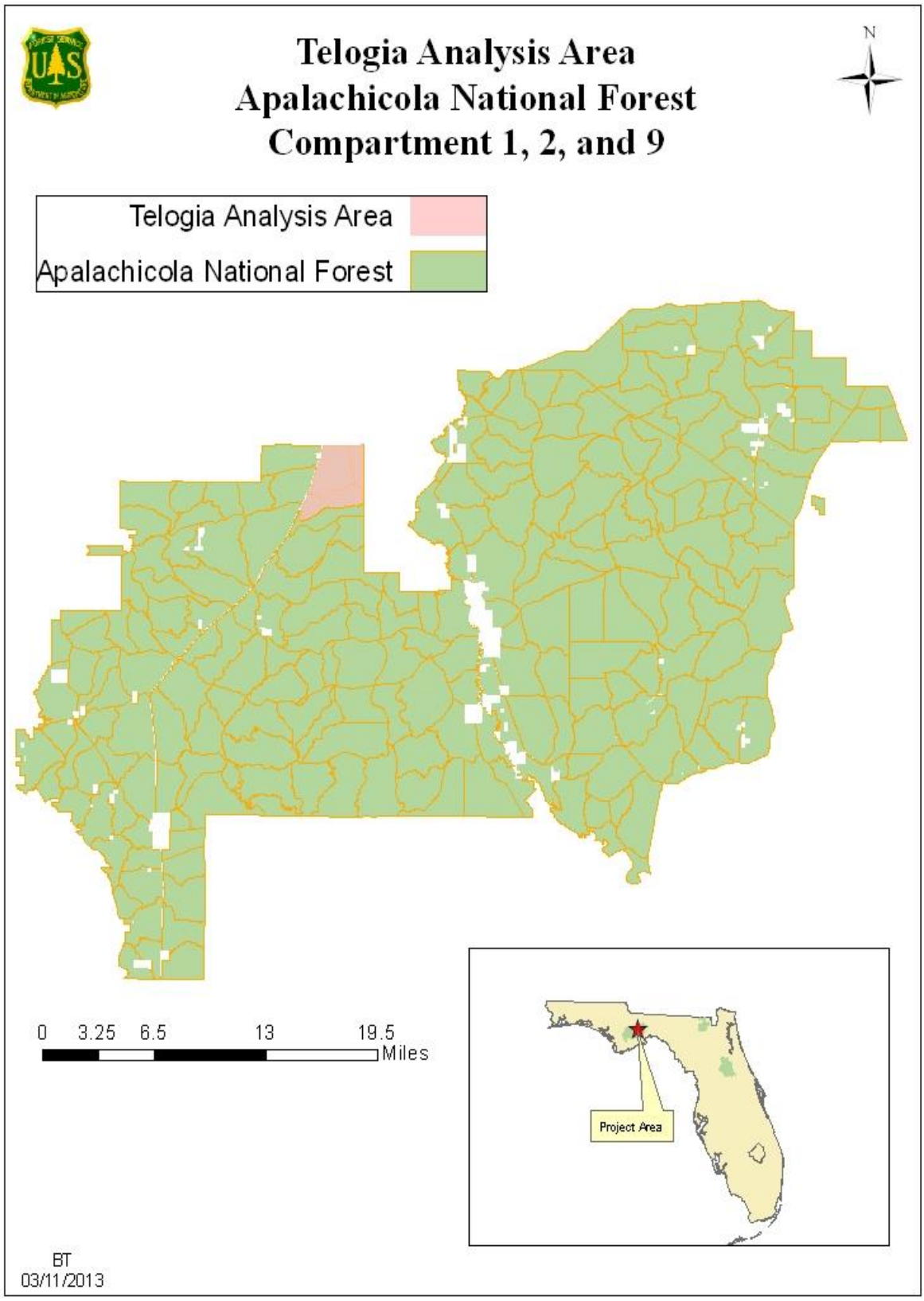
Telogia Analysis Area
Apalachicola National Forest
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Apalachicola National Forest
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SUMMARY

The Forest Service proposes to treat approximately 1,728 acres of forestland in the Telogia Analysis Area. The proposed action would include treatments such as clearcuts of offsite slash pine, thinning of slash and longleaf plantations, groundcover restoration, applying herbicides for site preparation and pine release, hardwood control, and planting of site appropriate longleaf pine species. Connected actions necessary to implement the proposed actions would include landline maintenance, road construction, reconstruction, or maintenance. Refer to chapter 2 of this document for a detailed list of proposed actions. These actions are needed to move the analysis area from its existing condition to the desired condition described in the Revised Land and Resource Management Plan for the National Forest in Florida (Forest Plan). This project is not authorized under the Healthy Forest Restoration Act (HFRA). In addition these actions would aid in maintaining a healthy forest and improve future red-cockaded woodpecker (RCW) habitat.

The Telogia Analysis Area is located in Compartments 1, 2, and 9 in Section 10, 11, 12, 13, 14, 15, 21, 22, 23, 24, 25, 26, 27, and 28 of Township 2 South, Range 6 West, Liberty County, Florida.

In addition to the Proposed Action this environmental assessment (EA) evaluated the following alternatives:

- Alternative A – No Action
- Alternative C – No Herbicide, which utilizes mechanical equipment and prescribe fire instead of herbicides for site preparation, groundcover restoration, pine release, and hardwood control.

Based upon the effects of the alternatives, the responsible official will decide whether or not to improve forest health and future habitat for proposed, endangered, threatened, and sensitive (PETS) species as described in the Proposed Action and whether to control hardwoods with herbicides or another method such as prescribed fire or by other mechanical means.

The implementation of this project would improve forest health, restore native tree species, improve PETS species habitat, increase the average diameter of trees, reduce the abundance of hardwood stems, and encourage a grassy herbaceous understory. These conditions would also provide for improved future RCW habitat.

INTRODUCTION

The Forest Service has prepared this EA in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

This EA is tiered to the Final Environmental Impact Statement Record of Decision for the Land and Resource Management Plan for the National Forests in Florida (1999) and The

Apalachicola Five Year Prescribed Burn EA. These documents are available for review by request from the District Office or online at the following web addresses:
Forest Plan http://www.fs.usda.gov/detail/florida/landmanagement/?cid=STELPRDB5269793
Prescribed Burn EA http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380

Background

The Telogia Analysis Area was entered on the 5-Year Vegetation Management Plan for the Apalachicola National Forest because it contains several stands that are candidates for longleaf conversion, thinning, hardwood control, soil stabilization and groundcover restoration. An interdisciplinary approach was used to evaluate areas and propose treatments to move the stands toward a desired future condition. These are the typical silvicultural treatments prescribed to move these stands toward the future desired condition for the Longleaf/Slash, Adaptive Management, RCW Management (7.1) Management Area.

Purpose and Need for Action

Chapter 2 of The Forest Plan outlines goals and objectives of the National Forests of Florida. One goal is to "Maintain or, where necessary, restore ecosystem composition, structure, and function within the natural range of variability in all ecosystems, with emphasis on longleaf pine-wiregrass ecosystem" (USDA 1999b, pg 2-3). The primary purpose of this proposal is to improve and/or maintain a healthy forest ecosystem by: thinning both longleaf and slash pine plantations to allow for an increase in radial growth and live crown ratio; removing offsite or stunted slash pine and restoring with indigenous longleaf pine seedlings; and reducing and controlling overabundant hardwood trees and brush to restore native herbaceous groundcover. Secondary benefits would improve future habitat for PETS species, such as the gopher tortoise, Indigo snake and the RCW through vegetation management. There is a need to reduce current stocking levels of stands within the project area to open the forest canopy and promote herbaceous groundcover growth and establishment. In addition a need exists to reintroduce native longleaf pine to site appropriate areas.

Existing Condition

The Telogia Analysis Area contains approximately 6,685 acres and is located entirely within the Longleaf/Slash, Adaptive Management, RCW Management, Management Area (MA. 7.1). A description of the management objectives and resource conditions in this MA is found in the Forest Plan (p. 4.37-4.40). The Forest Plan describes this management area as containing a mosaic of plant communities which vary depending on moisture conditions. Currently drier sites in the project area have both offsite mature slash stands that are densely stocked (average of 97 square feet of basal area per acre (BA)) and young slash plantations that are over-stocked or have become stagnated, exhibiting low live crown ratio and limited radial growth. These stands often have understories that consist of woody shrub species with sparse grasses and flowering plants. Wetter sites are predominately slash pine stands which are less tolerant of frequent fire than the upland, drier portions. Along drainages and in basins black gum, cypress, red maple, titi and wax myrtle are all occurring in the system with limited understory although some herbaceous species do occur in cypress flats.

On some wetter flatwoods sites longleaf pine is joined by slash, loblolly, and pond pines. In these areas understory vegetation is ideally dominated by native grasses and a wide assortment of flowering plants, though there is often overly dense patches of palmetto and gallberry present in the area. The palmetto /gallberry understory restricts longleaf regeneration and alters the historically low-intensity, rapid moving ground fires provided by the herbaceous component. This type fire is essential to the long term maintenance of healthy longleaf pine forest systems. As fine fuels become sparser, prescribed fire travels across fewer acres and hardwood species expand out from basins and drainages, occupying more space.

Within the compartments analyzed, there are approximately 149 acres of off-site slash pine plantations, 62 acres of scrub oak dominated stands, 812 acres of immature and mature longleaf stands, 3090 acres of immature and mature slash plantations, and 837 acres of lowland or hardwood stringers along watercourses, 840 acres of brush species and 895 acres of unproductive/unsuitable forest management land.

The off-site slash plantations are in poor condition and not growing well as evidenced by their small crowns and stagnated diameter growth. They were established at densities which should require periodic thinning to maintain growth rates and promote merchantable wood products. But, after a decade or two of monitoring tree survival and growth, it was determined that the wrong species was planted. Slash pine trees are better suited for moist or wet ground. Slash pine does not grow well on dry sandhill sites and are considered "off-site" and should be replaced with more drought resistant longleaf pine. The proposed action would remove the off-site slash pine and replace them with longleaf pine. The groundcover in these off-site stands has some remnant native herbaceous species, but in most cases they are sparse and patchy with little connectivity. Clearcutting these stand is the optimal method of restoring longleaf due to the lack of mature seed producing longleaf pine presently in the stand. Shelterwood or seed-tree cuts would not fully restock the stand with longleaf pine.

The lowlands or hardwood stringers along the watercourses are in good shape and generally do not need any treatment.

The transportation system of the area includes approximately 28.9 miles of designated system roads, 11.2 miles of system roads that are closed to the public, and 10.6 miles of non-system routes, which are also closed to the public.

Other general indicators of forest health conditions include the diversity and amount of sensitive animal species. The most recent survey indicates there are nine active RCW colonies within the analysis area and one active cluster within close proximity that utilizes the analysis area as foraging habitat.

Desired Condition

The objective of these management actions is to redirect the longleaf forest system in the analysis area toward a future condition with a forest structure and self-sustaining functioning system resembling a historic north Florida forest community. During the next two decades following the proposed action and reintroduction of native longleaf pine the project area will

consist of young longleaf pine plantations that are growing well and trending towards healthy mature, longleaf stands. In proposed thinning areas the next two decades will result in the creation of mature slash and longleaf stands that will provide excellent habitat conditions for numerous species on the forest. Future mature longleaf stands will be characterized by patches ranging between ¼ and 2 acres in size with signs of natural longleaf pine regeneration. Mature flattop longleaf and slash pines with woodpecker cavities are seen throughout the pine forests. As the forest ages, there will be more opportunities to provide two-aged patches of slash, loblolly, and longleaf pine. Even-aged patches of longleaf pine restoration up to 80 acres may continue to occur (USDA 1999b).

The different plant communities co-existing within the area are not separated by sharp boundaries, but change from one type to another gradually in response to fluctuations in water level and fire history. Occasionally fires may also enter wetlands and the plant species typically found in these low lying areas are dependent on the occasional removal of dead plant material and reduction of fire intolerant shrubs and trees provided by the regular disturbance. Vegetation patterns like this are primarily the result of fire, including prescribed fire, as well as hydrology and management activities such as timber harvesting. The pine canopy will be open and park like. A natural component of the ecosystem, stumps and downed trees will continue to be scattered throughout the forest (USDA 1999b). Dead woody material is a result of natural tree thinning from ground fires and will provide numerous habitat values such as nesting and foraging sites for wildlife. There are snags, downed trees, and lightning-struck trees. Much of the area would have old-growth conditions at any one time.

Rare wildlife species that prefer mature longleaf pine-wiregrass forests, such as the RCW, and the gopher tortoise, will offer indicators of the habitat quality. Other wildlife species (mammals) will continue to include black bear, bobcat, gray fox, raccoon, and white-tailed deer, all of which play an important role in the flatwoods animal community. Common reptiles will include Black racers, fence lizards, narrow mouth toads, oak toads, and red rat snakes. Additionally, basin wetlands will attract species that like water such as a variety of newts and frogs, other snakes and birds. This mosaic of wet and dry sites will make the area a suitable home for a vast number of animals, all contributing to the overall health of the forest and surrounding community

The quality of soil, water, and air will be high. Smoke from prescribed fire will occur but with no adverse effects to the environment. Wet areas will show little to no evidence of draining, vehicular activity, or manipulation (USDA 1999b).

The area will continue to host numerous recreational opportunities, which will be encouraged through the maintained network of public access forest roads. Recreational sites in the area, such as fishing access will continue to be available, some having signs, interpretive displays, and other developed facilities for the comfort and safety of the user.

Most of the roads in the area will continue to have native surfacing and will be rough and irregular even after the proposed management actions. In low areas, navigable roads will usually have ditches and are above the surrounding grade. Many drainage points that cross roads will continue to have low-water rock crossings making passage easier. However, travel

with low-clearance vehicles will be generally difficult, with the irregularity of the road surface and occasional changes in overall road quality. In some circumstances, roads will also have an artificially improved sand-clay surfacing, will be higher than the surrounding grade, and have ditches. In low areas, these may have culverts or bridges (USDA 1999b). These roads may not be stable during bad weather conditions, but will be generally more navigable than the native surfaced roads discussed previously. However, rutting, roughness, and dust will be present most of the time and a high clearance vehicle will still be recommended. There will be a few higher-quality roads with limerock surfacing or pavement. These are stable and smooth all the time, have little dust or roughness and will be accessible by most vehicles.

Proposed Action

To meet the purpose and need the Forest Service is proposing the following treatments:

- First or intermediate thinning of approximately1528 acres of both young and mature slash and longleaf pine stands.
- Conversion of 149 acres of stagnant offsite slash pine plantations to longleaf pine.
- Apply the herbicides triclopyr for pine release on approximately 110 acres.
- Apply the herbicide hexazinone on 149 acres for site preparation
- Conduct groundcover restoration treatments on 149 acres by planting native wiregrass.
- Conduct Uneven-aged aged management on 20 acres of forestland.
- Hardwood control treatments on approximately 31 acres of mature pine using the herbicide hexazinone.
- Maintenance of 0.81 miles of landlines.
- Reconstruction of approximately 13.68 miles of system roads.
- Temporary improvement and use of approximately 0.62 miles of non-system roads which provide access to pine plantations, and the maintenance of approximately 8.11 miles of system roads used to haul timber products from the analysis area.

Decision Framework

Given the purpose and need, the deciding official will review the proposed action and other alternatives in order to make the following decisions:

- Which alternative best meets the purpose and need for the proposal?
- How each alternative addresses the issues developed by the interdisciplinary team and through public involvement?
- Which alternative or combination of alternatives to implement?

Public Involvement

This proposal was listed in the Schedule of Proposed Actions for National Forests in Florida beginning the 3rd Quarter of Fiscal Year 2013. Initial scoping was completed in June 2013 by sending a letter and treatment map to the forest scoping list requesting comments on the draft proposed action and by the posting of project documents to the National Forests in Florida website. A 30 day notice and comment period was initiated on November 27, 2013 with the

publishing of legal notice in the *Calhoun Liberty Journal.* All comments received have been compiled and included in appendix A.

During this phase of public involvement the updated draft EA and draft Decision Notice are being posted to the National Forest's In Florida Webpage. A legal notice published in the *Calhoun Liberty Journal* will initiate a 45-day Objection Period pursuant to 36 CFR 218. Letters or emails announcing your opportunity to object will be sent to concerned citizens, adjacent landowners, organizations, and other agencies that have submitted timely, specific written comments regarding the project during previous comment periods (i.e. scoping and notice and comment periods). Issues to be raised in objections must be based on previously submitted specific written comments regarding the proposed project and attributed to the objector, unless the issue is based on new information that arose after a designated opportunity to comment (36 CFR 218.8).

Identifying Issues

The Forest Service identifies issues to aid in setting the scope of actions and alternatives for a particular project. Issues are defined as unintended effects that may occur from the proposed action and alternatives (FSH 1909.15). Non-issues include those which are:

- outside the scope of the proposed action,
- already decided by law, regulation, Forest Plan, or other higher level decision,
- irrelevant to the decision to be made,
- conjectural and not supported by scientific or factual evidence,
- addressed with minor project design modifications of the Proposed Action which when considered alone would not result in a clearly defined alternative to the Proposed Action, or do not include measurable effects for comparison.

Issues identified by the IDT include:

1. The use of herbicides is a highly controversial management activity with potential environmental and human health impacts.

ALTERNATIVES

This chapter describes and compares the alternatives considered for the Telogia Analysis Area. It includes a description of each alternative considered. This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

Alternative A - No Action

Under the No Action Alternative, on-going activities such as prescribed fire, road maintenance, and treatment for non-native noxious and invasive weeds would continue. None of the activities described in the Proposed Action would occur.

Alternative B - Proposed Action

The Forest Service is proposing to maintain a healthy forest and improve ecosystem functioning with a secondary goal to increase future habitat for threatened, endangered, and sensitive species. These actions are designed to move the analysis area closer to its future desired condition for Longleaf/Slash Pine, Adaptive Management, RCW Management Area (7.1). Detailed descriptions of the proposed treatments are as follows:

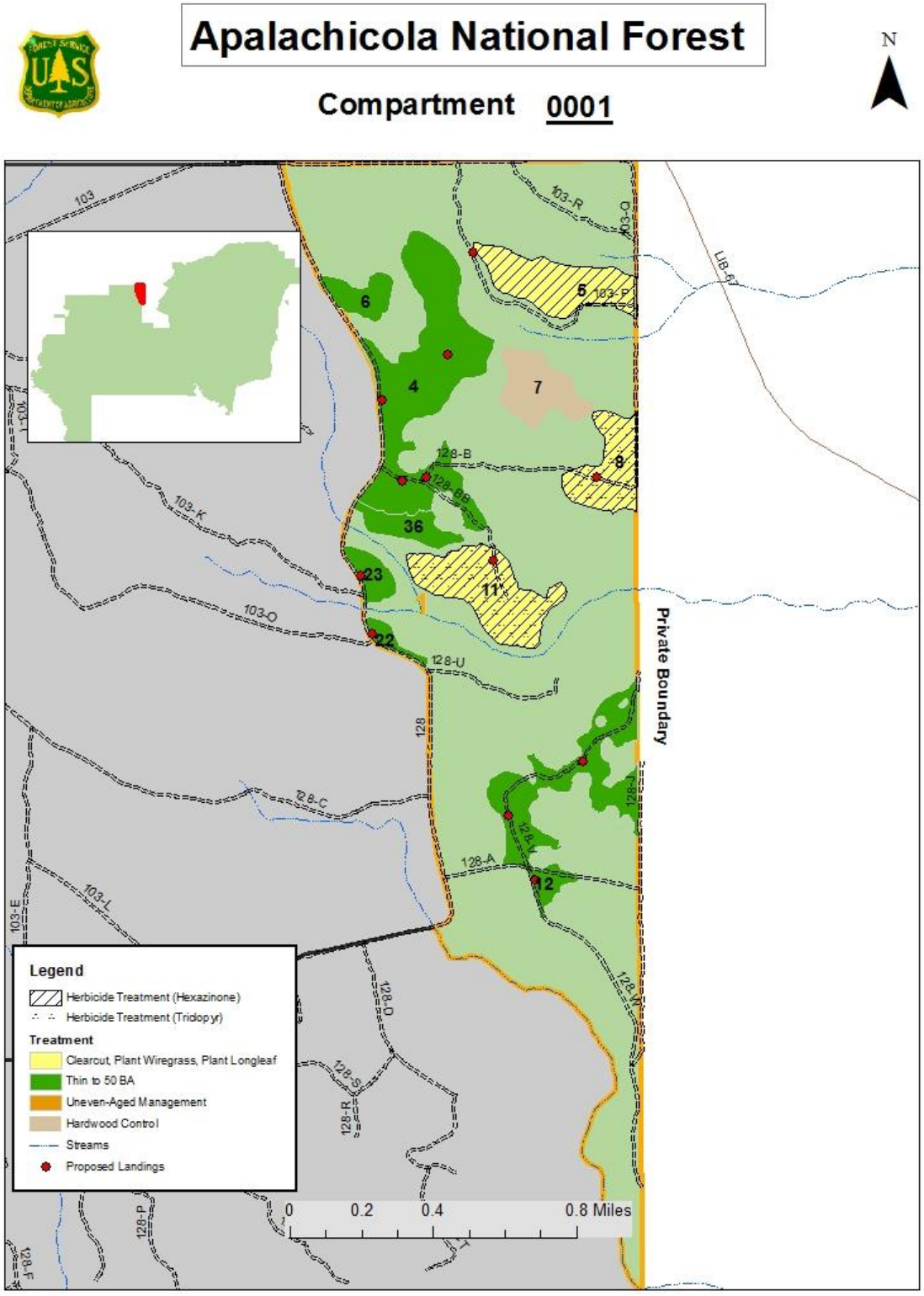
- First or intermediate thinning of approximately1528 acres of slash and longleaf pine stands. These stands will be thinned to 50 BA to reduce competition, open the forest canopy, promote the establishment of herbaceous groundcover species, and increase radial growth and tree vigor.
- Conversion of 149 acres of stagnant off-site slash pine plantations to longleaf pine. Stands will be clearcut and planted with site appropriate longleaf pine seedlings. All on-site longleaf pine will be reserved during clearcut operations.
    - Clearcut is the optimal method to restore longleaf on these sites. Regeneration methods such shelterwood or seed tree cuts are not feasible due to a lack of adequate longleaf trees to use as a seed source.
- Apply the herbicides hexazinone for site preparation on approximately 149 acres (Compartment 1 stands 5, 8 and 11 and Compartment 9 stand15). Foliar application of triclopyr would be used for pine release on 110 acres (Compartment 1 stands 8 and 11and Compartment 9 stand 15).
- Restore native groundcover by hand planting or seeding wiregrass on 149 acres. (Compartment 1 stands 5, 8, and 11 and Compartment 9 stand 15)
- Conduct hardwood control treatments in Compartment 1 stand 7 (31 acres). The herbicide hexazinone will be applied on a 6'X6' spot grid at a rate of 3 quarts per acres.
- Conduct Uneven-aged management cuts (UEAM) on 20 acres of mature longleaf pine. Openings ranging from ¼ -2 acres in size will be created throughout the stand to encourage natural regeneration of longleaf pine seedlings. (Modified Group Selection, Compartment 9 stand 18)

