DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT

MACEDONIA ANALYSIS AREA

USDA Forest Service – Region 8
Francis Marion National Forest
Francis Marion Ranger District
Berkeley County, South Carolina

The Francis Marion National Forest has decided to implement silvicultural treatments consisting of first commercial thinning (pulpwood), intermediate commercial thinning (pulpwood and sawtimber), longleaf pine restoration, thinning to promote mixed pine/hardwoods and loblolly seedtree cuts on approximately 8,121 acres in the Macedonia analysis area.

Decision

I have decided to implement Alternative 2. This alternative which also includes design criteria and monitoring best meets the Purpose and Need as stated in the *Macedonia Environmental Assessment* (EA).

Silvicultural Treatments

PRESCRIPTION #1: FIRST COMMERCIAL THINNING - 4,277 acres.

This prescription will be divided into two treatment classes.

Treatment Class 1:

Loblolly pine trees in these stands will be thinned commercially for pulpwood for the first time since their establishment. Current pine densities range from 90 to 160 square feet per acre (250-350 trees per acre) and the desired leave target basal area averages from 55-65 square feet per acre after the thinning[1]. This will equate to around 100 to 120 trees per acre. Pine trees that will be cut will generally range in size from 4.6 to 10 inches DBH[2]. The priority for trees to be left after thinning in this treatment class will be:

A) Longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree

[1] Basal area is a unit of measure that foresters use to describe the density of trees within a stand. It is defined as the total horizontal cross-sectional area of all the tree stems per acre, measured at breast height (4.5 feet above ground level). For the purposes of this project forests are stands of trees with 60 square feet of basal area per acre or greater. Woodlands have timbered stands between 40 and 60 square feet of basal area per acre. Savannas have a very sparse tree canopy less than 40 square feet per acre).

[2] DBH – Diameter at Breast Height

height.
B) Larger sized loblolly stems free from disease and defect.
C) Desirable hardwood trees, especially mast producers such as oaks and hickories in the upper canopy.

Smaller pine and hardwood trees less than 4.6 inches DBH may also be harvested. This material is referred to as "biomass" and may be chipped and used to generate electric power and other energy products.

Treatment Class 2:

These three stands are predominantly longleaf pine with scattered loblolly trees occurring throughout. In this treatment class, loblolly pine will be removed and longleaf will be thinned commercially for pulpwood. Current basal areas range from 100 to 140 square feet per acre and the desired leave target basal area for longleaf will average from 55-65 square feet per acre after the thinning.

The priority for trees to be left after thinning in treatment class 2 will be:

A) Larger sized longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height.
B) Desirable hardwood trees, especially mast producers such as live oak, post oak and hickory that are in the mid to upper canopy.

Smaller pine and hardwood trees less than 4.6 inches DBH may also be harvested. This material is referred to as "biomass" and may be chipped and used to generate electric power and other energy products.

PRESCRIPTION #2: INTERMEDIATE THINNING – 1,283 acres.

Stands proposed for intermediate thinning typically range in age from 30-60 years old and consist of pine that is generally larger in diameter than the first commercial thinnings mentioned above. The material to be cut is generally large enough to be sold as pulpwood, chip-n-saw or small saw timber, though this will not be used as a determining factor as to the need for treatment.

Trees to be removed in this category generally range in size from 5.0 to 15.0 inches DBH. Currently these stands are carrying basal area densities from 80 to 160 square feet per acre.

This prescription will be divided into three treatment classes based on the amount of basal area that will be left after treatment.

Treatment Class 1:

Stands will be thinned down to a target basal area of 65 – 75 sq. ft. per acre. These stands are dominated by loblolly pine and heavy hardwood mid-stories and are in areas where prescribed fire occurs on a very limited basis.

The priority for trees to be left after thinning in this treatment class will be:

A) Longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height.
B) Larger sized loblolly stems exhibiting good health, form and crowns equal to at least one third of total tree height.
C) Desirable hardwood trees, especially mast producers such as oaks and hickories in the upper canopy.

Smaller pine and hardwood trees less than 4.6 inches DBH may also be harvested. This material is referred to as "biomass" and may be chipped and used to generate electric power and other energy products.

Treatment Class 2:

Stands will be thinned down to a target basal area of 55-65 sq. ft. per acre.

The slightly lower leave basal areas will help create more open stand conditions. These stands occur in areas where prescribed fire consistently occurs at two to three year intervals.

The priority for trees to be left after intermediate thinning in treatment class 2 will be:

A) Longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height.
B) Larger sized loblolly stems free from disease and defect.
C) Desirable hardwood trees, especially mast producers such as oaks and hickories in the upper canopy.

Smaller pine and hardwood trees less than 4.6 inches DBH may also be harvested. This material is referred to as "biomass" and may be chipped and used to generate electric power and other energy products.

Treatment Class 3:

In order to create favorable foraging habitat for the RCW, these stands will be thinned down to a target basal area of 45-55 sq. ft. per acre.

Stand 25 of compartment 63 is a mixed longleaf, loblolly stand which is burned on consistent two to three year return interval. The lower target basal area will favor longleaf cohort development in the understory.

Stand 3 and 13 of compartment 15, stand 6 of compartment 38, and stand 12 of compartment 63 are in areas where prescribed fire has been much less consistent in the past and therefore have heavy mid-stories. These mid-stories will be removed either as biomass during the commercial thinning or by mastication using heavy equipment to grind up small pine and hardwood midstory trees left after logging. If mastication is used, this shredded material will be scattered over the treatment area and not piled. In order to minimize soil disturbance, mastication will avoid wet soil conditions and use machines with a compaction rating of 6 lbs. per square inch or less.

The priority for trees to be left after intermediate thinning in treatment class 3 will be:

A) Longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height.
B) Larger sized loblolly stems free from disease and defect.
C) Desirable hardwood trees, especially mast producers such as oaks and hickories in the upper canopy.

Smaller pine and hardwood trees less than 4.6 inches DBH may also be harvested. This material is referred to as "biomass" and may be chipped and used to generate electric power and other energy products.

PRESCRIPTION #3: LONGLEAF RESTORATION - 801 acres.

Longleaf pine restoration will take place in stands dominated by loblolly pine. This proposed prescription will be divided into five treatment classes in which the method of site preparation depends on the condition of the stand and burn history.

Treatment Class 1:

These stands are in areas where prescribed fire has occurred at least three times in the last decade and mid-story development is fairly limited. Prescribed fire will be used for both site preparation prior to planting and release after seedlings have become established.

1. Commercial Harvest -
   - All loblolly trees 4.6 inches DBH and greater will be harvested, leaving 6-10 of the largest pines available per acre. These residual trees will provide structural diversity in the stand and can serve as RCW foraging and nesting habitat, especially as the new longleaf seedling stand grows to maturity.
   - Leave longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height. Available longleaf trees equal to or greater than 10 inches DBH may count towards the 6 to 10 trees per acre left after harvest. These trees may serve as current and future cavity trees for the RCW, as well as a longleaf seed source to augment the planted longleaf seedlings.
2. Site Preparation -
   - Site preparation will be accomplished by prescribed burning in the spring or early summer.