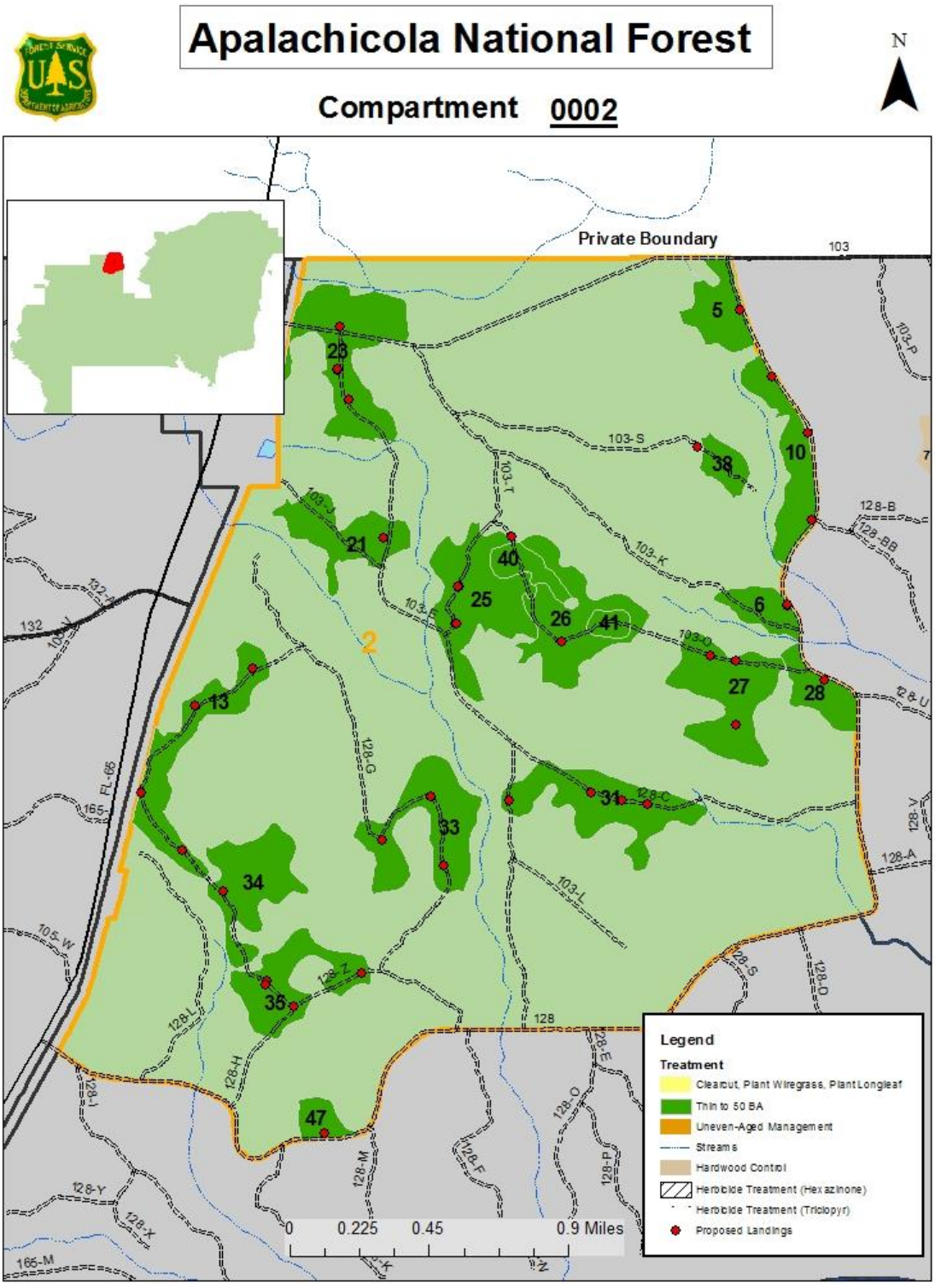
  Connected actions necessary to facilitate the proposed action include maintenance of 0.81 miles of landlines, reconstruction of approximately 13.68 miles of system roads, temporary improvement and use of approximately 0.62 miles of non-system which provide access to pine plantations, and the maintenance of approximately 8.11 miles of system roads used to haul timber products from the analysis area.

  If approved, these actions would take place in Compartments 1, 2, and 9 of the Apalachicola Ranger District, Apalachicola National Forest in Liberty, Florida within the next 5-10 years.

Table 1: Proposed Action, Alternative B – Estimated Treatment Acres by Stand

Comp	Stand	Treat AC	Treatment	UEAM	Hexazinone (Site Prep)	Hexazinone (Hardwood Control)	Plant Wiregrass Plugs	Plant Longleaf	Foliar Triclopyr (Release)
1	4	74	Thin						
1	5	39	Clearcut		39		39	39	
1	6	20	Thin						
1	7		Hardwood Control			31			
1	8	22	Clearcut		22		22	22	22
1	11	42	Clearcut		42		42	42	42
1	12	69	Thin						
1	22	13	Thin						
1	36	16	Thin						
2	5	27	Thin						
2	6	18	Thin						
2	10	38	Thin						
2	13	62	Thin						
2	21	40	Thin						
2	23	54	Thin						
2	25	61	Thin						
2	26	63	Thin						
2	27	62	Thin						
2	28	21	Thin						
2	31	59	Thin						
2	33	61	Thin						
2	34	48	Thin						
2	35	43	Thin						
2	38	13	Thin						
2	40	17	Thin						
2	41	7	Thin						
2	47	11	Thin						
9	5	59	Thin						
9	8	94	Thin						
9	9	127	Thin						
9	10	8	Thin						
9	13	17	Thin						
9	14	55	Thin						
9	15	46	Clearcut		46		46	46	46
9	16	71	Thin						
9	18	20	UEAM	20					
9	20	130	Thin						
9	21	24	Thin						
9	23	3.4	Thin						
9	302	3.8	Thin						
9	303	16.8	Thin						
9	304	28	Thin						
9	305	5.6	Thin						
9	306	4.8	Thin						
Totals		**1580.4**		**20**	**149**	**31**	**149**	**149**	**110**


Apalachicola National Forest
Compartment 0001
N
Private Boundary
Legend
Herbicide Treatment (Hexazinone)
Herbicide Treatment (Tridopyr)
Treatment
Clearcut, Plant Wiregrass, Plant Longleaf
Thin to 50 BA
Uneven-Aged Management
Hardwood Control
Streams
Proposed Landings
0 0.2 0.4 0.8 Miles


Apalachicola National Forest
Compartment 0002
N
Private Boundary
103
5
28
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38
103-S
103-T
103-J
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103-F
103-O
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128-B
128-BB
128-U
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132-A
105-V
13
128-G
FL-65
165
31
128-C
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105-W
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35
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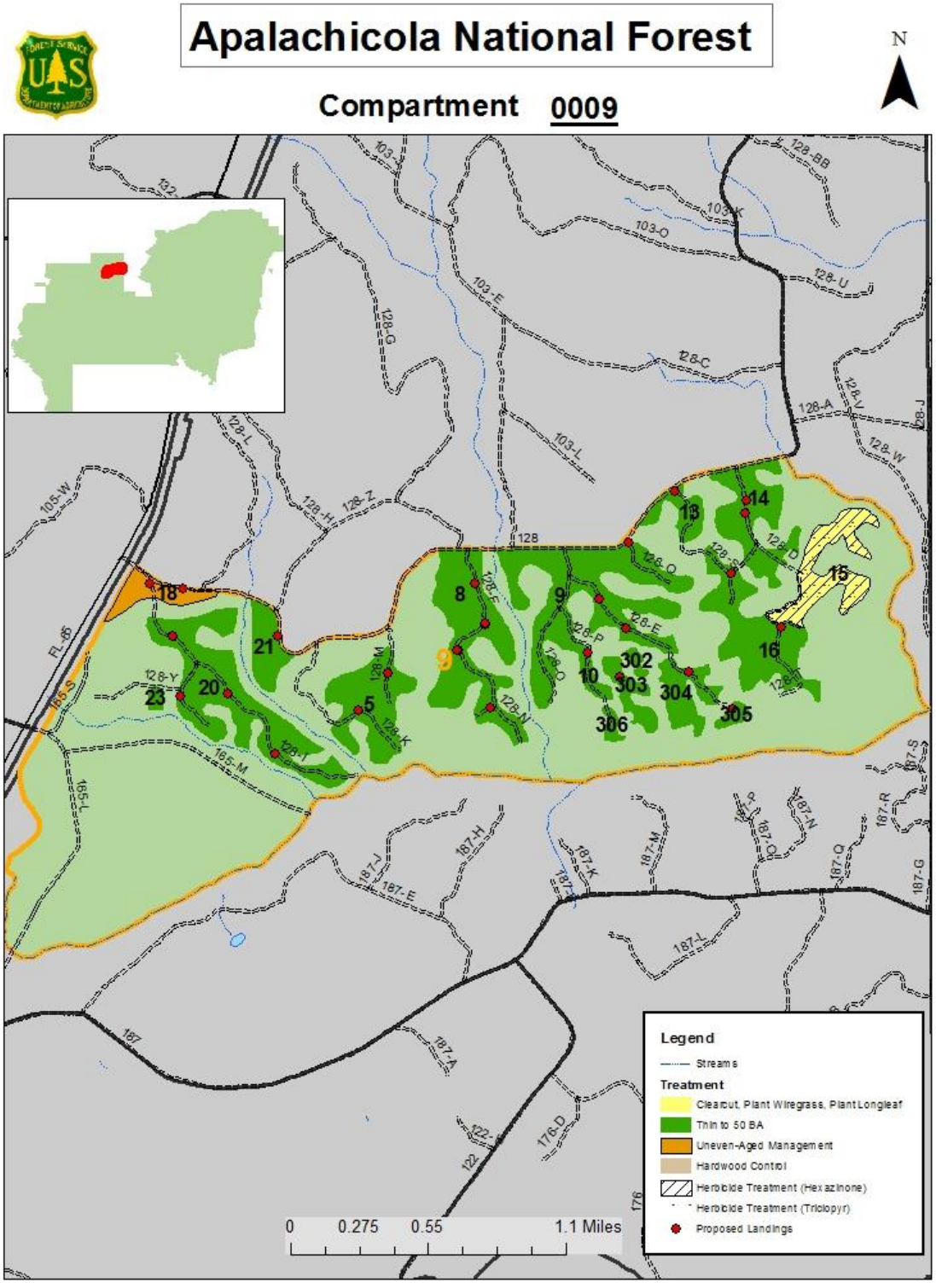
128
128-H
128-E
128-I
47
128-O
128-M
128-F
128-P
128-Y
128-X
165-M
0 0.225 0.45 0.9 Miles
Legend
Treatment
Clearcut, Plant Wiregrass, Plant Longleaf
Thin to 50 BA
Uneven-Aged Management
Streams
Hardwood Control
Herbicide Treatment (Hexazinone)
Herbicide Treatment (Triclopyr)
Proposed Landings


Apalachicola National Forest
Compartment 0009
N
0 0.275 0.55 1.1 Miles
Legend
Streams
Treatment
Clearcut, Plant Wiregrass, Plant Longleaf
Thin to 50 BA
Uneven-Aged Management
Hardwood Control
Herbicide Treatment (Hexazinone)
Herbicide Treatment (Triclopyr)
Proposed Landings

Alternative C – No Herbicide

This alternative would include all actions described in the Proposed Action, except prescribed fire, hand tools, and mechanical equipment would be used instead of the herbicides, hexazinone and/or triclopyr for site preparation, groundcover restoration, and pine release. In addition no hardwood control treatment would occur in stand 7 of compartment 1 under this alternative.

Alternatives considered but not documented in detail

An alternative to clearcutting off-site slash pine in stands 5 and 8 of compartment 1 and stand 15 of compartment 9 was proposed by the public during public scoping.

> "Retaining the current slash overstory and gradually replacing it with longleaf by planting in created gaps or enlarging naturally occurring gaps would provide a continuous source of foraging habitat for RCWs."

This method of stand conversion was not considered as an alternative to clearcutting for the following reasons:

1) Leaving off-site slash pine that is not growing well would not produce good quality habitat for the RCW in the near future (U.S. Fish and Wildlife Service 2003). These slow growing trees are more likely to succumb to insect and disease attacks or die as a result of prescribed burns. The trees that do survive will continue to grow slowly. Growth and yield models predict it will take 30 more years for the off-site trees to reach and average of 10 inches DBH.

2) The length of time it would take to convert these stands by regenerating small openings is likely to be 200 years or more (10% per entry). It will be 15-20 years before we return to this area of the forest to assess timber management needs. Even if we return every 10 years it would take 100 years to fully convert these stands. This means the off-site trees would remain poor quality RCW habitat for the foreseeable future. Also, given staffing turnover and changes in forest priorities, it is difficult to assure long-term, multiple-entry management would be implemented.

3) Converting these stands with regeneration cuts such as seed-tree or shelterwood would not fully restock the stand due to an absence of mature seed producing longleaf pine trees. For this reason clearcut was chosen as the optimal method of converting these stands.

4) It would not be practical to move in and set up logging equipment to harvest small openings for small diameter low quality products of little economic value. If we convert 10% of each stand per entry it would equate to harvesting 3.9 acres in stand 5, 2.2 acres in stand 8, and 4.6 acres in stand 15. These acres would occur in several openings across each stand.

5) It would also not be economical to site prepare or plant this small amount of acres under a contract. This would leave the forest service to site prep and plant them with forest service employees. Using our crews to site prep and plant small areas would take them away from other management operations such as prescribed burning.

6) We have a lot of experience converting off-site slash pine growing on sandhills with the clearcut method. The Nature Conservancy (TNC) also has had great success with this method. The forest service is confident that a longleaf pine wiregrass stand can be established on this type of site within a reasonable amount of time. Both the National Forests in Florida Land and Resource Management Plan (p. 3.18) and Environmental Impact Statement (FEIS, p. 35), as well as the RCW Recovery Plan (p. 199), recognize that clearcuts may be an appropriate management tool to convert stands to more desirable pine species (in this case, from slash to longleaf).

For these reasons the Forest Service feels that slow conversion of these stands over time is not a viable alternative to clearcutting and, therefore, we did not fully analyze this proposed alternative.

Coordination Measures

Coordination measures were incorporated into the design of the alternatives to reduce the risk of potential impacts to the physical, biological, and social-economic environments. These measures include all applicable Forest Plan Standards and Guidelines described below.

Proposed, Endangered, Threatened and Sensitive (PETS) Species

- If modifications are made in the project, or if additional information regarding the effects of the project on listed species becomes available, the U.S. Fish and Wildlife Service (USFWS) would be notified and informal consultation would be reinitiated if the USFWS or the FS determines it is needed.
- There are isolated wetlands in the project area. Due to the poor condition of the harvest area, harvest would be allowed up to the ponds. Harvest will be restricted to these areas only when it is dry enough to allow for harvest without causing soil disturbance.
- Contracts would contain penalty clauses to protect white-banded RCW trees.
- If possible, temporary roads, log decks, and skid trails would be located outside of active or inactive RCW clusters (except for skidding timber out of clusters).
- Log decks should be located no closer than 200 ft. from RCW cavity trees.
- Timber and road contracts will prohibit harvest, hauling, and/or roadwork within active Red-cockaded Woodpecker (RCW) clusters during the nesting season, April 1 through July 31. Exceptions will be made for hauling and/or roadwork on major numbered roads and highways (FS Level 5, 4, 3 Roads). Exceptions will also be made during nesting season if a biologist determines through direct observation that the cluster is no longer active, there is not a pair, or the young have fledged before July 31.
- **WL-11**—In all timber sale unit openings clearly mark a 25-foot buffer around the entrance to every gopher tortoise burrow. Keep heavy equipment out of this buffer zone during both harvesting and regeneration (USDA 1999b).
- Purchasers and contractors will be advised of the possible presence of threatened, endangered, and sensitive species and will be instructed to avoid harming any wildlife they encounter, including snakes.
- Equipment cleaning measures would be required by contracts to prevent the introduction of non-native invasive plants.

- To protect aquatic species; pesticide application, timber harvesting activities, and road maintenance will adhere to the standards of Florida's Silvicultural Best Management Practices (BMPs). For a detailed discussion of these practices, see the Silviculture BMP Manual: http://freshfromflorida.s3.amazonaws.com/silvicultural_bmp_manual.pdf

Heritage Resources

- **HE-1** If any cultural resources are discovered during operations all ground-disturbing activity will cease. The Forest Archeologist will determine changes to be made to the project before work resumes (USDA 1999b).
- **HE-9** Known cultural resource sites will be protected by timber sale contract and no ground-disturbing activities will occur in these areas, which may include segments of roads (USDA 1999b).

Public Health and Safety

- Use herbicides in accordance with registration label. Place herbicide notice signs at treatment sites. Herbicide notice signs (FSH 7109.11) would be clearly posted, and would include the application date, the herbicide used, and safe reentry date. Private lands would not be treated. No herbicide would be applied within 100 feet of private land. No herbicide would be applied within 100 feet of any public or domestic water source.
- The Pesticide Use Handbook (FSH 2109.14) and the Health and Safety Code Handbook (FSH 6709.11) would be used as guidance for workers. Workers who apply herbicides would be trained to ensure minimum impacts and maximum effectiveness. Only those methods that assure proper application of herbicides would be used. Herbicide application by contract and/or in-house personnel would be performed by or directly supervised by the holder of a current Federal Pesticide Applicator's license following all current legal application procedures administered by the USDA Forest Service and the label on the herbicide container.

Soil & Water

- **WA-1** Adhere to standards of Florida's Silvicultural Best Management Practices (BMPs). For a detailed discussion of these practices, see the Silviculture BMP Manual: http://freshfromflorida.s3.amazonaws.com/silvicultural_bmp_manual.pdf
- **WA-2** Four perennial streams are located within the analysis area (Millpoint Branch, Big Branch, Yellow Creek, and Western Branch) and drain into Telogia Creek. A 35-foot Special/Streamside Management Zone (SMZ) will be required in the following areas (LRMP, 3-24): Compartment 1 Stands 5, 11, 22, 23, and 36; Compartment 2 stands 5, 6, 10, 21, 23, 25, 31, 33, 35, and Compartment 9 Stands 8, 9, 20 and 21. No operation of heavy equipment will occur during periods when weather and soil conditions will promote excessive rutting or compaction.
- Forest Plan standard WA-6: Restrict soil compacting activities, including logging traffic when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limits (USDA 1999b).

Vegetation

- **VG-37 -** Control invasive terrestrial and aquatic weeds. Do not apply herbicides within 60 feet of any PETS plant species unless analysis indicate herbicide use is the best way to protect PETS plants from invasive weeds (USDA 1999b). Contract specifications for equipment cleaning will be placed in contracts to prevent the introduction of exotic plants.
- **VG-18 –** Minimize soil-disturbing site preparation in longleaf and slash pine sites. When disturbance is necessary to achieve the desired future conditions, use methods that displace no more than 10 percent of the soil surface in the treated area. The objective should be to maintain the integrity of the native herbaceous vegetation (especially wiregrass) overtime (USDA 1999b).
- Follow guidelines for planning and applying herbicides (USDA 1999a).

Visual Quality

- **VG-15 -** To enhance visual quality, require that slash, tops, and logging debris be piled no more than 2 feet high within 100 feet of levels A and B roads and designated trails. There are no stands within the analysis area that require visual mitigation.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 2. Comparison of Alternatives

Proposed Actions	Units	Alternatives		
		A	B	C
Improve Forest Health:		No Action	Proposed	Without Herbicide
Thin pine slash and longleaf pine stands to maintain radial growth and tree vigor	Acres	0	1528	1528
Replace off-site species with native species (Restore Longleaf Pine)	Acres	0	149	149
Create multiple age stand through uneven-aged management techniques	Acres	0	20	20
Improve Ecosystem Functioning:				
Prepare areas for tree planting by applying herbicides (Hexazinone)	Acres	0	149	0
Restore groundcover by supplementing native grasses.	Acres	0	149	149
Apply herbicides for pine release (Triclopyr)	Acres	0	0	110
Prepare areas for tree planting mechanically (chopping and/or disking)	Acres	0	0	149
Reduce hardwood competition (6X6 Grid) with Hexazinone	Acres	0	31	0
Reduce hardwood competition (handtools/ mechanical)		0	0	31
Transportation:				

Road maintenance for timber sale	Miles	0	8.11	8.11
Road reconstruction to haul timber removed	Miles	0	13.68	13.68
Reconstruction of existing non-system roads	Miles	0	0.62	0.62
Forest Product Outputs:				
Merchantable Sawtimber	CCF	0	959	959
Merchantable Pulpwood	CCF	0	13,826	13,826
Product Value	Dollars	$0	$635,004	$635,004

Table 3. Comparison of Environmental Consequences by Alternative

Resource Area	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C (No Herbicide)
Soils	Some soil displacement will occur over as a result of ongoing management activities such as prescribed burning.	Soil displacement would occur as a result of timber sale operations. Effects are not expected to be significant.	Soil displacement would occur as a result of timber sale operations. Soil compaction and soil displacement may occur from mechanical site preparation. Effects are not expected to be significant.
Water	No change from current conditions.	Improved road drainage and stream crossings would reduce current sedimentation. Herbicide application will be monitored and mitigated to as to not pollute rivers, streams, and aquifers.	Improved road drainage and stream crossings would reduce current sedimentation.
Air quality	Recurrent road maintenance may temporarily reduce air quality but to a less effect than Alt. B and C. Prescribe burning may have a cumulative effect on all alternatives, particularly when adjoining landowners are administering control burns. Florida's permitting process for prescribed burns would minimize the effects.	Logging equipment will produce exhaust and dust in the analysis area but will have no significant impact on short term or long term air quality. Prescribe burning may have a cumulative effect on all alternatives, particularly when adjoining landowners are administering control burns. Florida's permitting process for prescribed burns would minimize the effects.	Smoke from prescribed fire for site preparation on 149 acres would be in addition to annual burning. Duration of smoke would be short-term. Logging and mechanical site prep equipment will produce exhaust and dust in the analysis area but will have no significant impact on short term or long term air quality.
PETS (Animals)	Habitat conditions for species preferring open longleaf/wiregrass habitats would continue to decline gradually.	Habitat conditions for species preferring open herbaceous longleaf/slash habitats would improve on the treated acres.	Habitat conditions for species preferring open herbaceous longleaf/slash habitats would improve on the treated acres.
PETS (Plants)	Habitat conditions for species preferring open sunlit conditions would continue to decline gradually.	Habitat conditions for species preferring open sunlit conditions would improve on treated acres.	Habitat conditions for species preferring open sunlit conditions would improve on treated acres.
MIS (Animals)	Habitat conditions for species preferring open herbaceous longleaf/slash habitats would continue to decline gradually.	Habitat conditions for species preferring open herbaceous longleaf/slash habitats would improve on the treated acres.	Habitat conditions for species preferring open herbaceous longleaf/slash habitats would improve on the treated acres.
MIS (Plants)	Habitat conditions for species	Habitat conditions for species	Habitat conditions for species preferring

Resource Area	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C (No Herbicide)
	preferring open sunlit conditions would continue to decline gradually.	preferring open sunlit conditions would improve on treated acres.	open sunlit conditions would improve on treated acres.
Vegetation	Without thinning, overstocked stands would have slower growth and continue to shade out herbaceous vegetation. Without replacing off-site species growth of trees would continue to decline and mortality would increase.	Growth rates would increase and conditions for herbaceous ground cover would be improved. Effects would last longer for those areas treated with herbicide and increase chance of survival of Longleaf.	Growth rates would increase but conditions for herbaceous ground cover would only be temporarily improved. Effect would be short lived due to re-sprouting woody vegetation. Groundcover restoration efforts would most likely be delayed until prescribed fire could reduce the hardwood trees and brush through sequential growing season prescribed burns.
Cultural Resources	No impact to cultural resources.	No impact to cultural resources.	No impact to cultural resources.
Visual Quality	Lack of treatment would result in thick forests outside desired conditions which would gradually reduce visual quality.	Treatment would result in short-term (1-5 years) reduction in visual quality from vegetation treatments. Long-term conditions (5-10 years) would improve as desired conditions are achieved.	Treatment would result in short-term (1-5 years) reduction in visual quality from vegetation treatments. Long-term conditions (20-30 years) would improve as desired conditions are achieved.
Economics	No change from current conditions	This alternative would remove approximately 14,671 CCF of pine products with a slightly positive Net Worth.	This alternative would remove approximately 14,671 CCF of pine products with a slightly positive Net Worth. The cost of several sequential prescribed burns would likely rival the cost for herbicide treatments in Alternative B.
Transportation System	Existing interior roads are in moderate to poor condition. No Change in miles available for public access.	Existing interior road conditions would be improved through road reconstruction and maintenance. Public access on the road system would remain the same.	Existing interior road conditions would be improved through road reconstruction and maintenance. Public access on the road system would remain the same.
Recreation	Hunting is the primary recreation use in the area. Opportunities would remain about the same over the short term. As groundcover quality and quantity gradually decreases wildlife presence my decrease. This could lead to a decline in hunting success.	Some disruption would occur during the course of the proposed actions. Increased activity in the area may reduce hunting success. Road conditions would be improved and could result in increased use.	Some disruption would occur during the course of the proposed actions. Motorcycle trails would be re-routed or closed during harvest operations. Increased activity in the area may reduce hunting success. Road conditions would be improved and could result in increased use.

ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

Effects of herbicides on resources are based on previous experience on the Apalachicola National Forest, the Forest Plan FEIS and technical reports prepared by the Syracuse Environmental Research Associates (SERA).

PHYSICAL ENVIRONMENT

Soil

Affected Environment:

The affected area analyzed for soils includes all 6,685 acres within the analysis area. Short terms impacts are considered those happening while management activities are ongoing (up to 2 years) to 1-5 years after activities have concluded. Long term impacts are expressed as those occurring five years or more following the proposed actions. The area includes 10 general soil series as described in the morphology section of the Soils and Vegetation of the Apalachicola National Forest publication. Soil series that are within the analysis area are shown in the table below. Full descriptions of these soils can be found in *Soils and Vegetation of the Apalachicola National Forest* (United States. Forest Service. Southern 1984). As noted in the following table, erosion hazard for these soils are slight, but due to their somewhat poorly drained conditions rutting by heavy equipment can occur.

Table 4. Soil Series

Soil Series	Acres of Soil in the Analysis Area	Acres Treated in Proposed Action	Drainage Class	Drainage Description	Erosion Hazard	Equipment Limitation
Albany	309	148	3	Somewhat Poorly Drained	Slight	Moderate
Blanton	212	105	4	Moderately Well drained	Slight	Moderate
Chipley	72	31	3	Somewhat Poorly Drained	Slight	Moderate
Hurricane	618	174	3	Somewhat Poorly Drained	Slight	Moderate
Leefield	214	83	3	Somewhat Poorly Drained	Slight	Moderate
Plummer	1805	656	2	Poorly Drained	Slight	Moderate
Rutledge	2867	245	1	Very Poorly Drained	Slight	Moderate
Stilson	87	14	4	Moderately Well Drained	Slight	Moderate
Surrency	122	9	1	Very Poorly Drained	Slight	Moderate
Troup	38	35		Well Drained	Slight	Moderate

Alternative A – No Action
Some soil displacement would occur as a result of ongoing forest management, but it would generally be minimal and not result in any adverse effects. The effect of prescribed burning on soils would have a short-term reduction in litter and duff, but would increase the amount of organic matter in the uppermost layer of mineral soil. Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on the affects prescribed burning on soil http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380.

Cumulative Effects
The forest wide prescribed burn program would continue to occur under Alternative A. Prescribed fire provides benefits such as renovation of dominant species, where conditions allow, and increase available nutrients (Certini 2005). Soil erosion may occur with severity being determined by vegetation composition and hydrology of the area. Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on the effects of prescribed burning on soil. No other past, present or future management activities were identified.

Alternative B – Proposed Action
Soil compaction and displacement would occur as a result of heavy machinery during harvesting. Soil factors such as dryness, organic matter present, and soil depth influence the degree of compaction. The greatest impact on soils from logging usually occur under wet soil conditions (Williamson and Neilsen 2000). Under the proposed action harvesting activities would be restricted during times of excessive moisture. Under drier soil conditions compaction would not occur at levels that would restrict root growth. Soil surface mineral loss has also been found to occur following harvest operations (Nave and others 2010). The effects however were found not to be permanent.

Road reconstruction and road maintenance would increase the potential for soil erosion. Loose and exposed soil would occur on the road surface and within the immediate road prism and would be susceptible to runoff until fully stabilized. Road design features would generally control the amount of erosion and control it's occurrence through appropriate drainage features. Surface erosion associated with roads usually decreases rapidly once road construction is complete with little signs being found 3-5 years following road construction/reconstruction (Grigal 2000). Temporary roads would be closed to the public and allowed to naturally re-vegetate thereby reducing erosion risk. In these areas enhanced growth would occur due to lack of competition along the road prism. More information regarding the impacts of road reconstruction and maintenance on soils can be found in the Final Environmental Impact Statement for the Revised Land Management Plan for the National Forests in Florida.

Re-establishing native vegetation would generally improve overall soil stability and productivity.

The number of passes by heavy machinery has been shown to affect the degree of compaction with more compaction occurring with each pass (Grigal 2000). This alternative looks to

mitigate the issue of multiple passes by using herbicide for site prep rather than other mechanical means. The use of herbicides may have an effect on soils.

The herbicide hexazinone is proposed for site preparation on 149 acres and hardwood control on approximately 31 acres. Hexazinone is labeled for Site Preparation in forestry. The proposed application method would be on a 6 foot by 6 foot grid, in which 5 ml of 50% solution would be applied to each spot. This application method yields approximately ¾ of a gallon of herbicide per acre.

Hexazinone is soil active and tends to be highly mobile in soil, especially porous soils with percolating water. Mobility is strongly influenced by soil texture; high clay or organic matter content retards movement and reduces efficacy. Application rates must be adjusted to suit soil texture. Do not apply to saturated or poorly drained soils (SERA 2005).

Breakdown of hexazinone in soil is by soil microbes and its persistence is moderate with a half-life of 1-6 months; 90 days being typical (SERA 2005).

The herbicide triclopyr is prescribed for pine release. This herbicide is not soil active. It is generally non-mobile in soils, though gross applications (spills) or misapplications may show some mobility. It has a moderately short half-life of 10-46 days with an average of 30 days. It is degraded both by soil microbes and by photolysis (SERA 2011).

The environmental consequences of both herbicides are also discussed in Chapter IV of the Final Environmental Impact Statement for Vegetation Management in the Costal/Piedmont, Volume I.

Soil displacement could occur during the logging operations when skidders and other heavy equipment traverse across the land especially when dragging trees or lowering a blade, but would not result in any long-term adverse effects. Some soil compaction would occur in the top 3 inches of the soil. Implementation of Best Management Practices and coordination measures would generally ensure that no long-term adverse effects to soil resources occur. In areas where soils have severe equipment limitations, the following restriction would be applied to minimize the effect of silvicultural practices:

- Forest Plan standard WA-6: Restrict soil compacting activities, including logging traffic when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limits (USDA 1999b).

VG-18 has been interpreted to apply to areas that have intact ground cover and was added to the forest plan as a standard and guideline to protect the viability of wiregrass. If these brushy sites are to be reforested to longleaf pine more intense site preparation is needed to aid the establishment and growth of longleaf pine seedlings. Slash pine would compete with the brush species but would prove difficult to maintain over time with an increasing prescribed burn return interval. Firelines would need to be plowed around each of these stands to keep fire out of them until they reach 20 feet tall. For this reason longleaf pine has been determined to be

the more feasible and ecologically sound choice. Restoring the native groundcover will help return fire into these stands faster and should help soil productivity.

Burning for site preparation may char and partly consume the litter and duff on the treated areas. Soil biota would be reduced in the short-term but would recover quickly. Soil structure would not be affected.

Cumulative Effects
The forest-wide prescribed fire program will be executed in conjunction with Alternative B. Prescribe burning shortly after harvesting operations have been completed could increase soil erosion and leaching of soil nutrients. Aust and Blinn (2004) concluded that forest harvesting in conjunction with other management activities in steeper regions resulted in erosion and leaching that fell below acceptable values for land use. Given the flat topography of the project area the proposed actions would not result in significant soil impacts. Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on the affects prescribed burning on soil http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380.

Alternative C – No Herbicide
Some soil compaction and displacement would occur during mechanical site preparation. Tree harvesting followed by chopping will result in compaction that is slightly greater than what would occur under Alternative B due to repeated passes of heavy machinery (Williamson and Neilsen 2000). Severity will depend on compaction of the area prior to harvest and soil moisture. Chopping would affect the first 6 inches of the soil profile, but since the area being treated includes heavy concentrations of titi and other non-herbaceous vegetation, there would be little actual soil disturbance. It is expected that Forest Plan Standard VG-18 as described below would be exceeded by these activities.

- Forest Plan Standard VG-18: Minimize soil-disturbing site preparation in longleaf and slash pine sites. When disturbance is necessary to achieve the desired future conditions, use methods that displace no more than 10 percent of the soil surface in the treated area.

All other environmental effects of Alternative C are the same as Alternative B.

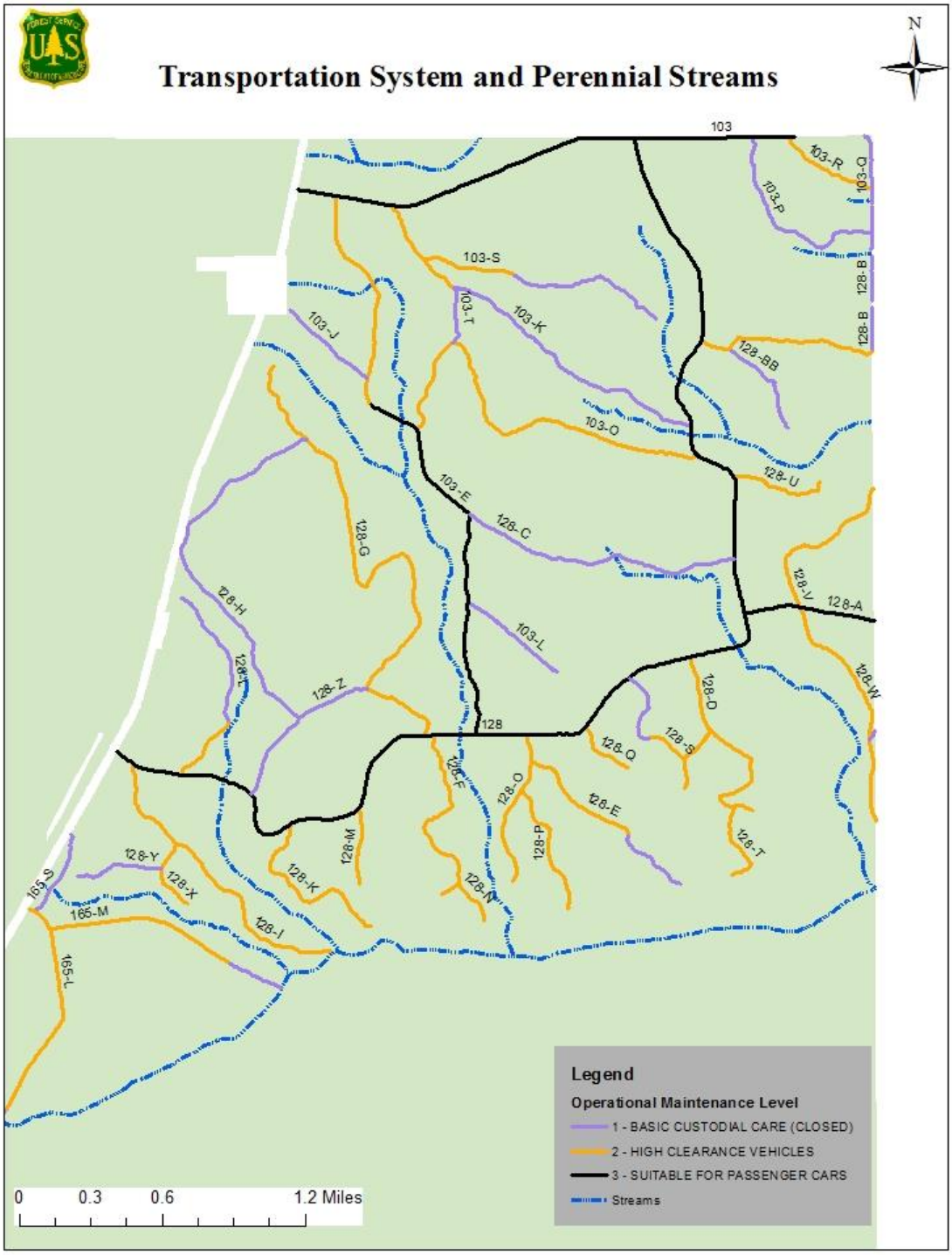
Cumulative Effects
Cumulative effects would be similar to those in Alternative B with slightly more compaction occurring due to mechanical site prep.

Water Quality

Affected Environment:
The project area falls within the boundary of one watershed, Lower Telogia Creek (6,685 acres). The area within the boundary represents approximately 8% of the Lower Telogia Creek Watershed.

The analysis area is drained by two streams to the north (Millpoint Branch and Big Branch) which eventually flow into Telogia Creek. Yellow Creek and Western Branch drain the south

end of the analysis area into Telogia Creek. Telogia Creek is an acidic, slow moving blackwater creek that is a major tributary of the Ochlocknee River. It drains 254 square miles of the Gulf Coastal Plain in north Florida (Light and others 1993). Florida Department of Environmental Quality (FDEP) determined median daily discharge in 2013 to be 64 cubic feet per second (FDEP 2013). Telogia Creek merges into the Ochlockonee River which drains into the Gulf of Mexico. There are also some wet season ponds and swamps (wetlands) in the area that do not drain into these streams. Water quality in the area is believed to be good, but there are no known background water quality tests that have been completed within this area.


Transportation System and Perennial Streams
N
103
103-R
103-Q
103-P
103-S
128-B
128-B
103-T
103-K
103-J
128-BB
103-O
128-U
103-E
128-C
128-G
128-H
128-V
128-A
103-L
128-L
128-Z
128-W
128-D
128
128-S
128-Q
128-F
128-O
128-E
128-T
128-P
128-Y
128-M
128-K
128-N
165-S
128-X
165-M
128-I
165-L
Legend
Operational Maintenance Level
1 - BASIC CUSTODIAL CARE (CLOSED)
2 - HIGH CLEARANCE VEHICLES
3 - SUITABLE FOR PASSENGER CARS
Streams
0
0.3
0.6
1.2 Miles

Alternative A – No Action

The primary impacts to water quality in the area would occur from the existing transportation system, which is in poor to moderate condition, and also from routine prescribed fire. Poorly designed water crossings can increase sedimentation and damage caused by vehicles when crossing streams could lead to increased levels of erosion.

Cumulative Effects

The forest-wide prescribed burn program would continue to move forward on the Apalachicola National Forest. Soil impacts under Alternative A will not be significantly affected. . Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on the affects prescribed burning on soil http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380.

Alternative B – Proposed Action

Generally, water from forests is of good quality with relatively low concentrations of nitrates and other dissolved minerals (Gundersen and others 2006). Because the proposed activities represent a relatively small portion of the overall watershed areas, it is expected that no measurable changes in water quality, availability, or flow would occur as a result of this action.

There are 17 stands adjacent to perennial streams. Most of these stands are separated from the streams by existing hardwood or other vegetative stringers. All stands would maintain buffers described in Forest Plan standard WA-2 and would comply with the most recent *Silviculture Best Management Practices Manual* published by the state of Florida.

The proposed road system includes several perennial or intermittent stream crossings by low standard roads. Current crossings would be improved as needed to reduce potential impacts to streams such as siltation.

Reduction of trees through the thinning and clearcut treatments will reduce evapotranspiration in the treatment stands and cause a temporary increase in the groundwater level of the stand. As vegetation recovers the levels of transpiration will increase and water quality and quantity will recover, usually in 2-5 years (Aust and Blinn 2004).

In this alternative, hexazinone is proposed for site preparation on 149 and hardwood control on 31 acres. The herbicide would be put out at a rate of approximately three quarts per acre. The use of herbicides would introduce man-made chemicals into the ecosystem.

Hexazinone is generally selective, controlling most hardwoods while not affecting most grasses. Its mode of action is a photosynthetic inhibitor. The herbicide is readily absorbed through the roots and, to a lesser degree through foliage. It is translocated upward via the xylem. Because of its high solubility, it has the potential to move offsite through leaching and runoff (Neary and others 1983). Soil type and rainfall affect the amount and duration of offsite movement (Tatum 2004). A description of hexazinone and its environmental effects on vegetation is described in detail in the Syracuse Environmental Research Associates Risk Assessment (SERA).