3. Hand Planting -
   - In the late summer or early fall following site preparation burning, longleaf seedlings will be planted on a ten by ten foot spacing (435 seedlings per acre).
   - The planted stand will be protected from prescribed (Rx) burning, using a constructed fire line if the surrounding compartment is to be burned during the first growing season after planting. Rx burning will be resumed in the stand along with the rest of the compartment after the seedlings have become established, usually two years after planting.

Treatment Class 2:

These stands have heavy midstory and woody understory development due to the infrequency of prescribed burning in the last two decades.

1. Commercial Harvest / Mid-Story Removal -
   - All loblolly trees 4.6 inches DBH and greater will be harvested, leaving 6-10 of the largest pines available per acre. These residual trees will provide structural diversity in the stand and can serve as RCW foraging and nesting habitat, especially as the new longleaf seedling stand grows to maturity.
   - Leave longleaf pine exhibiting good health, form and crowns equal to at least one third of total tree height. Available longleaf trees equal to or greater than 10 inches DBH may count towards the 6 to 10 trees per acre left after harvest. These trees may serve as current and future cavity trees for the RCW, as well as a longleaf seed source to augment the planted longleaf seedlings.
   - Mid-story vegetation will be removed either commercially as biomass or by mastication. Heavy equipment will grind up small pine and hardwood midstory/understory trees and shrubs left after logging. If mastication is used, this shredded material will be scattered over the treatment area and not piled. In order to minimize soil disturbance, mastication will avoid wet soils and use machines with a compaction rating of 6 lbs. per square inch or less.
2. Hand Planting -
   - In the late summer or early fall, following midstory removal, longleaf seedlings will be planted on a ten by ten foot spacing (435 seedlings per acre).
   - The planted stand will be protected from Rx burning using the same guidelines as described in treatment class 1.
3. Herbicide Release –
   - Longleaf seedlings will be released from woody competition one to two years after planting. The method of release will use dormant (leaf off) season basal bark (manual using back-pack sprayers) application of herbicide.
   - The herbicide used will be Triclopyr (Garlon 4 or equivalent) which will be applied directly to the stem of targeted woody species. The following species will be targeted for treatment: sweet gum, water oak, turkey oak, black jack oak, blue jack oak, red maple, wax myrtle, gallberry, fetter bush, sweet pepper bush, and sumac.
   - Herbicide mixture will contain the following:
     - 16% to 18% Triclopyr (Garlon 4 or equivalent).
     - 84% to 82% vegetable oil and adjuvant diluent.

- Herbicide treatment will be monitored for effectiveness the following growing season after application. If treatment has achieved less than 60% kill of targeted species, retreatment will be conducted the following winter.

Treatment Class 3: This stand is dominated by a mixture of longleaf/loblolly pine in the canopy with enough longleaf to provide a seed source for natural regeneration.

1. Commercial Harvest -
   - All loblolly pine will be commercially harvested.
   - Longleaf pine will be retained. However, wherever thick patches occur, longleaf will be thinned down to 55 to 65 sq. ft. per acre.
2. Site Preparation -
   - Canopy gaps resulting from the loblolly removal and successive prescribed burns will promote open stand conditions, grass/herb dominated understory and the establishment of longleaf seedling cohorts in the understory.

Treatment Class 4:
This stand is dominated by a mixture of longleaf/loblolly pine in the canopy. However, unlike treatment class 3, there will not be enough longleaf canopy trees to provide sufficient seed for future longleaf seedling cohort development.

1. Commercial Harvest -
   - All loblolly pine will be commercially harvested.
   - Retain longleaf pine.
   - Wherever thick patches occur, longleaf will be thinned down to 55 to 65 square feet per acre, leaving trees exhibiting good health and form.
   - Mid-stories will be removed either commercially as biomass or by mastication. Heavy equipment will grind up small pine and hardwood midstory/understory trees and shrubs left after logging. If mastication is used, this shredded material will be scattered over the treatment area and not piled. In order to minimize soil disturbance, mastication will be done using machines with a compaction rating of 6 lbs. per square inch or less.
2. Hand Planting -
   - In the late summer or early fall following site preparation burning, Longleaf seedlings will be planted on a ten by ten foot spacing (435 seedlings per acre) wherever canopy gaps of 0.5 acre in size or greater occur within the stand.
   - The planted stand will be protected from Rx burning using the same guidelines as described in treatment class 1.
3. Herbicide Release –
   - Longleaf seedlings will be released from woody competition one to two years after planting. The method of release will use dormant (leaf off) season basal bark (manual using back-pack sprayers) application of herbicide.
   - The herbicide used will be Triclopyr (Garlon 4 or equivalent) which will be applied directly to the stem of targeted woody species. The following species will be targeted for treatment: sweet gum, water oak, turkey oak, black jack oak, blue jack oak, red maple, wax myrtle, gallberry, fetter bush, sweet pepper bush, and sumac.
   - Herbicide mixture will contain the following:

  - 16% to 18% Triclopyr (Garlon 4 or equivalent).
  - 84% to 82% vegetable oil and adjuvant diluent.
- Herbicide treatment will be monitored for effectiveness the following growing season after application. If treatment has achieved less than 60% kill of targeted species, retreatment will be conducted the following winter.

Treatment Class 5:

This stand is dominated by loblolly pine poletimber. However, the majority of loblolly pine trees were killed in the Wedboo fire in the summer of 2011.

1. Site Preparation –
   - Midstory and understory hardwoods and shrubs will be removed by mastication.
2. Hand Planting -
   - In the late summer or early fall following site preparation burning, longleaf seedlings will be planted on a ten by ten foot spacing (435 seedlings per acre).
   - The planted stand will be protected from Rx burning using the same guidelines as described in treatment class 1.
3. Herbicide Release –
   - Longleaf seedlings will be released from woody competition one to two years after planting. The method of release will use dormant (leaf off) season basal bark (manual using back-pack sprayers) application of herbicide.
   - The herbicide used will be Triclopyr (Garlon 4 or equivalent) which will be applied directly to the stem of targeted woody species. The following species will be targeted for treatment: sweet gum, water oak, turkey oak, black jack oak, blue jack oak, red maple, wax myrtle, gallberry, fetter bush, sweet pepper bush, and sumac.
   - Herbicide mixture will contain the following:
     - 16% to 18% Triclopyr (Garlon 4 or equivalent).
     - 84% to 82% vegetable oil and adjuvant diluent.
   - Herbicide treatment will be monitored for effectiveness the following growing season after application. If treatment has achieved less than 60% kill of targeted species, retreatment will be conducted the following winter.