The herbicide triclopyr is prescribed on approximately 110 acres for or pine release. This herbicide has a moderate to low solubility in water. Under normal conditions, its potential for leaching is low since it binds to clay and organic matter in soil. Sunlight rapidly breaks down triclopyr in water, with a half-life of less than 24 hours.

- Solubility: Triclopyr has moderate to low solubility.
- Potential for Leaching into Ground-Water: 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. Triclopyr is not soil active. Generally non-mobile in soils; but misapplications (spills) of Garlon 3A may show some mobility and non-target root uptake and may contaminate ground water (Tatum 2004).
- Surface Waters: Sunlight rapidly breaks down triclopyr in water. The half-life in water is less than 24 hours (10 hr. half-life at 25 ° C). It has a moderately short half-life of 10-46 days with an average of 30 days, and is degraded both by soil microbes and by photolysis (SERA 2011).

To reduce potential effects, this alternative is designed such that no herbicide equipment would be cleaned within 100 feet of open water or wells and no herbicide would be applied within 100 feet of perennial or intermittent springs or streams. Also, herbicide application would be suspended by the Contracting Officer's Representative or inspector if rainfall is heavy enough to cause movement of herbicide from target species. No herbicide would be applied within 100 feet of any public or domestic water source.

The application rate for the herbicides would be applied at or below the product label recommendations, and would meet the requirements of the 1989 FEIS Vegetation Management in the Coastal Plain/Piedmont. The environmental consequences of these herbicides are discussed at length in Chapter IV of the Final Environmental Impact Statement for Vegetation Management in the Coastal Piedmont, Volume I.

Planting Native Grasses or longleaf trees will help hold the soil in place and reduce the long-term chances of soil movement to water bodies.

Road construction, reconstruction, or maintenance may affect the water quality of the area directly through surface run-off or raindrop splash on soils disturbed or exposed during these operations. State of Florida Best Management Practices will be adopted during the road reconstruction or maintenance work. These practices will reduce potential effects of road work. All of the work would be conducted in or along existing road corridors so it is not anticipated that these activities would affect subsurface or groundwater flow.

Cumulative Effects

The forest-wide prescribed burn program would continue to move forward on the Apalachicola National Forest. Prescribed burning when implemented shortly after the proposed action is implemented has the potential to increase runoff and siltation of streams due to a short-term of loss of vegetation to slow or absorb rainfall. Also when excess amounts of burned foliage enters streams nitrogen, phosphorus, and cation levels can become altered but only for short

periods of time (Battle and Golladay 2003). This effect would be lessened due to the removal of trees associated with the proposed action and thus lower amounts of available leaf litter to burn. The relative flatness of the area together with standard Best Management Practices ensures that any movement of soil is generally localized within the project area. Existing sedimentation is expected to be reduced by improving stream crossings of roads used for transporting logs.

Alternative C – No Herbicide
The environmental effects of Alternative C are the same as Alternative B except that there would be no potential impacts to water quality due to the use of herbicides.

Cumulative Effects
Cumulative effects would be similar to those in Alternative B without the potential impacts to water quality from the use of herbicides.

Air Quality

The Telogia Analysis Area is located within Air Quality Class II. National Ambient Air Quality Standards (NAAQS) were set by the Environmental Protection Agency to promote a level of air quality sufficient to protect public health and welfare issues. The Florida Department of Environmental Protection (DEP) is responsible for inventory, monitoring, and regulation of air quality. Areas are divided into air quality classes. In Class I areas, fresh air (lack of odor) is a recognized value of the area and very little air pollution is allowed. Bradwell Bay Wilderness rated as a Class I Area, is approximately 15 miles southeast of the analysis area. Class II areas allow a moderate level of air pollution to accommodate industrial/urban development. Prescribed fire has been a part of management of this analysis area for many years. These compartments have been prescribed burned several times in the past. The table below shows the history of prescribed burning in these compartments in the last ten years. The analysis area currently meets National Ambient Air Quality Standards.

Table 5. Ten-Year Prescribed Burn History (Acres)

COMPARTMENT	FY-2014	FY-2013	FY-2012	FY-2011	FY-2010	FY-2009	FY-2008	FY-2007	FY-2006	FY-2005	FY-2004
1	574	0	0	0	574	0	0	660	0	0	574
2	0	2219	0	0	2219	0	2219	0	0	0	2219
9	0	0	0	0	2620	0	0	3144	0	0	

Alternative A – No Action
The ANF conducts a Forest-wide prescribed burning program that attempts to treat all upland pine areas every three years. Smoke created as a result of prescribed burning is managed and analyzed as part of each burn plan. The Apalachicola National Forest follows the National Forest Smoke Management Guidelines to minimize the effects. Refer to the Apalachicola FY 2012-2017 Prescribed Burning environmental assessment for more details on the environmental effects. Smoke from routine burning would result in short-term impacts to air quality, but would occur to a lesser degree than Alternatives B and C.

Alternative B – Proposed Action
The use of herbicides is not expected to affect air quality since application would only occur when wind speeds are less than 8 miles per hour to reduce chance of wind drift. Heavy equipment use would release emissions and create dust while in operation. Timber harvesting would occur during dry periods or when stand conditions permit operability. These effects would be minimal during operations. Local weather patterns would aid in dissipating dust after each day of operation. Effects from dust for example would in most cases occur for less than a few hours, while smoke from prescribed fires could be present for several days.

Cumulative Effects
The only potential cumulative effect would be if prescribed fire in adjacent compartments occurs at the same time as the road reconstruction, maintenance, timber harvesting, or site preparation work. Primary concerns from smoke and or dust from harvesting would be to adjacent landowners and traffic on nearby roadways. Coordination measures would include caution signage and/or flashing warning lights on major highways and roads. In the event of severe smoke in heavily congested areas, Forest Service personnel are strategically stationed in areas of concern. The duration of these overlapping effects would be short-term, lasting from a few hours to a few days.

Alternative C – No Herbicide
Alternative C would utilize prescribed fire and mechanical methods such as handtools and other mechanical equipment for site preparation in the stands identified under the Proposed Action. The smoke from prescribed burning and dust from mechanical equipment may adversely affect visibility on roads and air quality depending on environmental conditions such as wind speed and direction, temperature, humidity and other factors. These impact short term air quality but would not have any long term ramifications.

Cumulative Effects
Cumulative effects would be similar to those for alternative B without the risk of drift associated with herbicide application. Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on the affects prescribed burning on air quality http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380.

Climate Change
Although some activities proposed in this project will produce greenhouse gases (e.g., timber harvesting and prescribed fire), the primary objective of these activities is to convert offsite slash pine and over stocked longleaf pine stands to resilient and diverse long-rotation longleaf pine stands. This shift in management will sequester more carbon in standing trees that will accumulate carbon for at least 120yr and live for up to 450yr (Kush and others 2004). When some of these longleaf pines are eventually harvested, they will primarily produce sawtimber products rather than pulp, which will sequester carbon beyond the life of the tree (Avalapati and others 2002). Additionally, recent studies suggest that litter and understory C and N pools in longleaf/slash pine stands recover rapidly from fire so the effects of prescribed burning on the overall carbon budget in this system are expected to be negligible. In conclusion, the short-term production of greenhouse gases by the proposed action in this project will likely be offset by increased carbon sequestration as desired vegetation responds to improved conditions

(National Wild Turkey Federation 2009). Although the no-action alternative would not directly result in increased emissions of greenhouse gasses, it would result in a higher risk of catastrophic fire due to high fuel loads, which in turn would release a large pulse of CO_2 and particulates.

BIOLOGICAL ENVIRONMENT

Wildlife

Species addressed in this section include the Management Indicator Species as defined by Forest Plan, Proposed, Endangered, Threatened species as defined by the USFWS and species included on the RFSS (Regional Forester's Sensitive Species) list for Apalachicola National Forest.

There are perennial streams within the analysis area; however they are too small to sustain a game fish population suitable for recreational fishing. These streams would likely contain small bluegill and minnows. With the precautions mentioned in the Physical Environment section there are no expected effects to fisheries or aquatic life.

Management Indicator Species - Animals

Affected Environment

Under the 1976 National Forest Management Act (NFMA), the Forest Service is charged with managing National Forests to provide for a diversity of plant and animal communities consistent with multiple-use objectives. Management Indicator Species (MIS) are one tool used to accomplish this objective. MIS and their habitat needs are used to set management objectives and minimum management requirements to focus on effects analysis, and to monitor effects of plan implementation. The general wildlife community that occurs in the Telogia Analysis Area is typical of the southern Coastal Plain. Because it is not feasible to monitor the effects of management actions on all wildlife species, certain species were chosen to be "management indicators". Management indicator species (MIS) are selected to monitor the effectiveness of Forest Plan implementation in meeting the desired future conditions. In 2011 the National Forests in Florida amended the Forest Plan (amendment 10) which changed the MIS species. Animal species chosen as MIS for the Apalachicola National Forest are the red-cockaded woodpecker and Bachman's sparrow. The Forest Plan identifies Bachman's sparrow and RCW as indicators for sandhill, scrubby flatwoods, mesic flatwoods, and wet flatwoods community types. The predominant community in the project area is mesic flatwoods.

Red Cockaded Woodpecker

This species' historical range includes the southeastern Piedmont and Coastal Plain from New Jersey to Texas, and inland to Kentucky, Tennessee, Missouri, and Oklahoma. It is now virtually extirpated north of North Carolina and in all interior states except Arkansas. Populations are fragmented and most are small. Habitat mainly consists of open, mature pine woodlands, but this species can sometimes be found in deciduous or mixed pine-hardwoods

located near pine woodlands. Optimal habitat is characterized as a broad savanna with a scattered over-story of large pines and a dense groundcover containing a diversity of grass, forb, and shrub species. Mid-story vegetation is usually sparse or absent (NatureServe 2013)

Alternative A (No Action)

Direct and Indirect Effects

The No Action alternative would not actively change the stand structures to bring them closer to those described in the RCW Recovery Plan. There would not be a direct short term impact to the existing active clusters but in the long term the No Action alternative would not encourage the growth of individual groups or the population.

Cumulative Effects

No cumulative effects are expected because no actions would take place under this alternative. Prescribed fire would maintain current habitat conditions in stands that have herbaceous groundcover and improve others that don't have herbaceous groundcover. However, without the reduction of overstory and midstory vegetation, it is not likely that good quality foraging habitat would be increased in the project area.

Alternative B (Proposed Action)

Direct and Indirect Effects

Direct and indirect effects are expected to be beneficial for the RCW. There are 42 stands slated for treatment (38 for thinning and 4 for clearcut) all meet the basic suitable foraging habitat (stands in which 50% or more of the dominant trees are pines, generally 30 years of age or over). Improving stand structure and reducing tree density by thinning would release herbaceous groundcover which is inversely related to basal area of canopy trees. Condition of the ground cover is an important factor influencing abundance of prey for RCWs. Group size and/or reproduction is negatively affected by dense stands of pines and positively correlated to percentage of herbaceous groundcover. On 149 acres that do not currently have herbaceous groundcover, wiregrass would be planted to improve herbaceous groundcover conditions. The four clearcuts proposed mainly consist of stunted slash pine on xeric sites. It is unlikely that these stands at their current rate of growth would meet the criteria for good quality foraging habitat in the near future. These stands would be cut and converted to longleaf.

There is one cluster that would have their foraging habitat affected by the clearcuts in compartment 1 (stands 8 and 11). Cluster 01.02 would lose approximately 64 acres from within its half-mile foraging range. This would reduce its estimated total suitable foraging habitat from approximately 249 acres to approximately 183 acres, within acceptable standards. The clearcuts would not fragment foraging because other foraging is available surrounding the clearcuts allowing birds fly around these areas without being exposed. The clearcut in compartment 5 stand 1 falls within a foraging partition but this cluster only contains one historic tree and is not active.

All log landings would be at least 200 feet from known RCW cavity trees. Timber and road contracts would prohibit harvest, hauling, and/or roadwork within active RCW clusters during the nesting season, April 1 through July 31.

Effects from herbicide are expected to be negligible. Due to feeding habits and food source habits; this species is not likely to come in direct contact with herbicides. This species forages on the bark of pine trees which will not receive herbicide spray so it is unlikely that individual birds would ingest enough contaminated insects to be affected.

Cumulative Effects

This alternative when combined with past, present, and future management activities is expected to be beneficial for RCWs. The proposed thinning treatments and hardwood control would open up the canopy stimulating groundcover. Prescribed burning would initially improve and then maintain these more open conditions favored by the RCW.

Alternative C (No Herbicide)

Direct and indirect effects under this alternative are expected to be similar to Alternative B, but there would be no effects from herbicide. Without herbicide application, hardwood removal is expected to be less effective because mechanical removal and prescribed burning frequently only top kill the targeted vegetation. This alternative combined with prescribed burning is likely to improve RCW habitat. The proposed action would initially decrease the amount of midstory vegetation but would not be as effective without the use of herbicide. Aggressive prescribed burning and additional mechanical treatments may be needed to maintain an open midstory.

Bachman's Sparrow

Bachman's sparrows are found in the southeastern United States. Most of the populations live in Florida and along the Gulf Coast. They are also found as far north as the Indiana-Michigan border and as far west as the Arkansas-Oklahoma border. In the winter, Bachman's sparrows are especially secretive and little is known of their winter habits. Their winter range seems to be limited to the coastal southeastern U.S. This species is mostly found in open oak and pine forests with abundant grasses. They are most often found in forests with wiregrass (*Aristida*) or broomsedge (*Andropogon*). Populations are highest in areas where forest fires are regular, eliminating hardwood understory shrubs. Bachman's sparrow populations disappear 4 to 5 years after a burn. Much of their original habitat, open pine forests, has been logged throughout their range, forcing the species into marginal habitats such as forest edges and utility rights-of-way. In the marginal habitats, hardwood understory shrubs are discouraged by poor soils, fires, or human management (Dewey and Darin 2007).

Alternative A No Action

Direct and Indirect Effects

Under the no action alternative, Bachman's sparrow trends in this area would be expected to show no change or a decline in the project area. Much of the potential Bachman's sparrow habitat in the project area suffers from hardwood encroachment and an over-abundance of a pine overstory. An over-abundance of hardwoods and a closed pine canopy causes a decrease in herbaceous groundcover due to competition for sunlight and nutrients. Under this alternative habitat conditions would remain poor in hardwood encroached areas.

Cumulative Effects
The continuation of prescribed burning alone would likely not improve habitat enough in the project area to result in any noticeable increase of sparrow numbers. When herbaceous groundcover is lost, potential nesting habitat is reduced and prescribed fire cannot maintain quality habitat due to the lack of fine fuels needed to carry fire across the landscape. Although prescribed burning is a necessary component of Bachman's sparrow management, with the existing state of the pine stands in the project area, application of routine prescribed burning alone may not provide long-term suitable habitat.

Alternative B (Proposed Action)
Direct and Indirect Effects
This action alternative would contribute to improving habitat for the Bachman's sparrow. Thinning pine stands, mechanical vegetation removal, and herbicide applications would control woody vegetation, thin the pine overstory, and increase herbaceous vegetation needed for quality Bachman's sparrow habitat. Herbicide application is not likely to directly affect this species because herbicide would be applied directly to target vegetation, reducing the possibility of forage contamination (grass seeds and insects). This species is a ground nester, and it is not likely to be present in herbicide application areas because these areas would not provide suitable nesting habitat. Bachman's sparrows prefer open, well-burned pine stands. It is unlikely a substantial overall population difference would be realized due to this one project but numbers may increase in the project area.

Cumulative Effects
The effects of this project, other ongoing projects, and future projects that restore the open pine system would positively influence Bachman's sparrow numbers over time. Project activities would decrease canopy cover and stimulate groundcover. Prescribed burning would then maintain openness and herbaceous groundcover favored by Bachman's sparrow. An increase in Bachman's sparrow population size would be expected as the desired future condition for the entire Forest is attained.

Alternative C – No Herbicide
Direct and Indirect Effects
This action alternative could have a positive effect on Bachman's sparrow habitat by ensuring an open pine canopy in a shorter time period then burning alone. However mechanical treatment frequently only top kills vegetation and repeated treatments may be needed to kill the undesirable vegetation.

Cumulative Effects
This alternative when combined with prescribed burning would have beneficial cumulative effects for Bachman's sparrow. This alternative would open up the canopy with mechanical vegetation removal and tree thinning, and prescribed burning would stimulate the herbaceous groundcover needed for nesting and foraging. However, mechanical vegetation treatments are not likely to be as effective as herbicide treatments because mechanical treatment primarily only top kills vegetation.

Management Indicator Species – Plants

In 2011, the National Forest in Florida amended the forest plan (amendment 10) which changed the MIS species list. Many individual plant species were taken out of this list in favor of plant composition groups and new MIS species which can more easily be monitored. Plant composition groups and new individual species include:

Perennial Fire-Dependent Graminoids *(such as: wiregrass, pineywoods dropseed, chapman's beaksedge, toothache grass, hairy muhly, Florida toothache grass)* – an abundance of this plant composition group indicates healthy flatwood, sandhill, and savanna habitat.
Saw Palmetto – This species is primarily found in flatwoods. It is a good indicator of the effectiveness of prescribed burning. An overabundance of this species indicates degrading habitat conditions.

Titi – This species is found in wetland edges and flatwoods and provides a good indicator of the effectiveness of prescribed burning. Encroachment by this species indicates degrading habitat conditions.

Woody Shrubs/ Trees *(such as: gallberry, large gallberry, fetterbush, sweet pepper bush, sweetgum, loblolly bay, water oak)* These species are primarily found in flatwoods, and the overall density of these species is a good indicator of management effectiveness. An overabundance of these species indicates degrading habitat conditions.

Since the analysis area occurs in sandhill and flatwoods habitats all MIS plant groups will be addressed.

Perennial Fire-dependent Graminoids

Alternative A (No Action)
Under alternative A, this plant group is expected to decline in the analysis area. While prescribed burning does benefit these species, it is not likely that prescribed burning alone can significantly increase graminoid density. These species are light dependent. The primary risk factor repeatedly noted for many of these plants species is habitat conversion to pine plantations and subsequent shading/competition for resources. Individuals would likely continue to be suppressed or otherwise impacted by the lack of sunlight. Vegetative changes would be limited to those resulting from natural phenomena and prescribed burning. Perennial fire-dependent graminoids would continue to lose vigor in the analysis area.

Alternative B (Proposed Action)
Individuals may be crushed, broken, uprooted, buried or otherwise impacted during the proposed management actions due to the use of heavy equipment for logging, mechanical vegetation and herbicide treatments. Impacts to individuals from herbicide application could include direct or indirect deposition from unintentional spraying, spray drift, or contaminated water/soil movement. If sprayed accidentally, even at the low application rates used by the Forest Service, non-target vegetation could be damaged. Selective application methods would be employed and would minimize potential adverse effects.

It is anticipated that the woody vegetation treatments (herbicide application) would improve conditions for these plant species by reducing the shrubs and, when combined with prescribed burning, would result in increased graminoid abundance.

Long-term positive benefits would be expected from implementation of this alternative. These species evolved in the longleaf pine-wiregrass community and require an open, fire-maintained landscape. The species under consideration are shade intolerant and would benefit from the proposed action. Herbicide application and timber harvest would open up the canopy allowing more light to reach the forest floor. This would make habitat conditions more favorable for fire dependent graminoids. This alternative when combined with past, present, and future activities is expected to improve habitat conditions for these species.

Alternative C (No Herbicide)
As in Alternative B, individuals may be crushed, broken, uprooted, buried, or otherwise impacted during the proposed management actions. Use of prescribed fire alone, with the existing vegetative conditions, may not be as effective at reducing the woody vegetation competition as in Alternative B. The risk with this alternative may be slightly smaller as the extra component of herbicide application is not included. When combined with past, present, and future management activities, there would likely be long-term habitat improvement for these herbaceous plants, but activities may be less effective without the use of herbicides.

Saw Palmetto

Alternative A (No Action)
Under this alternative palmetto abundance is expected to stay the same. Prescribed fire would maintain palmetto abundance keeping this species from becoming over abundant in the analysis area. No cumulative effects are expected because no actions would take place.

Alternative B (Proposed Action)
While saw palmetto is native to sandhills and flatwoods habitats, an overabundance of this species can decrease diversity and shade out herbaceous groundcover. Individuals may be crushed, broken, uprooted, buried or otherwise impacted during the proposed management actions due to the use of heavy equipment for logging, mechanical vegetation and herbicide treatments. Palmetto would be reduced in high traffic areas and herbicide treatment sites, but palmetto in lower trafficked areas is not expected to perish. This alternative when combined with past, present, and future activities is expected to slightly reduce palmetto in the analysis area. Palmetto damaged by timber operations and herbicide when combined with prescribed burning would decrease, stimulating herbaceous ground cover and increasing diversity.

Alternative C (No Herbicide)
As in Alternative B, individuals may be crushed, broken, uprooted, buried, or otherwise impacted during the proposed management actions. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area.

Titi

Alternative A (No Action)
Titi abundance in the analysis area is expected to show no change or slightly increase under this alternative. No actions would take place under this alternative leaving prescribed burning as the only current action to control titi. Prescribed burning would maintain current conditions in some areas while decreasing titi abundance in others depending on fire intensity. No past, present, or future activities are expected to be cumulative with this alternative.

Alternative B (Proposed Action)
Under this alternative titi abundance is expected to slightly decrease. Individuals may be crushed, broken, uprooted, buried or otherwise impacted during the proposed management actions due to the use of heavy equipment for logging, mechanical vegetation, and herbicide treatments. Past, present and future forest service activities when combine with this alternative are expected reduce titi in the analysis area. Proposed activities combined with prescribed burning would increase fine fuels allowing fire to carry farther pushing the titi back towards the wetland edges. A reduction in titi would lead to increased herbaceous groundcover and plant diversity.

Alternative C (No Herbicide)
As in Alternative B, individuals may be crushed, broken, uprooted, buried, or otherwise impacted during the proposed management actions. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area.

Woody Shrubs/ Trees

Alternative A (No Action)
Under this alternative, woody shrubs and trees are expected to slightly increase or maintain current levels of abundance. While these are native to the ecosystem and do provide forage for some wildlife species, an overly stocked stand can reduce herbaceous ground cover needed to support the crucial fire regime that maintains quality flatwoods habitat. Prescribed fire does reduce the abundance of these species, but once these species become over abundant prescribed fire does not burn effectively. The no action alternative when combined with past, present and future management activities would cause onsite tree growth to slow or go unchanged.

Alternative B (Proposed Action)
Alternative B is expected to reduce woody trees and shrubs in the project area. Individuals may be crushed, broken, uprooted, buried or otherwise impacted during the proposed management actions due to the use of heavy equipment for logging, mechanical vegetation and herbicide treatments. These actions would reduce overabundance of these species allowing more herbaceous groundcover to establish and carry fire more effectively through the project area. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area.

Alternative C (No Herbicide)
As in Alternative B, individuals may be crushed, broken, uprooted, buried, or otherwise impacted during the proposed management actions. Use of mechanical and prescribed fire alone, with the existing vegetative conditions, may not be as effective at reducing the woody vegetation competition because herbicide would not be used. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area, but would not be as effective with the absence of herbicide application.

Sandhill Offsite Trees

Alternative A (No Action)
Under this alternative, the condition of offsite trees is expected to deteriorate over time. An overabundance of these tree species can reduce herbaceous ground cover needed to support the crucial fire regime that maintains quality sandhill habitat. Prescribed fire does reduce offsite tree abundance, however once the trees reach mid-story size prescribe burning becomes less effective. The no action alternative when combined with past, present, and future management activities would cause offsite trees to slightly increase or not change.

Alternative B (Proposed Action)
Alternative B is expected to reduce the abundance of sandhill onsite and offsite trees in the project area. Individuals may be crushed, broken, uprooted, buried or otherwise impacted during the proposed management actions due to the use of heavy equipment for logging, mechanical vegetation and herbicide treatments. These actions would reduce overabundance of these species allowing more herbaceous groundcover to establish and carry fire more effectively through the project area. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area.

Alternative C (No Herbicide)
As in Alternative B, individuals may be crushed, broken, uprooted, buried, or otherwise impacted during the proposed management actions. Use of mechanical and prescribed fire alone, with the existing vegetative conditions, may not be as effective at reducing the woody vegetation competition (offsite trees) because herbicide would not be used. Without herbicide application, hardwood removal is expected to be less effective because mechanical removal and prescribed burning frequently only top kill the targeted vegetation. These activities when combined with past, present and future management activities such as prescribed fire would help achieve desired management goals for the project area, but would not be as effective with the absence of herbicide application.

Proposed, Endangered, Threatened and Sensitive Species (PETS)

A biological assessment (BA) and a biological evaluation (BE) were prepared to determine the likely effects of the alternatives on PETS animals and/or their habitat. The tables below summarize the determinations. See the BA or BE for more detail.

The standards of protection for USFWS listed species are different from those for FS listed sensitive species because of the differences in the degree of endangerment. PET species are protected both as individuals and at the population level, while sensitive species are generally protected at the population level only. Because of this, determining and stating the potential effects on PET species is not the same as deciding the possible effects for Sensitive species.

Table 6. The conceptual relationship between analysis and findings for PET species is as follows:

	Type of Effects Identified	**Corresponding Determination of Effect**
1.	No effects (not ever, any)	"No effect"
2.	Discountable, insignificant or completely beneficial effects	"May affect, Not likely to adversely affect"*
3.	Adverse effects	"May affect, Likely to adversely affect"*

*Both 2 & 3 determinations may be referred to as "may affect" determinations under the 1986 ESA regulations, but without further elaboration, the term "may affect" could be misunderstood.

Alternative A (No Action)
The No Action alternative would have **No Effect** on RCWs, frosted flatwoods salamanders, and eastern indigo snakes because no activities would take place and habitat conditions would not change.

The No Action Alternative would have **No Effect** on the gray bat, wood stork, Gulf sturgeon, fat three-ridge mussel, purple bank climber mussel, shiney-rayed pocketbook mussel, Ochlockonee moccasinshell mussel, oval pigtoe mussel, Harper's beauty, white-birds-in-a-nest, Godfrey's butterwort, or Florida skullcap.

Alternative B (Proposed Action)
Implementation of Alternative B is **Not Likely to Adversely Affect** the eastern indigo snake, frosted flatwoods salamander, or RCW, and may have beneficial effects over the long term by creating and maintaining the open stand structure characteristic of this system and known habitat requirements. The FP has a "May Affect" determination for the eastern indigo snake because individuals could be killed by heavy equipment. Unfortunately, indigo snakes appear to be very rare on the ANF, records of occurrence are old and infrequent. The chances of harming one with this project are slight; therefore, a Not Likely to Adversely Affect determination is more appropriate.

The Proposed Action alternative would likely have **No Effect** on the gray bat, wood stork, flatwoods salamander, Gulf sturgeon, fat three-ridge mussel, purple bankclimber mussel, shiney-rayed pocketbook mussel, Ochlockonee moccasinshell mussel, oval pigtoe mussel, Harper's beauty, white-birds-in-a-nest, Godfrey's butterwort, or Florida skullcap.

Alternative C (No Herbicide)
Implementation of Alternative C is **Not Likely to Adversely Affect** the eastern indigo snake, frosted flatwoods salamander, or red-cockaded woodpecker and may have beneficial effects

over the long term by creating and maintaining the open stand structure characteristic of this system. The FP has a "May Affect" determination for the eastern indigo snake because individuals could be killed by heavy equipment. Unfortunately, indigo snakes appear to be very rare on the ANF, records of occurrence are old and infrequent. The chances of harming one with this project are slight; therefore, a Not Likely to Adversely Affect determination is more appropriate.

Alternative C would likely have **No Effect** on the gray bat, wood stork, Gulf sturgeon, fat three-ridge mussel, purple bankclimber mussel, shiney-rayed pocketbook mussel, Ochlockonee moccasinshell mussel, oval pigtoe mussel, Harper's beauty, white-birds-in-a-nest, Godfrey's butterwort, or Florida skullcap.

Table 7. Summary of the TES species effects determinations for the Telogia Project January 2013.

SPECIES	ALT A	ALT B	ALT C
*Gray bat	No Effect	No Effect	No Effect
*Wood stork	No Effect	No Effect	No Effect
*RCW	Not Likely	Not Likely	Not Likely
*Harperocallis flava	No Effect	No Effect	No Effect
*Macbridea alba	No Effect	No Effect	No Effect
*Scutellaria floridana	No Effect	No Effect	No Effect
*Pinguicula ionantha	No Effect	No Effect	No Effect
*Indigo snake	Not Likely	Not Likely	Not Likely
*Flatwoods salamander	Not Likely	Not Likely	Not Likely
*Gulf sturgeon	No Effect	No Effect	No Effect
*Mollusks	No Effect	No Effect	No Effect
Gopher tortoise	No Impact	May Impact	May Impact
Sensitive aquatic animals	No Impact	No Impact	No Impact
Sensitive terrestrial animals	No Impact	May Impact	May Impact
Sensitive Plants	No Impact	May Impact	May Impact

* US Fish and Wildlife Service Endangered or Threatened

Table 8. The conceptual relationship between analysis and findings for Sensitive species is as follows:

	Type of Effects Identified	Corresponding Determination of Effect
1.	No effects	"No impacts"
2.	Beneficial effects	"Beneficial impacts"
3.	Adverse effects (one of these two determinations, depending on extent of adverse effects)	"May impact individuals but not likely to cause a trend to federal listing or a loss of viability" or "Likely to result in a trend to listing or a loss of viability"

Alternative A (No Action)
The No Action alternative would likely have **No Impact** on the bald eagle, striped newts Apalachicola dusky salamander, Arogos skipper, the Dragonflys, and Aquatic Sensitive species. The project would not occur in their habitat.

The No Actions alternative would likely have **No Impact** on sensitive species in the analysis area because there would be no activities that could harm individuals and habitat conditions would not change.

Alternative B (Proposed Action)
This action alternative would likely have **No Impact** on the bald eagle, striped newts, Apalachicola dusky salamander, Arogos skipper, the Dragonflys, and Aquatic Sensitive species. The project would not occur in their habitat.

This alternative **May Impact Individuals but Is Not Likely to Cause a Trend to Federal Listing or a Loss of Viability** for Bachman's sparrow, Florida pine snake, Apalachicola kingsnake, gopher tortoise, and Florida black bear. This project poses low risk to these sensitive animal species populations except for the slight possibility of injury or death due to contact with heavy equipment. These species, however, are mobile and would more likely leave the project areas while proposed activities would be taking place minimizing possible direct impacts. Effects from herbicide are expected to be negligible to nonexistent for these species. Road management activities such as road maintenance, road reconstruction, and road construction would not affect sensitive species that may be present in project area. Roads would not be barriers because forest roads are narrow, and have swales instead of ditches. Unlike ditches, swales have gradual slopes that do not create barriers for small fauna. Road management activities would not increase hunting or poaching in the project area because no additional road access would be grated as a result of this project. Roads to receive maintenance or reconstruction are roads that are already open to the public, and road construction would take place on temporary roads that would be closed when project activities were completed. Alternative B **May Impact Individuals, But Is Not Likely to Cause a Trend to Federal Listing or a Loss of Viability** for sensitive plant species that occur in the affected area (Sandhill and Flatwoods) because these species are light dependent. A risk remains that individuals may be impacted, damaged or killed during the proposed management actions (thinning, mechanical shrub reduction, planting longleaf, herbicide application), however it is important to note that overall habitat improvement is the anticipated outcome of the project.

Alternative C (No Herbicide)
This action alternative would likely have **No Impact** on the bald eagle, striped newts Apalachicola dusky salamander, Arogos skipper, the Dragonflys, and Aquatic Sensitive species. The project would not occur in their habitat.

This action alternative **May Impact Individual Sensitive Species but Is Not Likely to Cause a Trend to Federal Listing or a Loss of Viability**. This project poses low risk to sensitive species populations except for the possibility of injury or death due to contact with heavy equipment. Effects for these species would be similar to the proposed action except there

would be no herbicide used. Overall habitat improvement is also expected in this alternative; however, it is not expected to be as effective without herbicide.

Table 9. Summary of the sensitive and proposed species effects determinations for the Munson Hills Project January 2013. For a list of individual sensitive plant species represented by habitat communities below see the biological evaluation.

Sensitive aquatic animals and animals that use aquatic habitats	No Impact	No Impact	No Impact
Apalachicola Kingsnake	No Impact	May Impact Indv.	May Impact Indv.
Florida Pine Snake	No Impact	May Impact Indv.	May Impact Indv.
Florida Black Bear	No Impact	May Impact Indv.	May Impact Indv.
Bachman's Sparrow	No Impact	May Impact Indv.	May Impact Indv.
Gopher tortoise	No Impact	May Impact Indv.	May Impact Indv.
Striped newt	No Impact	No Impact	No Impact
Sandhills	No Impact	May Impact Indv.	May Impact Indv.
Mesic-Wet Flatwoods	No Impact	No Impact	No Impact
Strands, Cypress Ponds, Swamps	No Impact	No Impact	No Impact
Savannas, Bogs, Seepage Slopes	No Impact	No Impact	No Impact
Pond, Lake Margins	No Impact	No Impact	No Impact
Aquatic	No Impact	No Impact	No Impact
Slope, Hardwood Forest	No Impact	No Impact	No Impact
Bluffs	No Impact	No Impact	No Impact
River/Streambanks	No Impact	No Impact	No Impact
Floodplains	No Impact	No Impact	No Impact

Vegetation

Timber

Existing Condition

The analysis area has young slash pine plantations between 25-50 years old and longleaf pine stands that range from 35-85 years old. These stands are interspersed with hardwood and mixed pine/hardwood swamps and stream buffers.

Mature longleaf pine stands are represented within the analysis area having site indexes ranging from 60-70. Their ages are from approximately 60-100+ years old and consist of trees with favorable crown ratios (40-60%) and growing space. The basal areas have a range of 50-60 sq. ft. There are some occasional slash pines growing with the longleaf pine. These stands are not proposed to be treated at this time.

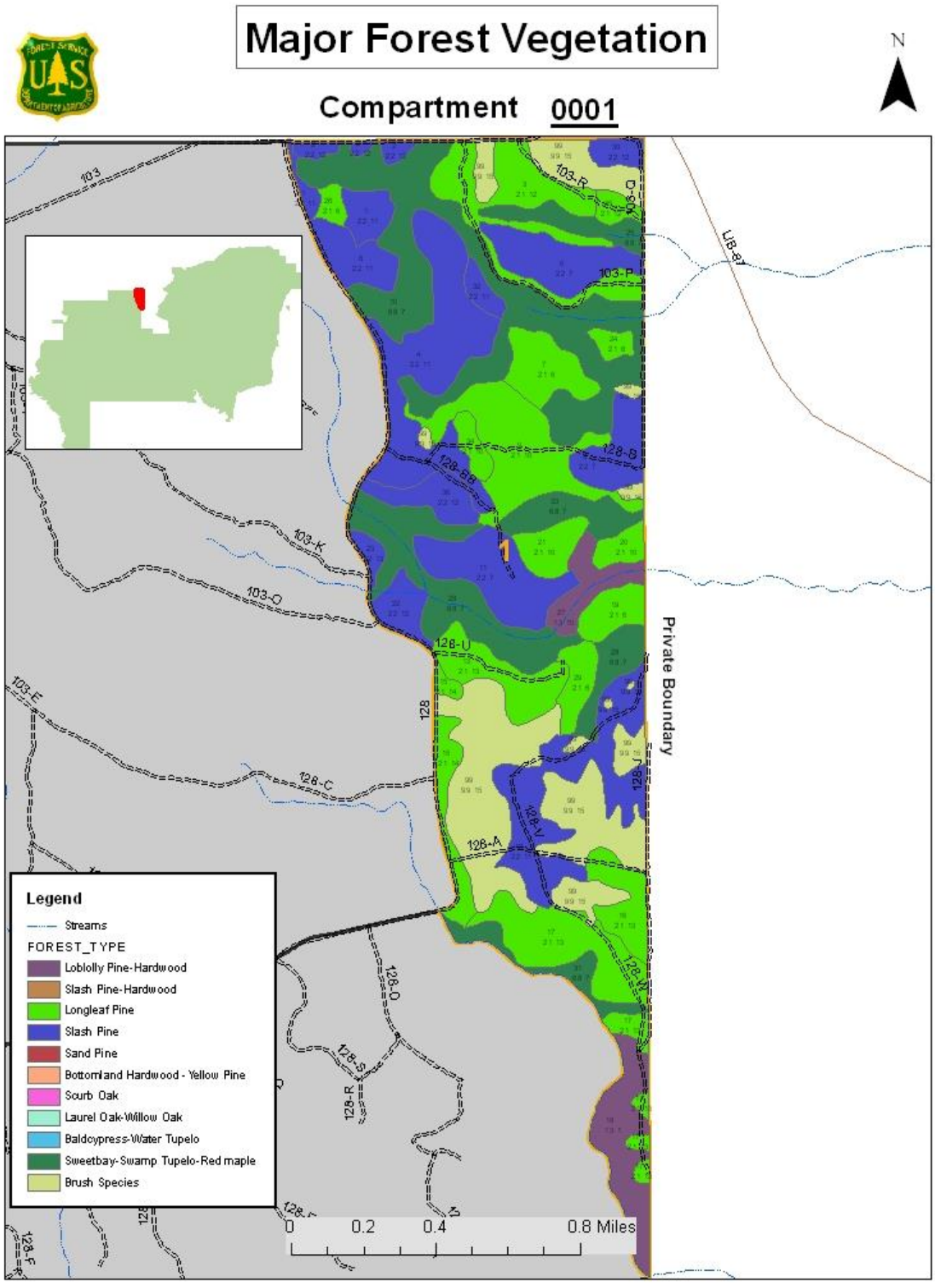
Slash pine plantations are generally classified as immature and mature poletimber. Their site indexes range from 60-70. The average basal areas range from approximately 70-120 sq. ft. /ac. Within most stands the diameter at breast height (DBH) ranges from 3-11 inches. Growing space is limited which has resulted in decreasing levels of radial growth. The understory is becoming increasingly shaded resulting in the suppression of herbaceous groundcover vegetation.

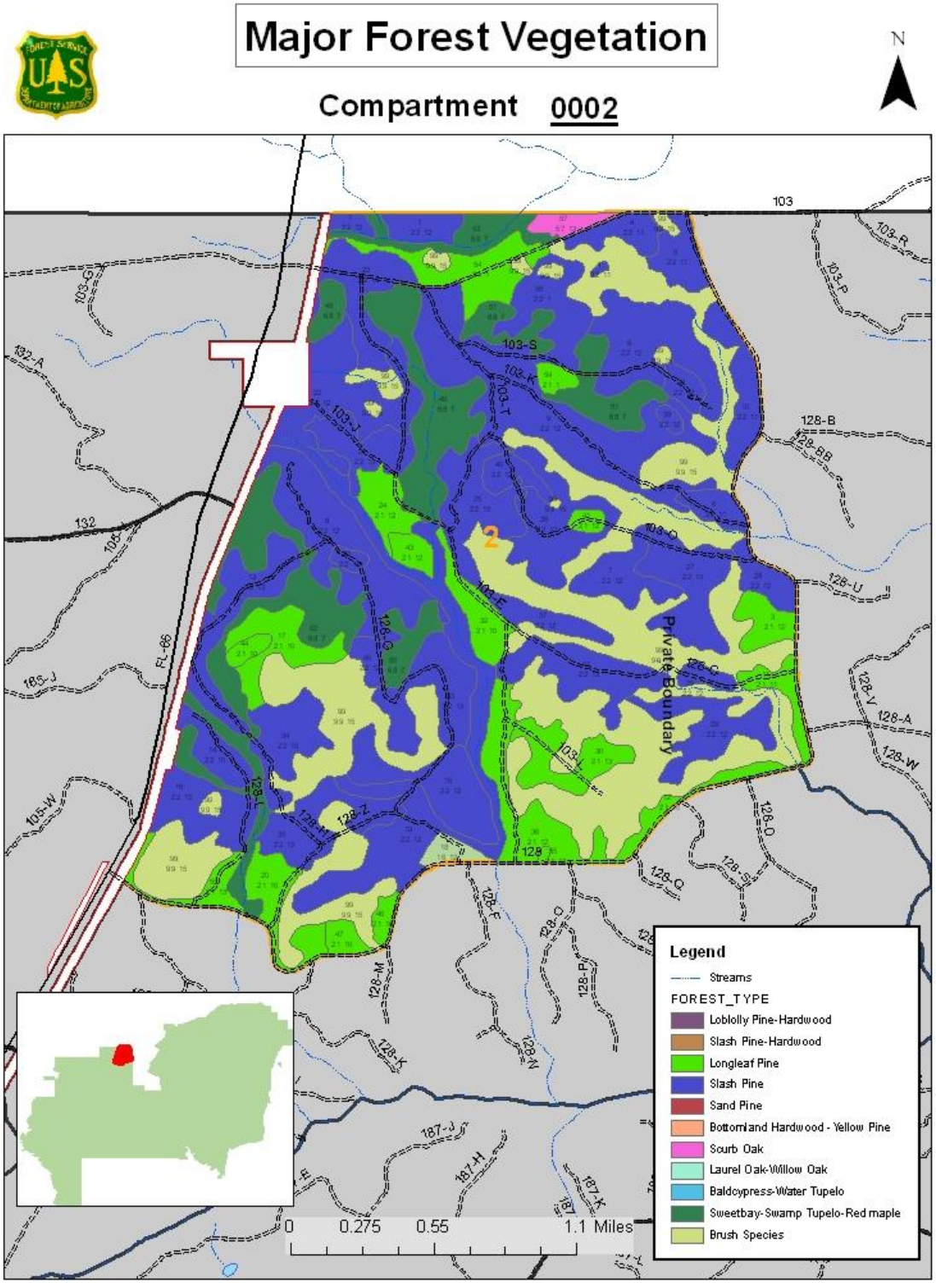
The off-site stands are very far away from the desired condition of the forest described in the forest plan. The preferred trees species for this site would be longleaf pine. Clearcut with reserves would be best cutting method for converting these off-site slash pine sites to longleaf. Seed tree or shelterwood regeneration cuts would fail to fully restock the stand due to the lack of longleaf trees required to serve as a seed source for regeneration. For this reason clearcutting was chosen as the optimal cutting method. The longleaf pine volunteers are generally clumped or sporadic and would not provide a seed source to fully restock the stand.