PRESCRIPTION #4: THIN TO PROMOTE MIXED PINE HARDWOODS – 488 acres.

These stands are dominated by loblolly pine and have heavy mid-story development due to infrequent occurrence of prescribed fire. The mid-story contains many desirable oak and hickory trees in the canopy and sub-canopy. This prescription will remove a substantial portion of the loblolly pine by thinning to a basal area of 40 to 50 square feet per acre providing ample canopy space to desirable oaks and hickories. Loblolly pine trees overtopping or adjacent to these desirable hardwoods will have a high priority for removal.

PRESCRIPTION #5: LOBLOLLY SEEDTREE CUT – 1,272 acres.

These stands are dominated by loblolly pine and have heavy mid-story development due to infrequent occurrence of prescribed fire.

Loblolly trees 4.6 inches DBH and greater will be harvested, leaving 10-20 sq. ft. / acre leaving the largest, best formed loblolly pine for structural diversity and to act as seed trees.

Mid-story vegetation will be removed either commercially as biomass or by mastication. Heavy equipment will be used to grind up small pine and hardwood midstory trees left after logging. If mastication is used, this shredded material will be scattered over the treatment area and not piled. In order to minimize soil disturbance, mastication will be done using machines with a compaction rating of 6 lbs. per square inch or less.

Desirable mast hardwoods, such as oaks and hickories, larger than 6 inches in diameter, will not be removed.

Stands will be allowed to seed back to loblolly pine.

WILDLIFE SNAG CREATION

Snag creation can play an important role in offsetting the impact of kleptoparasitism on the RCW and provides habitat for numerous species of fauna. Snags are a source of insects and other invertebrates that serve as food for various wildlife species. They also provide perches and cavities for many bird species, cover for small mammals and herpetofauna, and are future sources of downed woody debris. Various studies have shown that increases in the availability of snags on forest lands can lead to an increase in the species richness, diversity, and abundance of cavity nesting birds.

Intermediate thinning and longleaf pine conversion stands will be the primary areas selected for snag creation, but other treatment areas may be selected as well, especially if they are in close proximity to RCW clusters.

Once logging activities are completed, the "hack and squirt" method may be used to create snags for wildlife within each treatment area. The "hack and squirt" method will involve cutting into the cambium of selected trees with an axe or other sharp object and then applying an undiluted or 50% solution of Garlon 3A or equivalent (active ingredient triclopyr) in water to the cut surface.

Approximately one to two trees per acre will be selected for snag creation, and consist of tree species such as but not limited to sweetgum, red maple and loblolly pine.

Table 1: Proposed Action by Compartment, Stand, Acres and Treatment Class.

Prescription #1: FIRST COMMERCIAL THINNING.

Treatment Class #1: Thin pine down to 55-65 sq. ft. / acre. Biomass material, pine and hardwood trees less than 4.6 inches in DBH, may also be removed during the commercial thinning. Leave any longleaf trees wherever they may occur.

Treatment Class #2: Remove all loblolly and thin longleaf down to 55-65 sq. ft.

Compt.	Stand	Dominant Species	Dominant Size Class	Birth Year	Acres	Treatment Class
0002	007	Loblolly	Poletimber[3]	1987	64	1
0002	016	Loblolly	Poletimber	1989	53	1
0003	019	Loblolly	Poletimber	1988	21	1
0006	006	Loblolly	Poletimber	1988	109	1
0007	003	Loblolly	Poletimber	1978	58	1
0007	015	Loblolly	Poletimber	1986	12	1
0008	011	Loblolly	Poletimber	1989	51	1
0010	007	Loblolly	Poletimber	1989	65	1
0010	017	Loblolly	Poletimber	1987	322	1
0014	009	Loblolly	Poletimber	1986	47	1
0014	019	Loblolly	Poletimber	1989	46	1
0015	020	Loblolly	Poletimber	1983	12	1
0016	003	Loblolly	Poletimber	1986	23	1
0016	021	Loblolly	Poletimber	1989	11	1
0017	001	Loblolly	Poletimber	1989	10	1
0017	008	Longleaf	Poletimber	1985	43	2
0017	014	Loblolly	Poletimber	1985	15	1
0017	023	Loblolly	Poletimber	1989	6	1
0018	013	Loblolly	Poletimber	1987	60	1
0019	012	Loblolly	Poletimber	1986	60	1
0022	005	Loblolly	Poletimber	1987	93	1
0022	006	Loblolly	Poletimber	1987	40	1
0031	2, 17	Loblolly	Poletimber	1988	80	1
0031	003	Loblolly	Poletimber	1984	87	1
0032	001	Loblolly	Poletimber	1984	16	1
0033	002	Loblolly	Poletimber	1989	71	1
0033	003, 16	Loblolly	Poletimber	1988	258	1
0033	012, 10	Loblolly	Poletimber	1989	91	1
0034	001	Loblolly	Poletimber	1989	54	1
0034	002	Loblolly	Poletimber	1985	38	1

[3] Poletimber = 4.6" to 10" DBH

Prescription #1: FIRST COMMERCIAL THINNING (Continued)

Treatment Class #1: Thin pine down to 55-65 sq. ft. / acre. Biomass material, pine and hardwood trees less than 4.6 inches in DBH, may also be removed during the commercial thinning. Leave any longleaf trees wherever they may occur.

Treatment Class #2: Remove all loblolly and thin longleaf down to 55-65 sq. ft.

Compt.	Stand	Dominant Species	Dominant Size Class	Birth Year	Acres	Treatment Class
0034	004	Loblolly	Poletimber	1985	31	1
0034	005	Loblolly	Poletimber	1988	41	1
0034	006	Loblolly	Poletimber	1989	32	1
0034	010	Loblolly	Poletimber	1987	72	1
0034	012	Loblolly	Poletimber	1988	30	1
0034	014	Loblolly	PT/LgPT[4]	1984	80	1
0034	016	Loblolly	Poletimber	1983	79	1
0034	019	Loblolly	Poletimber	1988	51	1
0035	3,6,7	Loblolly	Poletimber	1989	57	1
0036	006	Lob/Long	Poletimber	1990	76	1
0036	007	Loblolly	Poletimber	1981	18	1
0036	012	Loblolly	Poletimber	1987	17	1
0036	013	Lob/Long	PT/LgPT	1990	32	1
0036	014	Loblolly	Poletimber	1989	68	1
0036	018	Loblolly	Poletimber	1990	41	1
0037	002	Loblolly	Poletimber	1985	40	1
0037	010	Loblolly	Poletimber	1989	16	1
0038	002	Loblolly	Poletimber	1989	13	1
0038	007	Loblolly	Poletimber	1988	52	1
0038	011	Loblolly	Poletimber	1990	59	1
0041	012	Loblolly	Poletimber	1989	52	1
0042	016	Loblolly	Poletimber	1989	33	1
0048	017	Loblolly	Poletimber	1988	41	1
0049	002	Loblolly	Poletimber	1989	155	1
0049	004	Loblolly	Poletimber	1989	47	1
0049	011	Loblolly	Poletimber	1988	32	1
0049	013,014	Loblolly	Poletimber	1980	173	1
0049	019	Loblolly	Poletimber	1990	29	1
0050	005	Loblolly	Poletimber	1984	17	1
0050	009	Loblolly	Poletimber	2001	40	1
0050	014	Loblolly	Poletimber	1988	62	1
0050	015	Loblolly	Poletimber	1986	42	1

[4] PT/LgPT = 4.6" to 12.9" DBH

Prescription #1: FIRST COMMERCIAL THINNING (Continued)

Treatment Class #1: Thin pine down to 55-65 sq. ft. / acre. Biomass material, pine and hardwood trees less than 4.6 inches in DBH, may also be removed during the commercial thinning. Leave any longleaf trees wherever they may occur.

Treatment Class #2: Remove all loblolly and thin longleaf down to 55-65 sq. ft.

Compt.	Stand	Dominant Species	Dominant Size Class	Birth Year	Acres	Treatment Class
0050	016	Loblolly	Poletimber	1989	4	**1**
0051	004	Loblolly	Poletimber	1990	20	**1**
0051	005	Loblolly	Poletimber	1989	34	**1**
0051	020	Loblolly	Poletimber	1989	76	**1**
0051	021	Loblolly	Poletimber	1993	47	**1**
0051	023	Loblolly	Poletimber	1989	39	**1**
0062	016,017	Loblolly	Poletimber	1982	29	**1**
0062	023	Longleaf	Poletimber	1975	7	**2**
0062	024	Loblolly	PT/LgPT	1964	29	**1**
0062	034	Lob/Long	Poletimber	1986	11	**1**
0062	037	Loblolly	Poletimber	1975	44	**1**
0063	013	Longleaf	Poletimber	1987	12	**2**
0064	015	Loblolly	Poletimber	1987	69	**1**
0064	023	Loblolly	Poletimber	1986	11	**1**
0070	001	Loblolly	Poletimber	1989	145	**1**
0070	008	Loblolly	PT/LgPT	1982	25	**1**
0070	009	Loblolly	Poletimber	1986	103	**1**
0070	010	Loblolly	Poletimber	1988	28	**1**
				Total	**4,277**	

Prescription #2: INTERMEDIATE THINNING

Treatment Class #1: Thin pine down to 65-75 sq. ft. / acre. Biomass material (pine and hardwood trees less than 4.6 inches in DBH) may also be removed during the commercial thinning. Leave any longleaf trees wherever they occur.

Treatment Class #2: Thin pine to 55-65 sq. ft. per acre. Leave any Longleaf trees wherever they occur.

Treatment Class #3: Thin pine to 45-55 sq. ft. per acre to manage foraging habitat for RCW Cluster. Favor scattered longleaf. Midstory will be removed either by commercial harvest or as biomass or by non-commercial mastication.

Compt.	Stand	Dominant Species	Dominant Size Class	Age	Acres	Treatment Class
0001	010	Loblolly	Sawtimber[5]	1969	69	**1**
0003	018	Loblolly	Sawtimber	1977	69	**1**
0003	026	Loblolly	Sawtimber	1981	34	**1**
0004	001	Loblolly	Lg PT[6]/ST[7]	1970	143	**1**
0015	003	Loblolly	LgPT/ST	1974	225	**3**
0015	013	Loblolly	Sawtimber	1975	56	**3**
0015	019	Loblolly	Lg PT	1976	50	**1**
0015	023	Loblolly	Sawtimber	1979	36	**1**
0016	009	Loblolly	Lg PT	1975	71	**3**
0017	016	Loblolly	PT/ST	1976	96	**2**
0020	011,012	Loblolly	Lg PT/ST	1978	114	**1**
0022	003	Loblolly	Sawtimber	1973	23	**1**
0037	012	Loblolly	Sawtimber	1948	30	**1**
0038	006	Loblolly	Lg PT/ST	1972	72	**3**
0038	008	Loblolly	LgPT/ST	1972	62	**1**
0045	010,009	Loblolly	Sawtimber	1970	45	**2**
0063	012	Lob/Long	PT/LgPT	1981	24	**3**
0063	025	Lob/Long	LgPT/ST	1973	51	**3**
0070	025	Loblolly	Sawtimber	1983	13	**1**
				Total	**1,283**	

[5] 13"DBH or larger
[6] Lg PT = Large Poletimber (10"-12.9" DBH)
[7] ST = Sawtimber (13" DBH or larger)

Prescription #3: LONGLEAF RESTORATION

Treatment Class #1: Remove loblolly, leaving 6-10 of the largest trees/acre. Retain any longleaf. Site preparation by prescribed burning. Hand plant longleaf seedlings.

Treatment Class #2: Remove loblolly, leaving 6-10 of the largest trees/acre. Retain any longleaf. Site preparation by mastication and prescribed burning. Hand plant longleaf seedlings. Hand release longleaf seedlings using herbicide.

Treatment Class #3: Remove loblolly and retain all longleaf.

Treatment Class #4: Remove loblolly and retain longleaf. Site preparation by mastication and prescribed burning. Hand plant longleaf seedlings. Hand release longleaf seedlings using herbicide.

Treatment Class #5: Majority of loblolly poletimber was killed in the Wedboo fire. Site preparation by mastication and prescribed burning. Hand plant longleaf seedlings. Hand release longleaf seedlings using herbicide.

Compt.	Stand	Dominant Species	Dominant Size Class	Age Year	Acres	Treatment Class
0004	024	Lob/Long	Poletimber	1988	126	**3**
0015	009	Loblolly	Poletimber	2011	27	**5**
0015	010	Loblolly	Poletimber	1986	35	**2**
0015	017	Loblolly	Poletimber	1988	70	**2**
0016	004	Loblolly	Poletimber	1991	33	**2**
0016	017	Loblolly	Poletimber	1989	51	**2**
0017	005	Loblolly	Poletimber	1985	59	**2**
0018	019	Lob/Long	Poletimber	1985	56	**4**
0036	019	Loblolly	LgPT/ST	1988	37	**2**
0036	022	Loblolly	LgPT/ST	1967	40	**2**
0044	001	Loblolly	LgPT/ST	1973	69	**1**
0045	014	Loblolly	Poletimber	1985	26	**1**
0045	016	Loblolly	PT/LgPT	1966	11	**1**
0046	020	Loblolly	LgPT/ST	1963	23	**1**
0047	001	Loblolly	LgPT/ST	1976	32	**1**
0062	007	Loblolly	PT/LgPT	1965	39	**2**
0063	007	Loblolly	LgPT/ST	1973	32	**1**
0064	003	Loblolly	LgPT/ST	1973	35	**1**
				Total	**801**	

Prescription #4: THIN TO PROMOTE MIXED PINE/HARDWOOD.