The National Forest Management Act of 1976 (NFMA) states that the Forest Service "shall insure that, prior to harvest, stands of trees throughout the National Forest System shall generally have reached the culmination of mean annual increment of growth (CMAI) (calculated on the basis of cubic measurement or other methods of calculation at the discretion of the Secretary)" (NFMA 1976). The clearcuts proposed under the Telogia Analysis Area are exempt from conforming to CMAI standards based on the forestwide goals outlined in the Forest Plan to "Maintain or, where necessary restore ecosystem composition, structure, and function within the natural range of variability in all ecosystems, with emphasis on longleaf pine-wiregrass…."(USDA 1999b pg. 2-3). To accomplish the goals outlined, the Forest Plan has set a long term objective to "restore all off-site slash pine to appropriate native vegetation" (USDA 1999b pg. 2-5). In addition, the four proposed clearcut areas are 50 years of age and are exhibiting signs of stunted growth as evidenced by their smaller than normal crowns.

Table 10. Age-class Distribution by Forest Type

Forest Type	Acres by Age class														
	1-	11-	21-	31-	41-	51-	61-	71-	81-	91-	101-	111-		Total	Percent
	10	20	30	40	50	60	70	80	90	100	110	120	MISS		
Loblolly pine-hardwood	37										24			61	1
Virginia pine-oak							13							13	1
Longleaf Pine		76	108			43		97	250	86	10	142		812	13
Slash Pine		51	549	840	304		58	1227	61					3090	47
Scrub Oak							12		50					62	1
Baldcypress-water tupelo									18	174				192	3
Sweetbay-swamp tupelo-red maple								384	56	254	142			837	13
Undrained flatwoods													5	5	1
Brush species												840	746	1586	24
AC	37	127	657	840	304	43	83	1708	435	514	176	982	751	6657	**Total**
%	1	2	10	13	5	1	2	26	7	8	3	15	12	100	**Percent**


Major Forest Vegetation
Compartment 0001
N
Private Boundary
Legend
Streams
FOREST_TYPE
Loblolly Pine-Hardwood
Slash Pine-Hardwood
Longleaf Pine
Slash Pine
Sand Pine
Bottomland Hardwood - Yellow Pine
Scurb Oak
Laurel Oak-Willow Oak
Baldcypress-Water Tupelo
Sweetbay-Swamp Tupelo-Red maple
Brush Species
0 0.2 0.4 0.8 Miles


Major Forest Vegetation
Compartment 0002
N
Private Boundary
Legend
Streams
FOREST_TYPE
Loblolly Pine-Hardwood
Slash Pine-Hardwood
Longleaf Pine
Slash Pine
Sand Pine
Bottomland Hardwood - Yellow Pine
Scurb Oak
Laurel Oak-Willow Oak
Baldcypress-Water Tupelo
Sweetbay-Swamp Tupelo-Red maple
Brush Species
0 0.275 0.55 1.1 Miles

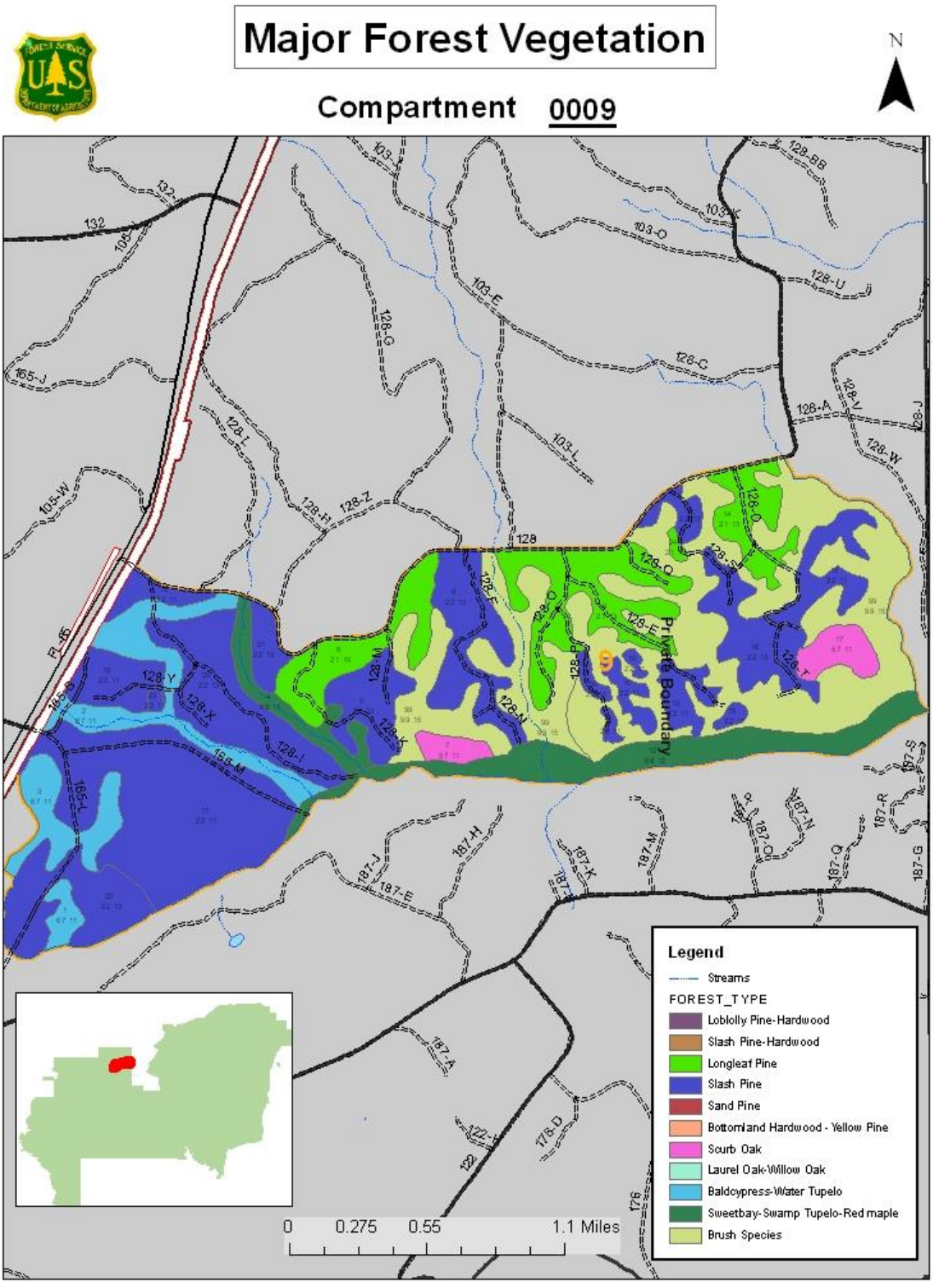

Major Forest Vegetation
Compartment 0009
N
Private Boundary
Legend
Streams
FOREST_TYPE
Loblolly Pine-Hardwood
Slash Pine-Hardwood
Longleaf Pine
Slash Pine
Sand Pine
Bottomland Hardwood - Yellow Pine
Scurb Oak
Laurel Oak-Willow Oak
Baldcypress-Water Tupelo
Sweetbay-Swamp Tupelo-Red maple
Brush Species
0 0.275 0.55 1.1 Miles

Table 11. Treatment and Volume Summary.

Compartment	Stand	Treatment Acres	Treatment	Approximate Volume Removed - CCF		
				Pulpwood	Sawtimber	Total
1	4	74	Thin	660	0	660
1	5	39	Clearcut	651	104	755
1	6	20	Thin	99	0	99
1	8	22	Clearcut	245	49	295
1	11	42	Clearcut	153	27	180
1	12	69	Thin	393	6	399
1	22	13	Thin	156	137	293
1	36	16	Thin	122	0	122
2	5	27	Thin	572	193	765
2	6	18	Thin	134	0	134
2	10	38	Thin	114	0	114
2	13	62	Thin	496	0	496
2	21	40	Thin	318	0	318
2	23	54	Thin	611	0	611
2	25	61	Thin	512	0	512
2	26	63	Thin	448	268	717
2	27	62	Thin	648	0	648
2	28	21	Thin	112	51	162
2	31	59	Thin	606	0	606
2	33	61	Thin	553	0	553
2	34	48	Thin	402	0	402
2	35	43	Thin	429	0	429
2	38	13	Thin	79	15	95
2	40	17	Thin	86	0	86
2	41	7	Thin	49	33	82
2	47	11	Thin	45	30	75
9	5	59	Thin	520	0	520
9	8	94	Thin	962	0	962
9	9	127	Thin	282	0	282
9	10	8	Thin	40	0	40
9	13	17	Thin	224	0	224
9	14	55	Thin	343	0	343
9	15	46	Clearcut	92	0	92
9	16	71	Thin	645	0	645
9	18	20	*UEAM	101	26	127
9	20	130	Thin	1235	0	1235
9	21	24	Thin	242	0	242
9	23	3	Thin	32	19	51
9	302	4	Thin	27	0	27
9	303	17	Thin	129	0	129
9	305	6	Thin	52	0	52
9	304	28	Thin	168	0	168
9	306	5	Thin	38	0	38
					Total	14785

*UEAM: Uneven-aged Management

Groundcover

The groundcover is mainly composed of saw palmetto, and gallberry, in combination with fetterbush, titi, wax myrtle, blueberry, sweetbay, huckleberry, or holly. Wiregrass, runner oak, broomsedge and various other grasses and forbs can also be found in the groundcover. Surrounding the pine flatwoods are swamps, low areas and natural drainages that contain bottomland hardwoods. Between the pine ridges and bottomlands are usually a gently sloping, wet flatwoods ecotone. These areas are characterized by a sparse overstory of pine with either thick, shrubby understory and very sparse groundcover, or a sparse understory and dense groundcover of hydrophytic herbs and shrubs.

Old Growth

Some Old Growth stands, as designated by the forest plan, are within the analysis area. These old-growth stands were designated for the whole forest according to the guidance provided in Forestry Report R8-FR 62 at the projected acreages for individual management area (described in the Forest Plan on page 2-6). Many of the designated stands do not meet the old growth parameters in the report, but these stands were designated because these were the oldest stands and most likely to achieve the old-growth parameters first.

Table 12. Designated Old Growth Stands within Telogia Analysis Area

Old Growth Type	Comp	Stand	Acres	Year of Origin	Forest Type	DFC MA
Upland longleaf and south Florida slash pine forest, woodland, and savanna	1	7	24	1897	21	7.1
	1	9	55	1897	21	7.1
	1	19	15	1897	21	7.1
	1	20	10	1897	21	7.1
	1	24	5	1897	21	7.1
	1	29	12	1895	21	7.1
	1	34	10	1897	21	7.1

Non-Native Invasive Species

A wide variety of non-native invasive species occur on the ANF. A complete inventory of the forest has not been conducted but many species are known to occur throughout the forest, mostly concentrated along roads and disturbed areas. As a coordination measure, contracts for timber sales, road reconstruction or maintenance, and site preparation that involve equipment would contain equipment cleaning clauses to reduce the risk of spread or introduction of exotic plants.

If a population of non-native invasive species is discovered in the analysis area it could be treated under the authority established in the Environmental Assessment for Non-Native Invasive Plant Control on the Apalachicola National Forest. The decision notice for this analysis was approved on 7/15/2004.

Alternative A (No Action)
Under Alternative A, slash pine plantations would continue to lose vigor, slow their growth and continue through the stem exclusion stage of development. As canopy closure continues (next 5-10 years) herbaceous understory vegetation would continue to decline. In studies such as Means (1997) light was determined to be the limiting factor in the reestablishment of wiregrass in slash pine plantations. Stagnation would also continue to occur throughout slash pine plantations. Once a stand stagnates it may not be able to respond to thinning in the future. Longleaf stands would continue to be overstocked with limited radial growth. As canopy closure continues shade tolerant woody species will begin to dominant the understory and midstory. A functional longleaf/wiregrass characteristic would become non-existent and more difficult to restore. Under the No Action alternative old growth stands would continue to provide a variety of values such as biological diversity and recreation. Encroachment of undesired plant and tree species would occur in small pockets and could potentially alter the growth type of the stand.

Cumulative Effects
Prescribed burning would continue every 3 to 4 years which would aid in limiting complete woody dominance of the understory. Prescribed burning alone would not restore herbaceous understory species due the continued overstory shading that would occur under Alternative A. No other past, present or future management activities were identified for analysis.

Alternative B (Proposed Action)
Thinning would reduce the basal area of selected stands to the target amount, which is generally 50ft²/ac by removing selected rows in the individual stands. The removal of pine trees would reduce the amount of pine needle litter that falls to the forest floor. Pine straw is one of the fuel types that provide continuity across a forest stand allowing fire to spread evenly. It has been determined by our fuels specialist and a biologist that this pine straw reduction would not cause a reduction in our ability to prescribe burn these stands effectively. Harvesting operations, such as thinning pose a risk of direct mortality to sensitive plant species, but the benefit to the population as a whole would be positive. Thinning would open the overstory of these stands and reduce the competition between residual trees for sunlight, moisture, and nutrients, causing an increase in radial growth. Herbaceous vegetation would also respond to the increase of sunlight, moisture, and nutrients (Means 1997). Thinning of pines stimulates herbaceous growth and abundance in longleaf stands (Harrington and Edwards 1999). Under Alternative B, hardwood control treatments are proposed for stand 7 of Compartment 1. This would be accomplished using the herbicide hexazinone. These treatments would be done in accordance with the *Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region* report which allows for management activities for restoration, protection, or maintenance of old-growth (USDA 1997). The use of herbicides would not alter the endemic nature of the stand. Results from treatment would resemble the disturbance patterns of natural fire events.

Clear-cutting and chemical site prep could have a short term negative effect on existing herbaceous groundcover in the stands. Herbaceous groundcover in these stands is currently limited with future conditions projected to worsen with no action. Removing off-site or poorly

growing species and replanting the sites to longleaf pine should increase the site productivity of the stands involved. Currently these stands are not growing well and have stagnated. Site preparation whether herbicide or mechanical would increase the survival of the longleaf seedlings to be planted. Site preparation is designed to kill or "knock back" woody vegetation that would compete with the longleaf seedlings for sunlight, nutrients, and water.

Herbicide use to control midstory and overstory hardwoods would have the same effect on pine trees and herbaceous groundcover as thinning. The reduction in competition and opening of the forest floor to more sunlight will improve and promote graminoid dispersal. Non-target species kill can occur when applying herbicides. Mitigation measures outlined in the service contract such as not applying under certain wind or moisture conditions will reduce the risk of this occurrence.

Hexazinone is a photosynthetic inhibitor in broadleaf trees. It is readily absorbed through the roots and, to a lesser degree, through foliage (liquid formulations). Foliar absorption can be greatly enhanced by the addition of a nonionic surfactant. Hexazinone translocates upward via the xylem and is generally selective, controlling most hardwoods (Tatum 2004). Loblolly pine is somewhat more susceptible than the other, generally resistant, southern yellow pines

Triclopyr is a growth regulator. It is readily absorbed by foliage with some stem uptake. It translocates up and down in plants, and accumulates in growing tissues and the root collar.

Herbicide application would kill approximately 60% of the understory hardwoods. Application of herbicide in combination with prescribed fire would result in a reduction of hardwoods and an increase in the cover of wiregrass and other native groundcover. (Brockway, 2000) It will also aid in the survival of pine seedlings.

Planting wiregrass, longleaf, and slash pine would have the short-term effect of providing fine fuels to carry fire and structure for insects and birds. The long-term effect would result in fully stocked pine stands of desirable species and herbaceous vegetation.

Timber harvesting, road reconstruction, road maintenance, and mechanical/herbicide site preparation contracts would increase the risk of introducing non-native invasive plants into the project area. Contracts contain a clause that would require that mechanical equipment be cleaned before entering the project area and when moving from one unit to another within the project area.

Cumulative Effects

Future impacts from prescribed burns in and around the analysis area in conjunction with the proposed action would positively affect vegetation such as wiregrass, which historically are maintained through natural fire process (Brockway and Outcalt 2000). In addition, a general reduction in risk of attack from forest pathogens and wildfire is expected to occur as timber thinning is implemented along with the normal prescribed fire program. Impacts are generally limited to within the project area. The proposed treatment in alternatives C would help move some treatment stands toward the desired future condition as described in the Forest Plan, however this will be a gradual change over time.

Climate Change scenarios for the southeastern United States frequently include a moderate increase in average air temperature and a higher incidence and increased severity of droughts, fires, and hurricanes. These changes may have a variety of effects on ecosystems and processes, but planting longleaf pines and frequent prescribed fires should increase forest resistance to disease and catastrophic wildfire and increase resilience to extreme weather events (National Wild Turkey Federation 2009). In the context of climate change, the proposed activities will increase forest health and resilience to climate-related perturbation, whereas the no action alternative will produce forests that are less resistant and resilient to drought, disease, hurricanes, and insect damage.

Alternative C (No Herbicide)
Effects of Alternative C would be the same as Alternative B, except for in stands which are to be treated with herbicides for site prep. Relying primarily on mechanical treatments and/or prescribed fire in these stands would lead to aggressive re-sprouting of woody vegetation and a potential reduction in longleaf seedling survival. No management activities would occur in old growth stands under this alternative. The use of mechanical equipment and/or hand tools would alter the special values of the stand by leaving behind obvious signs of human modification.

Mechanical site preparation is a common method used throughout the southern United States. The effects of it have been well studied and disclosed. For example, past use of roller chopping on the Apalachicola National Forest has shown to be effective without producing unacceptable soil displacement. The potential effects of chopping on the vegetation would be crushed vegetation and the creation of 6-8 inch slits in the soil that may cut plant roots. The crushed vegetation forms a uniform continuous layer across the stand that aids prescribed burning about six weeks later. A single chop would kill only a small portion of the vegetation on these sites. Several studies have revealed that chopping sites that have a strong woody component causes the site to become more herbaceous.

Cumulative Effects
Cumulative effects are similar to those found in alternative B minus the effects associated with herbicide use.

SOCIAL ECONOMIC ENVIRONMENT

Public Health and Safety

The use of herbicide is often a concern to forest users, workers, and the general public regarding human health and safety.

Alternative A – No Action
No herbicide use is proposed with this alternative. There would be no potential for effects to human health from herbicide use under this alternative.

Cumulative Effects
The forest-wide prescribed burn program will continue to take place in the proposed project area. Short term exposure to smoke and fine particulates will occur locally in burn units.

Exposure would last anywhere from a few hours to a day. If herbaceous diversity diminishes in these areas due to over-shading prescribed burning could become more difficult in some areas of the project area.

Alternative B – Proposed Action

This alternative proposes the use of herbicides for woody plant control. Due to the short half-lives and fast biodegradability of the proposed products, there is a very low probability of prolonged exposure and risk. The herbicides considered for this project were selected largely for their low toxicity to humans and the environment. There is little risk that the public may unknowingly come into direct contact with treated vegetation as areas will be posted with signs or access otherwise prevented. With the mitigation measures described previously in this document, there is low probability of drift or off-site movement. The label directions place restrictions on wind speed at the time of spraying. Applications will be made close to the ground surface with equipment that produces large size droplets that do not carry far.

Herbicide labeling, which governs the types of uses, disposal, precautions for use, etc., is regulated by the EPA in accordance with FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act of 1947, with numerous additions). Based on tolerances, residue data, and environmental fate, label-use restrictions may be placed on an herbicide label.

Herbicides approved by the EPA would be used. All label requirements would be followed, as required by the EPA. Following the label ensures that the public will not come in contact with herbicide concentrations that may cause harmful effects.

Herbicide applications would be supervised by a Forest Service Certified Pesticide Applicator. This employee would ensure compliance with labeling instructions and safety methods to reduce the risk of accidents.

Risk to public health from herbicide applications has been addressed in a Risk Assessment as part of the VMEIS CP/P (Vol II, Appendix A) and supplemented by the analyses done by Syracuse Environmental Research Associates (SERA 2002, 2003a, 2003b, 2004, 2005, 2011) They document the probable effects on human health (and wildlife) resulting from typical and maximum applications, and accidental spills of herbicide. They analyze the potential for these herbicides to cause toxic effects, cancer, mutations, and birth defects. Based on the Risk Assessment in the VMEIS CP/P, the Regional Forester concluded in the Record of Decision (ROD) for the VMEIS CP/P (p. 12) that application of these herbicides, when applied under the guidelines described, provided greater health protection to workers, the public, and wildlife, than is required by published health and safety standards. Applied under the guidelines, these herbicides do not pose a significant risk to human health. These guidelines are found in Appendix A of the ROD for the VMEIS CP/P.

If label directions are not followed properly, these herbicides could cause eye and skin irritations to workers. The Apalachicola NF uses the lowest rate possible to meet its goals. For a typical application, the use of these chemicals poses a low risk to safety. Under the conditions of typical public exposure to Triclopyr or Hexazinone, no member of the public would be affected (VMEIS CP/P, Vol I, p. IV-14).

Hexazinone and Triclopyr herbicides are soluble and do not accumulate in human or animal tissue. Human and animal exposure and risk studies conducted for, or cited in, the VMEIS CP/P indicate that cumulative build up effects on human health do not occur when used at prescribed rate with appropriate application methods.

In summary, risks to public health and safety under the Proposed Action are negligible.

Cumulative Effects
The forest-wide prescribed burn program will continue to take place in the proposed project area. In the southeastern United States, prescribed burning serves as an important source of primary air pollution (Lee and others 2005). Short term exposure to smoke and fine particulates will occur locally in burn units. Refer to the Apalachicola Prescribed Burning FY 2012-2017 Environmental Assessment for more information on coordination measures to be taken to ensure minimal human health issues.
http://www.fs.fed.us/nepa/nepa_project_exp.php?project=35380.
The cumulative effect of prescribed burning and herbicide would not be significant with herbicide use occurring at least one year prior to the area being burned.