Treatment Class #1: Thin pine down to 40-50 sq. ft. / acre, releasing favorable hardwoods where possible.

Compt.	Stand	Dominant Species	Dominant Size Class	Age	Acres	Treatment Class
0001	003	Loblolly	Sawtimber	1974	129	**1**[8]
0003	021	Loblolly	Poletimber	1988	40	**1**
0009	009	Loblolly	Poletimber	1989	80	**1**
0009	011	Loblolly	Poletimber	1983	58	**1**[9]
0010	002	Loblolly	PT/ST	1987	92	**1**
0010	008	Loblolly	Sawtimber	1946	89	**1**
				Total	**488**	

[1] Patches of Shortleaf, favor Shortleaf where possible.
[9] Large portion of stand contains class II heritage sites.

Prescription #5: LOBLOLLY SEEDTREE CUT.

Treatment Class #1: Cut down to 10-20 sq. ft. / acre leaving the largest, best formed loblolly pine. Site preparation will be by mastication to remove midstory hardwoods.

Compt.	Stand	Dominant Species	Dominant Size Class	Age	Acres	Treatment Class
0001	2	Loblolly	Sawtimber	1964	38	1
0002	9	Loblolly	Sawtimber	1967	38	1
0007	7	Loblolly	Sawtimber	1967	21	1
0009	16	Loblolly	Sawtimber	1984	80	1
0009	19	Loblolly	Sawtimber	1939	80	1
0010	20	Loblolly	Poletimber	1987	79	1
0017	20	Loblolly	Poletimber	1972	48	1
0017	26	Loblolly	Poletimber	1972	33	1
0022	2	Loblolly	Sawtimber	1973	78	1
0022	10	Loblolly	Sawtimber	1981	65	1
0032	6	Loblolly	Poletimber	1989	79	1
0033	4	Loblolly	Sawtimber	1957	45	1
0033	9	Loblolly	Sawtimber	1956	80	1
0034	13	Loblolly	Sawtimber	1940	79	1
0039	2	Loblolly	Sawtimber	1971	79	1
0042	10	Loblolly	Poletimber	1985	80	1
0049	8	Loblolly	Sawtimber	1970	79	1
0049	18	Loblolly	Sawtimber	1971	69	1
0051	9	Loblolly	Sawtimber	1967	45	1
0070	16	Loblolly	Poletimber	1987	77	1
				Total	**1,272**	

CONNECTED ACTIONS

Connected actions associated with this project include:

1) Construction of fire lines around prepared and sold timber sale units to protect them from fire when the surrounding compartment is being prescribed burned.
2) Construction of fire lines to protect first year planted longleaf pine seedlings from fire when the surrounding compartment is being prescribed burned. Planted longleaf pine areas will be burned on a two to three year rotation after they have become established, usually by the second year after planting.
3) Construction of skid trails, landings and temporary roads for the removal and loading or chipping of trees on site. Temporary roads (4.48 miles) and ramps will be needed to access some landings.

4) Approximately 53.95 miles of system road reconstruction and maintenance will be needed. Reconstruction work will consist of, but not be limited to: laying gravel on road surfaces, replacing culverts, ditch cleaning, removing brush and trees along road rights-of-way, installing or replacing gates, and correcting road safety hazards. Maintenance will consist of spot gravel, road grading, cleaning culverts, light brushing and mowing. The intent is to have a maintainable forest road system within the project area. Some road improvement activities are necessary to bring roads up to a maintainable standard especially on newly acquired lands.
5) Log decks and primary skid trails will be disked and planted in native vegetation and/or desirable non-native annual crop species dependent upon costs and resources available.

Connected Actions	Estimated (miles/quantity)
Firelines - (to protect timber sales and newly planted longleaf stands)	Up to 10 miles per year for 3 years
Temporary roads needed for logging	11 temporary roads for a total of 4.48 mile
System road reconstruction	53.95 miles
Culvert replacement	25 culverts

Temporary roads will be needed in the following stands:

Compartment	Stand	Length (miles)	Prescription
3	19	.15	1st Thinning
15	3	.50	Intermediate Thin
17	5	.22	Longleaf Restoration
17	20, 26	.48	Loblolly Seedtree
19	12	.61	1st Thinning
20	11	.65	Intermediate Thin
45	9,10	.65	Intermediate Thin
49	8	.25	Loblolly Seedtree
50	9	.32	1st thinning
62	37	.55	1st Thinning
70	16	.10	Loblolly Seedtree
	TOTAL MILES	**4.48**	

Maps showing the locations of the proposed temporary roads are located in Appendix A of the EA.

Prescribed fire will continue to be used to maintain and enhance desired conditions and to reduce hazardous fuel levels in stands to be treated. The use of prescribed burning is covered under *Prescribed Fire on the Francis Marion National Forest Environmental Assessment (2005) and the Decision Notice.*

DESIGN CRITERIA

Forest wide standards, guidelines, goals, and objectives are found in the *Revised Land and Resource Management Plan for the Francis Marion National Forest* (1995), *South Carolina's Best Management Practices for Forestry* (BMP's) (SCFC, 2003) and Soil and Conservation Practices Guide for R8. Additional management requirements and mitigation measures can be found in the *Final Environmental Impact Statement, Vegetation Management in the Coastal Plain/Piedmont.*

Activities and effects will be monitored to ensure compliance with the Monitoring Plan (Forest Plan, Appendix B).

The following design criteria will apply to Alternatives 2:

Cultural Resources

1. Identified national register or eligible properties will be marked and avoided during site disturbing activities associated with logging, temporary road construction, road reconstruction, fireline construction and reconstruction. If cultural resources are discovered during implementation, work will stop and the site will be evaluated for National Register eligibility.

Red Cockaded Woodpecker

2. Mechanical activities will not be conducted within 200 feet of an RCW cluster during the RCW breeding season (April 1st – July 31st) in order to reduce the potential impact of disturbance on nesting activities.

3. Mechanical activities within RCW clusters will only take place between one hour after sunrise and one hour before sunset year round.

4. No new firelines will be installed within 200 feet of RCW cavity trees except where needed to construct firelines adjacent to private property lines.

5. No heavy equipment will pass through active RCW clusters on the way to harvest areas for treatment with the **exception** of the following:

    a. Clusters that occur along existing roads and which cannot be avoided using alternate routes.
    b. Logging equipment conducting habitat improvement activities within an RCW cluster.

6. Any temporary haul road that passes through an RCW cluster will limit heavy equipment operations between one hour before sunset and one hour after sunrise.

7. Log decks will not be placed within clusters.

8. Logging equipment will not be permitted to stop within clusters, unless habitat improvement activities are occurring within the cluster.

9. Thinning may take place within 50 feet of RCW cavity trees if it can be done without soil rutting or damaging the cavity trees. Logging activities will be immediately suspended at the first sign of rutting within this 50 foot zone.

Other Threatened, Endangered and Sensitive Species

Firelines, temporary road construction, skid trails and log landings will not be placed at known site locations of threatened, endangered and sensitive species. Also see Design Criteria #31 below.

Fisheries and Streamside Zone Management

10. New culverts and culvert replacements will allow for aquatic organism passage where deemed appropriate.

11. Perennial and intermittent streams will be identified on sale area maps and protective measures will be specified in the timber sale contract.

12. To minimize disturbance, woody debris (limbs and logs) may be used on skid trails when they cross intermittent streams. The un-embedded woody material on the surface will be removed after skidding is completed. Woody material embedded or "worked in" to the soil will not be removed and soil will not be put into the stream. Normal stream flow pattern, channel form and stability will be maintained.

Soils Management and Isolated Wetlands

13. Logging will not take place under the following soil conditions:

- There is evidence of surface ponding of water.
- The water table is within 18 inches of the surface (12 inches on plastic soils).
- Soil moisture exceeds plastic limit (plastic limit is exceeded if soil can be rolled to pencil size without breaking or crumbling).

14. Skid Trails and timber harvesting will not occur within isolated wetlands.

15. On wet soil types, and mapped remnant savanna habitats, locate skid trails, log landings and log ramps according to the following criteria and only as designated by a forest officer:

a. Locate log landings on elevated terrain. Use existing log decks where possible.
b. Limit concentrated skid trails and log landings to no more than 10% of the area.
c. Construct log ramps on the best drained sites.

16. Skid trails will not be installed immediately adjacent to isolated wetlands and skid trails will be located parallel to wetland edges instead of perpendicular to them unless approved by the district wildlife biologist.

17. When harvesting timber adjacent to isolated wetlands, trees will be felled away from and not into the wetlands.

Firelines

18. Temporary firelines will be used in the short term as needed to exclude some units from burning in order to protect newly established regeneration or to avoid fire impact to recently prepared sale units.

19. Dozer firelines will be bladed as opposed to being constructed with a fire plow in order to prevent rutting and channeling of water.

20. Dozer firelines will not be used within riparian areas except where they must tie into stream channels or other water bodies to contain the burn. Where dozer lines tie into stream channels or other water bodies, soil disturbance will be kept to a minimum by avoiding blading or altering surface or subsurface soils as much as possible. Crossing flowing streams or water bodies with dozers or other heavy equipment will be avoided.

Visual Quality

21. Slash on logging decks will be treated (for example: removed, chipped or scattered) to within an average of two feet of the ground within 200 feet of SC Hwy 17A, SC Hwy 45, Bethera, Greentown, Hoodtown, and Wrenn roads and Jericho horse trail.

22. When possible, log landings, roads and bladed skid trails will be located out of view from major travel routes (public roads and highways) and minimize exposure of bare mineral soil.

23. Flowering and other visually attractive desirable hardwood trees will be left in seed-tree units where possible.

Snags

24. Existing snags will be left standing for wildlife if they do not pose a safety hazard or interfer with project work.

Herbicide Use

25. Herbicide mix water must come from a public water supply and will be carried to the site by the contractor or workers.

26. Trucks containing herbicide or tank mixed herbicide will not be allowed to park within 200 feet of a stream or pond. Herbicide mixing, loading or cleaning areas will not be located within 200 feet of open water.

27. Streams will be protected from herbicide translocation by avoiding herbicide application within a minimum of 40 feet of streams and isolated wetlands.

28. Notice signs will be posted where public access is likely and will include the application date, herbicide applied and safe reentry date.

29. In three stands (compartment 15, stand 17; compartment 16, stand 17; and, compartment 36, stand 22), Carolina tuff grass, crested fringed orchid, Curtis' dropseed, and incised groovebur will be located and a buffer will be flagged around them so they can be avoided before the herbicide application.

Non-Native Invasive Species (plants)

30. All mechanical equipment used in association with this project will be subject to equipment cleaning provisions in order to prevent the introduction and spread of non-native invasive species (NNIS) into the project area. NNIS occurring in stands proposed for treatment (see Table 3.2.1A-2) will be evaluated for treatment prior to and after logging operations.

Protection of Threatened and Endangered Plants

31. The following measures will be taken to protect sites containing threatened, endangered and sensitive plants:

- Compartment 15 Stand 17 (See map B-1 in Appendix B): Several stems of ***Carolina fluffgrass*** (*Tridens caroliniana*) found in a small group just outside the northern boundary of the stand. Have district wildlife fish rare plant (WFRP) personnel flag site to avoid all logging activities and avoid herbicide treatment.
- Compartment 15 Stand 19 (See map B-1 in Appendix B): One plant of ***Carolina fluffgrass*** (*Tridens caroliniana*) found in a small opening within the stand. Have district wildlife fish rare plant (WFRP) personnel flag site to avoid all logging activities.
- Compartment 16 Stand 17 (See map B-2 in Appendix B): Have district WFRP personnel flag out the two sites containing the ***Crested Fringed Orchid*** (*Pteroglossapsis ecristata*) in order to avoid logging activities and avoid herbicide release treatment.
- Compartment 17 Stand 26 (See map B-3 in Appendix B): Have district WFRP personnel flag out the depression wetland containing ***Boykin's lobelia*** (*Lobelia boykinii*) in order to avoid all logging activities.
- Compartment 36 Stand 22 (See map B-4 in Appendix B): Have district WFRP personnel flag out the areas containing ***Curtis' dropseed*** (*Sporobulus curtissii*), ***Carolina fluffgrass*** (*Tridens caroliniana*) and ***Incised groovebur*** (*Agrimonia incise*) in order to avoid log decks or skid trails during logging as well as avoid herbicide release treatment.

- Compartment 37 Stand 12 (See map B-5 in Appendix B): Have district WFRP personnel flag out the area containing ***Curtis' dropseed*** (*Sporobulus curtissii*) in order to avoid log decks or skid trails during logging.
- Compartment 46 Stand 20 (See map B-6 in Appendix B): Have district WFRP personnel flag ***Pineland plantain*** (*Plantago sparsiflora*) along Hwy 41 to avoid all logging activities.
- Compartment 47 Stand 1 (See map B-7 in Appendix B): Have district WFRP personnel flag out the three areas containing ***Curtis' dropseed*** (*Sporobulus curtissii*) in order to avoid log decks or skid trails during logging.
- Compartment 62 Stand 23 (See map B-8 in Appendix B): One plant of ***Pineland plantain*** (*Plantago sparsiflora*) found in the ROW along road FS 118. Have district WFRP personnel flag site to avoid all logging activities.