Alternative C – No Herbicide Alternative
No herbicide use is proposed with this alternative. There would be no potential for effects to human health from herbicide use under this alternative.

Cumulative Effects
The forest-wide prescribed burn program will continue to take place in the proposed project area. No other past, present or future projects where identified as adding cumulative impacts under Alternative C.

Cultural Resources

Affected Environment:
All stands and roads in the proposal were inventoried for cultural and heritage resources in 2013. To avoid impacting potential sites, the proposed action has been developed to exclude known sites.

Alternative A – No Action
In this alternative, ongoing forest management activities would have no effect on cultural and heritage resources. There would be no opportunity to locate presently unknown sites within the project area.

Cumulative Effects
No past, present or future projects were identified as potentially impacting cultural resources.

Alternative B – Proposed Action
Activities involving the operation of heavy equipment, such as timber harvesting, mechanical site preparation, road maintenance, and road reconstruction have the greatest potential of all the proposed actions to damage or destroy heritage sites.

Alternative B is not likely to have an effect on cultural or heritage resources because stands to be treated have been surveyed by our forest archeologist. There is still potential to affect undiscovered sites, but this potential is low because stands that had a high probability for cultural resources were intensely surveyed. The following coordination criteria would be set in place to minimize the effect:

- *If any heritage resources were discovered during operations all ground-disturbing activity would cease. The Forest Archeologist would determine changes to be made to the project before work would resume (Forestwide Standard & Guide HE-1).*
- *Known cultural resource sites would be protected by timber sale contract and no ground-disturbing activities would occur in these areas, which may include segments of roads (Forestwide Standard & Guide HE-2).*

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Alternative C – No Herbicides
Under this alternative herbicide for sight preparation would be replaced by mechanical methods such as chopping or prescribed burning. As with Alternative B the mechanical site prep is not likely to have an effect on cultural resources but does increase likely of damage if an undiscovered site is encountered. In addition the effects on cultural resources for Alternative C would be the slightly less than Alternative B if prescribed fire is used for site preparation.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Economics

Alternative A – No Action
The "No Action" alternative would not bring in any revenue to the United States Treasury, but it would also not cost any more than current management activities. Alternative A would not contribute to the economy of Liberty County or surrounding counties in the form of revenues and the cost of the normal prescribed burning and road maintenance would cause this alternative to have a negative net value.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Alternative B – Proposed Action
This alternative would remove approximately 14,785 CCF of pine products through timber harvest.

The following table shows the financial analysis of the alternatives. The actual revenue generated by a timber sale would be computed using final cruise data, bid prices, and costs current at the time of the sale. The cost analysis indicates a sale Net Worth of this alternative would be positive.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Alternative C – No Herbicide
Effects of Alternative C would be the less expensive than Alternative B because there are no herbicides proposed for the stands to be clearcut, which would be included in the sale economics as required reforestation.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Table 13. Financial Analysis

Base Year 2014
Inflation Rate 0.019

Revenues:				Alternative A		Alternative B		Alternative C	
			Year	Units	Inflated	Units	Inflated	Units	Inflated
Product	Units	Value/Unit	Planned	Planned	Benefits	Planned	Benefits	Planned	Benefits
Sawtimber	CCF	$78.26	2014	0	0	959	75,051	959	75,051
Pulpwood	CCF	$40.50	2014	0	0	13,826	559,953	13,826	559,953
			Total	0	0	14,785	635,004	14,785	635,004

Costs:				Alternative A		Alternative B		Alternative C	
			Year	Units	Inflated	Units	Inflated	Units	Inflated
Action	Units	Cost/Unit	Planned	Planned	Costs	Planned	Costs	Planned	Costs
Sale Preparation	CCF	$2.00	2014	0	0	14,785	29,570	14,785	29,570
Site Preparation - Herbicide	Acre	$276.53	2015	0	0	149	41,986	0	0
Site Preparation - Burn	Acre	$43.06	2015	0	0	0	0	149	6,538
Site Prep Mechanical	Acre	$191.82	2015	0	0	0	0	149	29,124
Chemical Release	Acre	$276.53	2015	0	0	110	30,996	0	0
Plant Longleaf	Acre	$492.78	2016	0	0	149	76,241	149	76,241
1st Year Survival Check (NS)	Acre	$74.43	2017	0	0	149	11,734	149	11,734
3rd Year Survival Check (NS)	Acre	$74.43	2019	0	0	149	12,184	149	12,184
Road Reconstruction	Miles	$11,793.62	2014	0	0	14	164,639	14	164,639
Road Maintenance	Miles	$12,743.75	2014	0	0	8	101,950	8	101,950
Temporary Roads	Miles	$11,616.13	2014	0	0	0.6	7,202	0.6	7,202
Sale Summary:		Total			0		476,503		439,183

Action	Units	Calculation		Alternative A		Alternative B		Alternative C	
Benefits	Dollars	Total Revenues less Roads			0		463,163		463,163
Roads and Trails	Dollars	10% Roads and Trails			0		46,316		46,316
NFF- Return to Counties	Dollars	25% Revenues			0		115,791		115,791
Action Costs	Dollars	Total Costs			0		178,793		141,473
Sale Net Worth	Dollars				0		122,263		159,583
Non Sale Related Items:									
Hardwood Control (Chemical)	Acre	$276.07	2015	0		31	8,721	0	0
Site Prep Burn (All)	Acre	$43.06	2015	0		0	0	149	6,538
Plant Native Grass Plugs	Acre	$1,010.00	2016	0		149	156,263	149	156,263
			Non-Sale Related Costs		0		1,972,760		1,931,385
(NS) Non-stocked			Grand Total Cost of Alternative		0		2,449,262		2,370,567

Infrastructure

Affected Environment:

The Transportation Plan for the Telogia Analysis Area includes roads in compartments 1, 2, and 9. There are approximately 54.2 miles of system and non-system roads in these compartments. The roads are maintained at several different maintenance levels described in the table below. The main travel arteries are graded forest roads. Most of the maintenance level 1 and 2 roads that provide back-country access to the public are of a native surface material and require high clearance vehicles. These "woods roads" are only maintained if a problem such as erosion occurs.

The Telogia project proposes to utilize most of the main access roads in the area but only 43% of the level 1 or 2 roads, and a few non-system roads. The amount of work necessary to maintain these roads will differ from location to location based on the current condition of the road and the amount of timber products to be removed.

Table 14. Miles of Roads by Operation Maintenance Level

Description	Road Maintenance Level	Miles	Used During Sale
High Degree of User Comfort	5	0	0
Suitable for Passenger Cars	3	21.96	8.11
High Clearance Vehicles	2	19.18	8.85
Basic Custodial Care (Closed)	1	7.50	4.85
Non-system – Administrative Use Only	NA	10.60	0.62
Total	NA	59.24	22.43

In 2007 District Ranger Marcus Beard issued a Decision Notice and FONSI on Motorized Route Designation for roads and trails on the Apalachicola National Forest. This decision changed the basic way we managed the road system on the forest. It no longer allowed cross-county travel and required users to say on numbered roads. It reduced the number of roads open to the public on the Apalachicola Ranger District by 968 miles and 249 miles on the Wakulla Ranger District thus reducing the road density accordingly.

In the Telogia Analysis Area the current road density is 3.3 miles per square mile of roads open to the public as compared to 4.1 miles per square mile prior to implementing the 2007 Route Designation decision.

All roads within the analysis area were analyzed to determine if current maintenance levels were appropriate. Non-system roads were assessed in order to decide if decommissioning

and/or decommissioning would benefit habitat and management needs. Upon analysis it was determined that current road density and use were appropriate for the area and thus not included in the proposed action.

Alternative A – No Action
There would be no change to the current transportation system described in Table 12 and shown in the preceding map on Page 24.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Alternative B – Proposed Action
Alternative B would include the use of approximately 0.62 miles of temporary non-system roads. These roads would only be used to extract timber from established plantation stands and would not be open to general public motorized use.

The proposed action would also include road reconstruction of approximately 13.68 miles and maintenance of 8.11 miles.

Timber harvesting would cause a temporary increase in traffic as a result of hauling timber products. The proposed roadwork would provide better access for public and/or administrative use, while protecting the environment. Temporary log landings would be placed in stands that are to be thinned.

Cumulative Effects
The Route Designation process completed in 2007 eliminated OHV use in the area. The Forest will complete a Forest-wide analysis of the transportation system in FY14 as described in 36 CFR§ 212.5. Any changes to the transportation system would be addressed in a separate site-specific analysis.

Improvement of the transportation system within the Telogia analysis area could lead to an increase in use by the general public especially during hunting season.

Alternative C – No Herbicide
Effects from Alternative C on the transportation system would be the same as Alternative B.

Cumulative Effects
Cumulative effects would be the same as under Alternative B.

Table 15. Road Maintenance, Construction and Reconstruction Cost Summary.

Road Number	Compartment	Stand	Reconstruction (Miles)	Maintenance (Miles)	Temporary (Miles)	Cost
103	2	23		2.10		$24,394
103-E	2	21, 23		1.00		$19,360
103-K	2	Haul Route	0.45			$5,227
103-O	2	26, 27, 40	0.80			$15,488
103-P	1	5	0.26			$3,020
103-S	2	38	0.83			$9,641
103-T	2	Haul Route	0.25			$2,904
128 NORTH	1, 2	(1) 4, 6, 22, 23, 36; (2) 5, 6, 10, 28		1.46		$16,959
128 SOUTH	1, 9	(1) 47 (9) 9, 13, 18, 21		3.30		$38,333
128-A	1	12		0.25		$2,904
128-B	1	8, 36	0.63			$7,318
128-BB	1	11	0.33			$3,833
128-C	2	31	1.18			$13,707
128-D	9	14, 15, 16	0.86			$9,990
128-E	9	9, 304, 305	0.87			$10,106
128-F	9	8	0.81			$9,409
128-G	2	33	1.20			$13,939
128-H	2	13, 34, 35	2.10			$24,394
128-Z	2	35	0.25			$2,904
128-I	9	18, 20, 23	0.75			$8,712
128-X	9	23	0.25			$2,904
128-K	9	5	0.55			$6,389
128-M	9	5	0.20			$2,323
128-O	9	9	0.25			$2,904
128-P	9	9, 10, 302, 303, 306	0.24			$2,788
128-R	9	16	0.16			$1,859
128-V	1	12	0.46			$5,343
128-T-1	1		0.25			$2,904
103-O-T-1	2	27	0.20			$2,323
129-P-T-1	9		0.17			$1,975
Total			13.68	8.11	0.62	$274,254.00

Visual Quality

The visual quality objectives of the analysis area are classified as either Maximum Modification or Partial Modification. These designations are based in part on distances from points of interest, such as developed recreation areas, heavily traveled recreation roads, or wilderness areas. The majority of the Telogia Sale area falls into the Maximum Modification classification. In this designation, management activities are dominant and may not appear natural when seen as foreground or middle ground, but they must relate harmoniously to the natural-appearing landscape when viewed as background (from an aerial perspective) (USDA 1999a: 3-155)

Table 16. Visual Quality Assessment

Visual Quality Objective	Acres in Analysis Area	Percent Of Analysis Area
Retention	0	0
Partial Retention	2596	39%
Modification	0	0
Maximum Modification	4,089	61%
Total	6685	100%

Alternative A – No Action

In the short-term, the primary visual impact is from the current prescribed fire program which would leave large areas of blackened vegetation. Much of the blackened ground vegetation regrows within the first month following fire. Blackened tree boles and woody shrubs killed by fire would remain for up to a year or more. Repeated burning would promote an open understory dominated by herbaceous ground cover in a more open park like condition which would improve visual quality.

Cumulative Effects

The forest-wide prescribed burn program would continue to occur and cumulatively affect the visual quality in both the short and long term. Short term impacts include temporary loss of vegetation on the forest floor and charred and burned vegetation. Long term affects are generally positive and include an increase in herbaceous groundcover and a relatively open understory and midstory.

Alternative B – Proposed Action

The treatment clearcut and associated site preparation would have the largest impact on the visual quality of the area. Once timber removal operations begin the decline in visual quality will become immediately evident. Many other stems or brush species in these stands would be jagged, splintered, or crushed by the mechanical equipment which will leave the area with an uneven quality. This effect is expected to last two or three years or until the trees seedlings begin to fill out the area.

Other short-term effects to visual quality would include residual slash from thinning, skid trails and log landings. These conditions would likely remain evident on the ground for up to 2-years, but would gradually become less evident. The long-term effect would be a more open forest with herbaceous ground cover which would improve the visual quality by meeting the areas desired conditions. Under this Alternative, Forest-wide standard *VG-15 would apply to*

several stands along State Highway 65. VG-15 would require *slash, tops, and logging debris be piled no more than 2 feet high within 100 feet of these roads.*

The visual effects of mechanical or herbicide site preparation will be limited to the immediate area of the stand itself. Some of the treatment areas are right along forest roads and will be visible to people passing bye.

Cumulative Effects
Prescribed burning in conjunction with Alternative B would result in charred and burned downed debris associated with harvesting operations. These impacts would be short term as logging debris would become consumed with each additional burn. Long term cumulative effects would be beneficial as the project area will begin to resemble historic open park-like forests of northwest Florida.

Alternative C – No Herbicide
The effects from Alternative C would be the same as Alternative B except the browning of vegetation from the use of herbicides would not occur. In clearcut areas that would receive mechanical site preparation the more jagged appearance created by logging equipment would appear more uniform in appearance due to further breaking and spreading of debris.

Cumulative Effects
Cumulative effects would be similar to those in Alternative B.

Recreation

Affected Environment:
The recreation opportunities that are available to the public in this analysis area include, but are not limited to, camping, hunting, picnicking, and wildlife viewing. Of these recreation uses, hunting is the most common activity in this area. This spectrum is a USDA Forest Service management approach for recognizing possible combinations of recreation activities, settings and probable experience opportunities.

Alternative A – No Action
Without reforestation, the area would lose composition and character, and would decline into a thick brushy understory. Hunting, wildlife viewing, and pleasure driving experiences would decline as the stands become dense with vegetation.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect for cultural resources.

Alternative B – Proposed Actions
This alternative would create short term impacts on hunting due the loss of vegetation and cover following thinning operations. These losses will be short lived and in the long term result in an increase in forage diversity for game species such as white-tailed deer (Masters and

others 1996) Stands within compartments 1, and 9 have clear-cut activities. These stands will receive groundcover restoration treatments, such as herbicide and mechanical chopping, which would create short terms impacts on hunting from the loss of aesthetic quality, wildlife browsing and cover, and brooding habitat. In the long term the conversion of groundcover to a more herbaceous component will encourage browsing for game species and attract bird species for wildlife viewing. Once longleaf pine saplings are planted and established the general appearance of the forest will improve.

Cumulative Effects
The forest-wide prescribed burn program will, in conjunction with Alternative B, positively impact recreation in the long term (>1 year) in the project area. Prescribed burning in thinned pine stands will promote herbaceous establishment and growth indicative of historic longleaf wire ecosystems. These systems are diverse in game species and nesting birds species valued by hunters and bird watchers. In the short term logging debris and prescribed burning would reduce aesthetic quality and wildlife viewing opportunities.

Alternative C – No Herbicides
Under this alternative, the effects would be the same as Alternative B except some of the short-term effects from the use of herbicides would not be evident and the long term openness of the forest may not be visualized.

Cumulative Effects
No effects from past, present and future activities were identified that would combine with the effects of the proposed action and result in a measurable cumulative effect.

Environmental Justice and Civil Rights Impact Analysis

None of the actions proposed by any of the alternatives should have a negative effect on the Civil Rights of the citizens of Liberty County or the surrounding area. No minorities would be discriminated against because of the proposed actions in these alternatives. No groups of people would be disproportionably affected as a consequence of the proposed action. All labor contracts generated from the proposed action would have clauses, which prohibit discrimination for any reason. There are no foreseeable changes in the management of the forest or surrounding private lands that would adversely affect the Civil Rights of people in the future. There would be no significant effects on public health and safety. These activities are commonplace forestry activities, which have been utilized many times in the past.

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

Interdisciplinary Team Members

Bryan Jobe, Prescription Forester
Sonja Durrwachter, Timber Manager
John Dunlap, Wildlife Biologist
Brittany Phillips, Wildlife Biologist
Branden Tolver, IDT Leader
Gary Hegg, Silviculturist
Andrea Repp, Archeologist
Todd Waller, Engineer
Richard Kelley, Sale Administrator

FEDERAL, STATE, OR LOCAL AGENCIES, FEDERAL TRIBES and Individual Consulted:

USDI Fish and Wildlife Service
Florida State Historic Preservation Officer
Northwest Florida Water Management District
Bill Stanton, Archaeologist, Apalachicola National Forest
Leroy Crockett, Soil Scientist, National Resource Conservation Service

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Comments

Commenter	Comment	Response
Dick Artley [retired forest planner, NEPA legal compliance reviewer, forest NEPA coordinator, and forest appeals/litigation coordinator --- Nez Perce National Forest, Idaho, also FEI instructor (Corvallis, Oregon)] Date and Time Received 12/10/2013 @ 9:15 p.m.	**Comment #1:** Ranger Beard, your employees are obedient. Rather than serving the public by preventing actions that will abuse and injure the proper functioning of their resources, the so-called other resource "specialists" on the Interdisciplinary Team choose to support your timber agenda by looking the other way. **Request for final NEPA document modifications:** Please assure that the IDT members rewrite their effects analysis in Chapter 3 of the final EA so the effects are honest and accurate. Please ask them to describe the effects to their resource rather than the length and magnitude of the impact. Indeed, impacts that are short-term can inflict major, long-term adverse effects.	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.
	Comment #1: There are 6 timber/engineering employees on the 9 member IDT. Without timber sales Mr. Jobe, Ms. Durrwachter, Mr. Tolver, Mr. Hegg, and Mr. Kelley would not be employed by the USFS. Thus, they are all financially motivated to push the Telogia timber sale through the NEPA process regardless of its impacts to other resources. Incredibly, Ranger Beard you have chosen to follow the advice of these 6 biased, financially motivated timber employees and reject the clear warning against timber sale activity by several hundred unbiased, independent Ph.D. scientists contained in the **Attachments** to these comments. **Request for final NEPA document modifications:** Please assure that the final EA includes the names of a real IDT with varied specialties and Chapter 3 is rewritten.	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.

	Comment #1: 6 of the 9 members of the IDT are foresters and engineers yet Chapter 3 divulges the environmental effects of sale implementation to the resources that will be affected. In your response to comments I will expect answers to the following 5 non-rhetorical questions. • Did the TMA, prep forester, engineer or sale administrator write the effects to soils in Chapter 3? • Did the TMA, prep forester, Silviculturist, engineer or sale administrator write the effects to water quality in Chapter 3? • Did the TMA, prep forester, Silviculturist, engineer or sale administrator write the effects to air quality in Chapter 3? • Did the TMA, prep forester, Silviculturist, engineer or sale administrator write the effects to climate change in Chapter 3? • Did the TMA, prep forester, Silviculturist, engineer or sale administrator write the effects to non-native invasive species in Chapter 3?	An Interdisciplinary approach was used to formulate the proposed actions and alternatives as well as the effects to the environment. The effects to soils, climate change, air quality, water quality, and non-invasive species were determined based on similar projects that have been implemented on the forest as well as a review of relevant journal articles, state environmental reports and websites.
	Comment #1: There is no fisheries or aquatic habitat in Chapter 3. Are there streams in the sale area? If there are do you care? **Request for final NEPA document modifications:** Chapter 3 of this EA contains an effects write-up for soils, water quality, air quality, climate change, and non-native invasive species yet there is no subject matter specialist listed as an IDT member. Please add a 5 more people to the IDT that are specialists in soils, water quality, air quality, climate change, and non-native invasive species and display their name. Also assure that the current effects writeups for these 5 items are rewritten by the subject matter experts.	Pages 16 and 21-40 of the EA discuss the water quality effects associated with each alternative. It also includes information regarding the number of streams in the analysis area.

	Comment #1: In the final EA please explain to the public why a less intrusive, more publically accepted silvicultural prescription was not proposed in place of clearcut. Please tell them why it is essential to regenerate the area. Remember, stands with unhealthy and dead trees are a sign of a healthy, biodiverse forest.	Pages 9 and 42 of the EA discuss the optimality of using clearcuts as opposed to other regeneration cuts such as seed tree or shelterwood. A lack of mature longleaf seed trees was the determining factor as to why the Forest Service prescribed clearcutting. Thinning these stagnated off-site would not promote growth needed for future wildlife habitat such as that needed for the RCW.
	Comment #1: Survey after survey indicates the public does not want their land clearcut. The USFS is supposed to serve the public. The USFS prescribes clearcuts because it reduces the costs to the corporation that logs the area. The final EA MUST contain a trade off analysis that weighs 1) public acceptance, 2) logging costs and 3) between clearcut regeneration success. This analysis MUST contain reference material citations for all conclusions rather than spoon-feeding the public unsubstantiated statements that support the Proposed Action as written. **Request for final NEPA document modifications:** • provide data and text demonstrating that soil, slope, or other watershed conditions will not be irreversibly damaged; • provide data, text and maps demonstrating that protection is provided for streams, stream-banks, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of	Chapter 3 of the EA discusses the environmental impacts of the proposed action and alternatives and the optimality of using the clearcut method.

	water courses, and deposits of sediment; • provide data and maps demonstrating that cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain; and • provide data and text demonstrating that for clearcutting the optimum silvicultural prescription for the area.	
	Please assure that the Responsible Official's responses to public comments are posted online as well as hardcopy in the Project File **Request for final NEPA document modifications:** If it's not possible to post the Responsible Official's responses to public comments online, then consider this a FOIA (per 36 CFR 200.6) for these responses to be mailed to me prior to the time the final day objection period begins.	Comments and agency responses have been included as an appendix to this draft EA which will be available online.
	The pre-decisional EA does not analyze an alternative in detail that does not reconstruct any roads. The Responsible Official could analyze an infinite number of alternatives by simply adjusting the acres harvested up or down. If adjusted upwards, the harvest goals will be achieved sooner. If adjusted down, it will take longer to achieve the harvest goals. Of course the law does not require this, nor should it. It would waste taxpayer's money to analyze an alternative simply because it exists. United States law codifies this: Question and answer 1b in the **Forty Most Asked Questions Concerning** **CEQ's National Environmental Policy Act Regulations** responds to this situation:	Alternative A (No Action) analyzes the effects of no management treatments including the reconstruction of roads. See pages 5-29 of the EA.

	1b. **How many alternatives** have to be discussed when there is an infinite number of possible alternatives? A. For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. For example, a proposal to designate wilderness areas within a National Forest could be said to involve an infinite number of alternatives from 0 to 100 percent of the forest. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. An appropriate series of alternatives might include dedicating 0, 10, 30, 50, 70, 90, or 100 percent of the Forest to wilderness. What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case. The no road reconstruction alternative stands out among the infinite number of alternatives because it reduces the adverse environmental effects of the proposed action while still meeting the purpose and need for the project. Road reconstruction is an activity that causes damage to some important natural resources in the sale area. This activity is particularly detrimental to aquatic and wildlife resources. Chief Dombeck's statement below supports this fact. *"Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road."* Dr. Mike Dombeck, Chief, US Forest Service Remarks to Forest Service employees and retirees at the University of Montana	

	February 1998	
	Comment #1: Dr. Bunnell concludes from his research on logging roads that: "Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized "mass movements," such as landslides. Forest practices can increase the rate at which both processes occur. Most sediment from forestry arises from landslides from roads and clearcuts on steep slopes, stream bank collapse after riparian harvesting, and soil erosion from logging roads and harvested areas. Roads, particularly those that are active for long periods of time, are likely the largest contributor of forestry-induced sediment (Furniss et al. 1991)." "Sediment can increase even when roads comprise just 3% of a basin (Cederholm et al. 1981)." "More than half the species present in the study area will likely be negatively impacted by sedimentation from logging roads."	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.
	Comment #1: In the final EA please tell the public why such natural resource damage will not occur on the Telogia timber sale, or if it will occur, explain why the resource damage is an acceptable tradeoff for the benefits described in the P&N. In the final EA please tell the public why such road-related natural resource damage will not occur on the Telogia timber sale, or if it will occur, explain why the resource damage is an acceptable tradeoff for "increase radial growth and live crown ratio; removing offsite or stunted slash pine and restoring with indigenous longleaf pine seedlings; and reducing and controlling overabundant hardwood trees and brush to restore native herbaceous groundcover" as written in the Purpose & Need.	Please see pages 19-25 of the EA for more information on effects of roads on soils. Alternative A (No Action) analyzes the effects of no management activities, including road construction on the project area.

	<u>Request for final NEPA document modifications:</u> Please analyze an alternative in detail that does not reconstruct any roads. The no road reconstruction alternative stands out among the infinite number of alternatives because it reduces the adverse environmental effects of the proposed action while still meeting the purpose and need for the project even though slightly less output would be generated. Please see **<u>Attachment #4</u>**.	
	There were no stream surveys completed which are critical when predicting whether the streams were subject to major adverse effects when they are monitored after the sale is completed. **Before and after data is essential.** **<u>Request for final NEPA document modifications:</u>** Before activities start, please conduct stream surveys for all perennial streams in the project area which will include measured values for 1) stream temperature, 2) turbidity, and 3) stream flow.	All action alternatives in this EA were designed in conjunction with state silvicultural BMPs. These BMPs are the state's required measures to protect water quality throughout the state.
	The pre-decisional EA entirely fails to consider the effects on watersheds and aquatic habitat of sediment generated by landings, skid-trails and temporary resulting from prior timber sales in the area that have not been obliterated, and the sediment generated from proposed landings and skid-trails that will be constructed with this timber sale. **<u>Comment #1:</u>** The pre-decisional EA does not include the effects of past and proposed landings, skid-trails and temporary roads that still have a running surface in its consideration of watershed and fishery impacts. A glance at a Google Earth photo of the area reveals that past timber sales have left a large number of landings, skid-trails and so-called temporary roads in place. Obviously, the proposed harvest units	Page 23-24 of the EA describes the Telogia Creek Watershed. Pages 11-13 of EA show maps of proposed log landings.

	will require more landings and skid-trails. These landings, skid-trails and "temporary" roads are a permanent and irreversible imposition on the landscape unless action is taken to eliminate the ecosystem damage. **Request for final NEPA document modifications:** Please show the location of past (that still have soil exposed to the elements) and proposed landings, skid-trails and temporary roads on a map and analyze the sediment generated from all these areas to the rain.	
	Sadly, the pre-decisional EA fails to mention noise and dust resulting from logging activities. The noise is clearly evident and disruptive several miles away from the source. Please assure the impacts to the potentially affected resource are estimated in the final EA and mitigation is includes in the decision document to eliminate the problem. Please assure the final EA describes how the Responsible Official has complied with the requirements of USC TITLE 42 --THE PUBLIC HEALTH AND WELFARE, **CHAPTER 65-- NOISE CONTROL,** Sec. 4905. Noise emission. **Comment #1:** Remember, anyone responsible for protecting the land owned and loved by 307 million Americans as you are Ranger Beard must understand that their job under NEPA entails more than simply describing how their proposed project will harm the recreational experiences and natural resources in the forest. They must modify (or drop) their proposed project so the chances of damage and harm no longer exist. Clearly, the public believes their recreation and natural resources in national forests must never be considered acceptable collateral damage of timber volume	Pages 51-53 and 60-61 of the EA discuss the effects of logging on public health and safety, visual quality and recreation.

	accumulation. This includes industrial noise and dust degradation. **Request for final NEPA document modifications:** Please disclose that noise and dust may adversely affect recreation experience of human visitors to the forest and some wildlife species that exist near the project area and analyze the effects that may occur to 1) recreation, and 2) vulnerable wildlife species in Chapter 3, and explain why such impacts are a justified tradeoff for the stated project benefits.	
	Herbicides Containing Glyphosate must Never be used on Public Land for Any Reason The pre-decisional EA indicates herbicides will be applied. Glyphosate kills aquatic life even if the concentrations of the chemical in water are very low. The fish deaths will occur in the streams in the project area and a few miles downstream. Herbicide mist should never be allowed to contact water … even so-called aquatic-safe herbicides. As you already know, corporations will do anything for profit, including misrepresenting the safety of a toxic chemical they manufacture. Glyphosate is persistent and remains active for several days after being applied. **Comment #1:** Literature authored by independent scientists not connected with Monsanto or the USFS indicates mammals that eat contaminated foliage and humans that might brush against contaminated foliage or eat contaminated berries have been known to suffer from the following as a result of glyphosate contact: birth defects, non-Hodgkin's lymphoma, mitochondrial damage, cell asphyxia, miscarriages,	The herbicide glyphosate will not be used under any alternative in the EA. The herbicides Triclopyr and Hexazinone are proposed for hardwood control/site preparation in the Telogia Analysis Area EA. Pages 21-28 and 49-51 discuss of effects of Hexazinone and Triclopyr use.

	attention deficit disorder endocrine disruption, DNA damage, skin tumors, thyroid damage, hairy cell leukemia, Parkinson disease, premature births, decrease in the sperm count, harm to the immune system in fish death of liver cells, severe reproductive system disruptions and chromosomal damage.	
	Comment #1: Ranger Beard, would you apply a chemical to your yard where children play in the grass that was banned in Denmark 10 years ago because of its lethal effects?	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.
	Comment #1: Ranger Beard, would you apply a chemical to your yard where children play in the grass that the Institute of Science in Society based in London England calls for banning in England?	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.
	Comment #1: The following links provide additional scientific proof that glyphosate-	The herbicide

	containing herbicides are likely to cause bee Colony collapse disorder (CCD) that's currently driving bees extinct. Please disclose this information in Chapter 3 of the final EA and if available provide scientific information showing why this is untrue.	glyphosate will not be used under any alternative in the EA. The herbicides Triclopyr and Hexazinone are proposed for hardwood control/site preparation in the Telogia Analysis Area EA. Pages 21-28 and 49-51 discuss of effects of herbicide use.
	Final Glyphosate Comment: Ranger Beard, if the final EA approves glyphosate application to kill non-native plant species ,then the public will want to know your acceptable fatality level for fish, birds and mammals(including humans). Also please tell the public there are alternatives to herbicides. Since you will indicate you are rejecting these alternatives because they are too costly, please tell the public the cost difference between herbicides and alternative methods of control. **Request for final NEPA document modifications:** Please either: 1) treat non-native plants with alternatives to glyphosate-containing herbicides, or 2) if these types of herbicides must be applied, analyze the effect in Chapter 3 because scientific research indicates there might be a link between glyphosate-containing herbicides and CCD.	The herbicide glyphosate will not be used under any alternative in the EA. The herbicides Triclopyr and Hexazinone are proposed for hardwood control, release, and site preparation in the Telogia Analysis Area EA. Pages 21-28 and 49-51 discuss of effects of herbicide use.
	The pre-decisional EA for the Telogia timber sale does not "identify methods and procedures required by section 102(2)(B) to "Identify methods and procedures required by section 102(2)(B) to insure that presently unquantified environmental amenities and values may be given appropriate consideration" **Comment #1 :** Simply stating that amenity	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for

	resource values have been considered in the NEPA document is not enough. The Responsible Official must "identify the methods and procedures used to assure appropriate consideration." **Request for final NEPA document modifications:** Please identify and discuss the methods and procedures used by the Responsible Official to insure that presently unquantified environmental amenities and values are given appropriate consideration.	the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.
	The Telogia timber sale proposal is the antithesis of what the American public wants to occur in their national forests The following quote comes from forest service publication that describes what the public wants from their national forests: *"The public sees the restriction of mineral development and of timber harvest and grazing as being more important than the provision of natural resources to dependent communities (although this is still seen as somewhat important).*" (Pg. 28) **Source:** "Survey results of the American public's values, objectives, beliefs, and attitudes regarding forests and grasslands: A technical document supporting the 2000 USDA Forest Service RPA Assessment". Gen. Tech. Rep. RMRS-GTR-95. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 111 p. Link to Complete Report: http://www.fs.fed.us/rm/pubs/rmrs_gtr095.pdf **Comment #39:** Ranger Beard, there is no "timber famine" as the USFS has been so fond of predicting for many decades. There is no shortage of raw materials for paper and wood products in the United States	36 CFR 218.2 defines specific written comments as those "within the scope of the proposed action, having a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider". All comments are welcome however this comment does not raise specific issues with the proposed action(s) or alternatives.

	otherwise the owners of private timberland would not be exporting their lumber. Any national or regional poll or survey indicates the vast majority of the public doesn't want their public land harvested for any reason. In the final EA EIS please tell the public why this sale is an exception. **<u>Request for final NEPA document modifications that appeared in the objector's comments:</u>** Please include a discussion and supporting data in the final EA showing either: 1) the majority of the general public approves of logging their national forests, or 2) majority of the general public does not approve of logging their national forests.	
Friends of Apalachicola Timber Management Committee Date Received December 17, 2013 @ 10:26 a.m.	In three stands (1-5, 1-8, and 9-15) a substantial number of the planted slash pine were growing normally and did not seem to be stunted. For this reason we make the case that the ecological services provided by the slash pine outweigh the economic costs of restoring longleaf immediately. For example, • Clearcutting the slash pine will require 30-40 years to restore comparable RCW foraging habitat. • Retaining the current slash overstory and gradually replacing it with longleaf by planting in created gaps or enlarging naturally occurring gaps would provide a continuous source of foraging habitat for RCWs. • The slash pine, although not the tree species intended for the desired future condition, provides needle cast that facilitates fire. The stands show signs of not having been burned often enough (e.g., some slash regeneration and brown spot disease). • Mechanical disturbance to the ground cover would greatly harm	Please see pages 14-15 of the EA for information as to why gradually replacing slash pine was not considered as an alternative.

	the significant remnant native ground cover, especially wiregrass. Ironically, one of the management actions in the proposed action is to replant wiregrass! In the remaining stand (1-11) the planted slash pine were sufficiently stunted that we could support clearcutting and replanting with an important caveat. In order to protect existing scattered wiregrass and other desirable components of native ground cover, special care should be taken to minimize (1) mechanical soil disturbance during the harvest operation and (2) "collateral damage" from herbicide application to kill oaks.	
	To be clear: we solidly support the goal of restoring longleaf to this site. It obviously was originally populated by longleaf, and longleaf is the species that will be sustainable within a frequent fire management regime. We only raise consideration of the speed of restoration. We emphasize the emerging concept of retaining and using the ecological legacies of each given site to its greatest advantage (Kolm and Franklin 1997). Our point is that ecological benefits derived from retaining slash pine outweigh the costs of clearcutting (Kirkman et al. 2007).	Retaining offsite poorly growing tree species would not lead to the future desired condition of good quality foraging habitat. The Apalachicola has an average reentry interval of 20 years. This means that management activities would not occur again until at least the 2034 which makes gradual conversion to longleaf impractical.
	Stand 18 in Compartment 9 is already in the desired condition (Fig. 4). Needle cast and abundant grasses provide excellent fine fuels to carry fire. Sensitive and rare plants, *Angelica dentata, Baptisia simplicifolia, Carphephorus pseudoliatris, Eurybia (Aster) eryngiifolia, Gaylussacia moseri, Hedeoma (Stachydeoma) graveolens, Hypericum microsepalum, Platanthera cristata,* and *Sabatia brevifolia,* were all observed in this stand. It is excellent RCW foraging habitat.	Please see pages 14-15 of the EA.

	For three of the four stands proposed for clearcutting (1-5, 1-8, and 9-15), herbicide treatment, longleaf and wiregrass planting, we recommend that clearcutting and wiregrass planting are unnecessary. The oaks should be herbicided to release the remnant wiregrass and to create better RCW foraging habitat structure, although hack-and-squirt may be preferable to grid application to minimize collateral damage to the existing native ground cover. Slash pines in Compartment 1 stand 11 are sufficiently stunted that it may be appropriate to clearcut and start the stand over. If this stand is clearcut, special care should be taken to protect the existing longleaf regeneration and remnant wiregrass.	Stand exams conducted by a prescription forester indicated that these stands were of small diameter and exhibited little signs of continuing growth. The wildlife biologists have also determined that these stands will not trend towards good quality foraging habitat. In addition the forest plan outlines a goal of converting off-site slash pine to longleaf. For these reasons our prescription is necessary to meet the purpose and need.
Stephen M. Hodges Senior Planner Tallahassee – Leon County Planning Department Received 12/18/2013 @ 3:21 p.m.	The activities proposed in the EA are intended to facilitate the ecological restoration of selected Forest units by reducing planted slash pine areas and hardwoods, and replanting these and other areas with longleaf pine, a native species once found throughout the Southeastern U.S., and other native groundcover species. The objectives of these activities include creating a more sustainable native forest, improving listed and other animal species habitat, and creating and maintaining soil, water, and air quality. These objectives are consistent with the Tallahassee – Leon County Comprehensive Plan. Subsequently, the Planning Department, on behalf of the City of Tallahassee and Leon County, supports the proposed activities within the Telogia Analysis Area as addressed by the EA.	Thank you for your interest and support for this project.
Margaret Copeland	The true (reported) financial costs are huge. The cost to taxpayers just to help a logger remove timber to add to his pocketbook	The economic analysis on pages 54-56 indicates a net positive

Received 12/27/2013 @ 7:06 p.m.	seem disproportionately large. This is not even a break-even sale. At our refuge, the understory is often controlled by firewood sales and results in a removal that does not disturb the soil like the heavy machinery that loggers use. Then, frequent fire maintains the grasses, etc. as needed for ground feeding/nesting birds (quail, Bachman Sparrow, etc.). This "softer" approach should be considered for your sandy soils and to protect the ponds, drains, etc. that large equipment destroy.	sale. The Apalachicola National Forest utilizes firewood cutting areas (not firewood sales) when possible but this is not an adequate method to control hardwood midstory on a larger forestwide scale.
	The costs to RCWs will be the lost of large amounts of the larger pine trees (removed for their market value to pay the logger to come in) while smaller diameter pine trees will be left standing to grow into more marketable trees. This is just the opposite of what RCWs need for foraging and nesting, These large diameter trees are needed NOW and into the next 30 years vs having to wait 30 or 40 years for the remaining trees to grow old enough to be attractive for cavity sites. I'm especially concerned about the 60+ acres within one cluster's foraging area—that removal seems especially excessive. And, entrance and thinning of about ¼ (1,528 acres) of the compartment (6,685 acres) in one year is a huge change in the forest for the RCWs.	Timber management on the ANF follows guidelines set forth by the U.S. Fish and Wildlife Service RCW Recovery Pan. The majority of the stands proposed for treatment will be thinned from below, leaving the larger dominant trees and cutting the smaller co-dominant pine. The 64 acres being cut within the clusters foraging area meets the minimum requirements to be considered foraging but would be considered poor quality foraging habitat due to the abundance of small diameter pine and the hardwood midstory. The remaining foraging acreage is of much higher quality and the cluster will have in excess of 120 acres, which is the minimum acreage suggested by the RCW Recovery Plan.

		The proposed treatment would occur over several years as part of multiple timber sales. A Biological Assessment has been prepared and will be submitted to the U.S. Fish and Wildlife Service.
	I was unable to know the age of surrounding stands, where the RCW clusters were, and where foraging ranges overlap, etc. from your 65-page proposal. This was "tiered" to the 1999 plan. 2014 is about 15 years later—is this 1999 plan "current"? Does it reflect 2013 RCW conditions over this entire national forest?	The Forest Plan is current and has been amended several times since its implementation in 1999 with the most recent occurring in 2014. The Plan's purpose is not to outline specific management projects but rather to serve as a framework for future decision making.
	I was especially concerned about only protecting a small area around a gopher tortoise burrow when heavy equipment should not be allowed in their areas. I don't feel that allowing harvesting "up to the ponds" to be protecting wet areas. Do you have vernal pools in these soils? If so, how will they be protected. When ¼ of the compartment will be entered and heavy equipment will be everywhere, how will drains, etc. possibly be protected.	The Apalachicola National Forest follows the guidelines found in the Gopher Tortoise Management Plan. This plans calls for a 25 foot buffer around the tortoise burrow. This would prove sufficient to protect the burrow from fill-in and other damage. The Apalachicola National Forest adheres to the most recent state best management practices. Pages 23-28 of the EA discuss the effects of the proposed action on water quality.

	The "creation" of 20 acres of ¼ to 2 acres of "openings" in mature longleaf pine to "create" natural regeneration is simply a way to remove more mature longleaf pine. Nature will create those openings through storm damage without the service taking more mature pine trees from the forest. And, log/decks/landings are never part of the figures in these reports. Yet, they are created "as needed" and actually remove even more trees and do create openings—except they are not always "in the right place." All these decks/landings should be part of the proposal. And, it seems to me the "thinnings" are scattered and long (vs square or rectangular) so there will probably be more log decks and even more 1-2 acre clear-cuts (cleared areas for the log decks) that are not mentioned in the proposal.	Openings will only occur in areas where natural regeneration of longleaf pine is occurring and will have an average size of ½ acres with a few possible openings that are >1 acre. The goal for this stand is to only create a total of 2 acres of openings. Log decks will be strategically located to minimize the impact on soil from erosion and compaction. The number of log decks would not increase due to cut method.
	I was especially concerned about allowing logs to be dragged/skidded through active RCW clusters—heavy logging equipment should not be allowed within the central part of the cluster due to the compaction of the soil/ground and the danger of skuffs/debarking of pine trees essential for RCW use. It is not OK to allow that type activity in active RCW clusters. Log decks need to be further than 200 feet from RCW cavity trees. Those decks create dangerous openings near RCW trees and can be a hawk "sink" that RCWs will need to avoid (i.e. fly around rather than threw). It should be an easy choice for the biologist to step forward and protect the cluster sites when considering where log decks/landings will be located.	Skid trails will not be established in RCW clusters. Skidding is limited to single passes. See page 15 of the EA for more on log deck locations in respect to RCW cavity trees. Biologists have input on the locations of landings/decks. They are placed in the best locations possible that meet the needs of the timber operation while considering the impacts to RCW. While RCW may choose to fly around landings/decks, the landings are less than ½ acre in size.

	After the Texas court ruling in the late 1980s, I didn't think the forest service could use clear cuts near RCW areas. The clear cuts should not be allowed because there is some standing pine that could be useful for RCWs while still not stopping natural regeneration of long-leaf pine. "Off-site" really just means the service wants to remove that kind of timber and plant something else. Again, that 30, 40, or 50 years before the site would be useful for RCWs should preclude even the thought of a clear cut.	The RCW Recovery Plan allows for clearcuts when restoring offsite pine to native pine species. The size of each individual clearcut is limited to 40 acres. Longleaf pine trees will be reserved in clearcut areas when present.