Recreation

32. To minimize the impacts to the Jericho Horse/Palmetto trail the following measures will be taken for compartment 70, stands 1, 9, 16 and compartment 64, stand 23.

    a. Skidding timber across the above trail will be minimized. Any skidding necessary will be perpendicular to the trail.
    b. Skidder trails that cross the trail will be signed as "Closed to Traffic" to prevent recreational trail users from using the skidder trails.
    c. The trail will not be used for skidding timber or temporary haul roads except where the trail is located on an existing woods road. After the sale, this section of trail will be cleaned, smoothed and bladed to facilitate use by recreational trail users. Logging use of existing trails will be coordinated with district recreation staff prior to use.
    d. Signs warning the public will be placed on all trail access points where logging activities are occurring. The trail will be closed when appropriate.

REASONS FOR THE DECISION

I considered the environmental effects of the alternatives in making my decision. The reasons for selecting Alternative 2 were:

- ✓ Reduces hazardous fuel loadings in dense pine stands.
    - o Approximately 10% to 20% of the pine stands in the analysis area are densely stocked, less than 30 years old and have not been burned within the last decade. There is a need for thinning in order to reduce vertical fuel continuity ("ladder fuels"), thereby reducing the risk of catastrophic wild fire and allowing the safe reintroduction of prescribed burning.
- ✓ Increases the health and vigor of the stands by reducing tree densities.
    - o The dense pine stands mentioned above pose a high risk of southern pine beetle infestation and damage from disease due to poor growth and vigor. There is a

need to reduce stocking levels in these stands in order to reduce the above risks and promote forest health.

✓ Enhances RCW foraging and nesting habitat.

- The Macedonia analysis area has a large population of red-cockaded woodpecker which is listed by the United States Fish and Wildlife service as endangered. Approximately 27,000 acres (54%) of the analysis area is dominated by loblolly, longleaf and pine/hardwood stands. Less than half (46%) of this pine acreage contains trees large enough (greater than 10 inches in diameter at breast height) to provide adequate RCW foraging and nesting habitat. The rest of the acreage (54%) is in dense pine stands where most of the stems are less than 10 inches in diameter and therefore are not currently providing foraging habitat.

- There is a need to thin younger stands to improve the growth and vigor of the remaining pine trees so they reach foraging size sooner.

- There is a need to thin older pine stands to create more open canopy and midstory conditions that are conducive to RCW feeding and nesting behavior.

- There is also a need to convert young loblolly stands to longleaf pine. Longleaf provides higher quality foraging and nesting habitat in the future and is much less vulnerable to mortality from fire, southern pine beetle infestation, tree diseases and hurricanes.

✓ Improves conditions for fire dependent plant and animal communities.

- The majority of the land in the analysis area has seen very little prescribed fire to restore and maintain fire dependent communities. This is due largely to a heavy urban interface and traffic routes within the analysis area. However, there are opportunities to expand the core burn area into a portion of the Macedonia AA where burning on a 2-3 year cycle can be accomplished with reasonable mitigation costs. In order to enhance the effectiveness of the burning in promoting fire dependent plant and animal communities, there is a need to thin densely stocked pine stands of all ages to reduce canopy densities and allow greater solar radiation to penetrate to the ground layer.

✓ Restores longleaf pine on a portion of stands now dominated by loblolly pine where prescribed fire can be consistently applied and soil types are suitable.

- It is estimated that 50 to 75% of the original longleaf component in the analysis area has been converted to loblolly pine due to past land use practices in the early twentieth century and catastrophic events such as Hurricane Hugo. There is a need to restore the original longleaf forests that are now dominated by loblolly pine in order to ensure long term ecological health by reestablishing this important keystone species.

- ✓ Creates early successional habitat and structural diversity by establishing younger age classes in the pine forest type.

    - Due to the lack of early seral stage habitat (currently less than 5%) there is a need to create this habitat by removing a substantial portion of the canopy of the dominant stand. Early seral stages of grass-forb-shrub habitat will benefit species such as the yellow-breasted chat, eastern bluebird, eastern kingsnake, and white-eyed vireo.

- ✓ Enhances the mixed pine/hardwood forest type in stands where RCW habitat is not emphasized, prescribed burning is limited and where there is a substantial hardmast component in the midstory.

    - The mixed pine/hardwood forest type will be one of many habitats that will complement the RCW/fire habitat. The proposed mixed pine/hardwood stands will contain an abundance of mast producing trees which will benefit wildlife species such as deer and turkey.

Alternatives Considered

Two other alternatives were considered in the Environmental Assessment.

Alternative 1 (No Action)

Only projects covered under previous environmental decisions would have been implemented along with ongoing recreational activity and road maintenance. I did not select this alternative because it did not meet the purpose and need. There would be decreased growth and a decline in forest health/tree vigor over time under this alternative. Conditions for fire-dependent species would have continued to decline including for federally listed threatened and endangered species such as the red-cockaded woodpecker. Habitat diversity would be less under this alternative than under alternative 2. This alternative also foregoes opportunities for to expand the longleaf pine ecosystem.

Alternative 3

I did not select this alternative because

Manual release of longleaf seedlings from competing vegetation for prescription 3, treatment classes 2, 4 and 5 would provide only temporary release benefits to the planted seedlings. Because the hardwood root stocks would not be killed, vigorous sprouting would results in a dense coppice of woody vegetation that would out-compete the longleaf seedlings, adversely affecting their growth and survival. This would increase the probability for the need of multiple plantings. Dense woody growth would persist even if prescribed fire were used on a biennial return interval, preventing the conversion to a grass, forb dominated plant community.

Under this alternative, there would be a high probability the objectives of longleaf conversion would be compromised and the understory dominated by woody vegetation.

Alternatives Considered but Not Developed

Thinning as used in this EA is synonymous with stocking control. The intent is to reduce the number of tree stems in a forested stand based on site quality and capability to achieve the stated purpose and need. Three other action alternatives were considered but not developed.

- An alternative to use noncommercial treatments consisting of mechanical (chippers) and manual methods (chainsaws) was considered but not developed. Some stands are very dense and the material left on the ground would pose a fire hazard if not treated. In addition, these types of treatments are very expensive to implement resulting in a lower number of acres that could be treated. A large portion of the project area would remain untreated and the purpose and need could not be met with this alternative.

- An alternative to only prescribe burn was considered but not developed because stands are very dense and fire would not reduce stand densities over enough of the area. Fire would treat just a portion of the fuels and would not create enough gaps in the canopy to establish desired habitat conditions. The purpose and need could not be met with this alternative.

- An alternative was considered to not build any temporary roads. However, this alternative was not developed because temporary roads are needed to access the stands in need of treatment. Not treating these stands would result in a majority of them being over stocked and at risk for insect and disease attack. Past experience shows that temporary roads on the coastal plain have minimal long term resource effects if Forest Plan standards and guidelines are followed including adherence to *South Carolina's Best Management Practices for Forestry* and *Soil and Conservation Practices Guide for R8.*

Public Involvement

The project was first listed in the Schedule of Proposed Actions (SOPA) in April 01, 2013. The scoping period for this project began January 25, 2013 and ended February 28, 2013. The Francis Marion National Forest mailed a letter describing the proposed action and purpose and need requesting public input on the project from individuals and agencies included on a District mailing list. Three letters were received during the scoping period.

One letter was received during the 30 day notice and comment period which began March 20, 2014. A "Response to Comments" was completed by the Forest Service and is contained in the project record. This information was used to clarify effects from some of the activities and connected actions as well evaluate another alternative brought forth by the public.

Findings Required by Other Laws and Regulations

Forest Plan Consistency

The alternative is consistent with the *Revised Land and Resource Management Plan, Francis Marion National Forest* (LRMP) as stated on page 6 of the EA.

This project is consistent with the Memorandum of Understanding (MOU) signed between the Advisory Council on Historic Preservation, The South Carolina Department of Archives and History and the Francis Marion and Sumter National Forests. The MOU was developed to comply with the terms of the Programmatic Agreement concerning the management of historic properties on national forest lands in the Southern Region, which was executed on November 19, 1992 and to satisfy the National Forest's responsibilities under Section 106 of the National Historic Preservation Act (NHPA). The MOU establishes Categorical Exclusions for routine and recurrent activities that are unlikely to affect heritage properties, including prescribed burns and new fireline construction.

National Forest Management Act (NFMA)

Timber will be harvested in accordance with the National Forest Management Act (NFMA) as specified under 16 U.S.C. 1604 (g)(3)(E) and (F). Chapter 3 of the environmental assessment and the associated project file discloses the effects of harvest on soils and watershed conditions. Design criteria, LRMP standards and guidelines, and South Carolina Best Management practices (BMPs) will be followed. This provides protection to streams, stream banks, wetlands, and other bodies of water from detrimental changes in water temperatures, and deposits of sediment that could impact aquatic species or habitat. The harvesting system was not selected on basis of greatest dollar return or the greatest unit output of timber.

The potential environmental, biological, esthetic, engineering, and economic impacts have been assessed (EA, Chapter 3). Maximum size limits for regeneration cut areas are within LRMP directions for the selected alternative. All harvesting will be carried out in a manner that protects soil, water, fish, wildlife, recreation, and esthetic resources and the regeneration of the timber resource [EA, Chapter 3].

Other

A Biological Evaluation (BE) was completed for this project on January 2014 and is included in the project file. A determination of "Not likely to adversely affect, beneficial effects" was made for red-cockaded woodpecker. A determination of "No Effect" was made for the American bald eagle and pondberry.

A letter of concurrence was received from the US Fish and Wildlife Service on March 10, 2014.

A determination of "no impact" was made for the following sensitive species: incised groovebur and Carolina dropseed.

A determination of "beneficial impact" was made for the sensitive Bachman's sparrow.

A determination of "May impact individuals but not likely to cause a trend to federal listing or a loss of viability" was made for the following sensitive species: pineland plantain, crested fringed orchid, pineland dropseed and Carolina fluffgrass.

The project area was surveyed for cultural resources and a report submitted to the South Carolina State Historic Preservation Office (SHPO). The SHPO concurred on this project in four separate letters dated: September 30, 2011; September 28, 2012; January 11, 2013; and, January 8, 2014.

A travel analysis process report (TAP) has been completed following procedures found in Forest Service Handbook (FSH) 7709.55 and was used to inform my decision on management of roads in the analysis area and identification of the minimum road system needed for current and future management in the area. The TAP is located in the project file.

Finding of No Significant Impact (FONSI)

I have determined that Alternative 2 will not have a significant effect on the human environment based on the significance criteria of both context and intensity as defined by the National Environmental Policy Act in 40 CFR 1508.27. This alternative with mitigation measures and monitoring best meets the Purpose and Need as stated in the *Macedonia Environmental Assessment* (EA). I have concluded that an environmental impact statement is not necessary based on the following factors:

Context

The physical, biological, and social effects are limited to the project area and immediate adjacent areas, which are analyzed in Chapter 3 of the EA. All actions are consistent with the *Revised Land and Resource Management Plan, Francis Marion National Forest* (LRMP) and all environmental effects are within the range disclosed in the *Final Environmental Impact Statement for the Revised Francis Marion National Forest.*

Intensity

1. Both adverse and beneficial impacts of the selected alternative are discussed and there are no significant adverse effects of the selected alternative. There are no known significant irreversible resource commitments or any significant irretrievable losses of timber production, wildlife habitats, soil productivity or water quality. (EA, Chapter 3, pages 37-141)

2. The assessment describes the risks associated with each of the alternatives. Public health and safety will be minimally affected by the selected alternative. (EA, Chapter 3, pages 132-135)

3. The analysis identified no significant impacts to any unique areas. (EA, Chapter 3, pages 37-141)

4. The effects on the quality of the human environment are not likely to be controversial based on public involvement and with input from the interdisciplinary team. (EA and Response to Comments documents located in the project file)

5. This action is similar to many past actions, both in the analysis area and adjacent areas. There will not be any highly uncertain effects that involve unique or unknown risks. (EA, Chapter 3 pages 37-141 and past annual Francis Marion National Forest Monitoring Reports)

6. This project will not set precedence for future actions with significant effects or represents a decision in principle about future projects. (EA, section 1.7, Decision to be Made, page 9)

7. There are no known significant cumulative effects from this project and other past or reasonably foreseeable projects in the area. (EA, Chapter 3, pages 37-141)

8. There are no known significant impacts on any proposed or listed National Historic places or any loss or destruction of any scientific, cultural or historic places. The direct, indirect, and cumulative effects are disclosed in the EA (pages 116-120). Design criteria in the EA will protect these sites and any new ones discovered during implementation. The South Carolina State Historic Preservation Office was consulted and concurred with the finding that the proposed Macedonia project will have no effect on any National Register or eligible properties (letters dated: September 30, 2011; September 28, 2012; January 11, 2013; and, January 8, 2014).

9. A Biological Evaluation (BE) was completed for this project and is part of the project file. A determination of "Not likely to adversely affect, beneficial effects" was made for red-cockaded woodpecker and a determination of "No Effect" was made for the American bald eagle and pondberry. A Letter of concurrence was received from the US Fish and Wildlife Service on March 10, 2014.Effects to proposed, endangered, threatened and sensitive species are described on pages 88-93.

10. The actions do not threatened a violation of federal, state, or local environmental laws. (EA, pages 6, Management Direction and LRMP)

Objection Opportunities

This decision was subject to objection pursuant to 36 CFR 218, and a legal notice of the opportunity to object was published on May 29, 2014, in the *Post and Courier* newspaper, Charleston, South Carolina and sent to those who provided comments during the project's development. No objections were filed during the 45-day objection filing period

Implementation

This decision may be implemented any time after the date of signature.

Contact

For further information concerning this Decision Notice contact Bill Twomey, 2967 Steed Creek Road, Huger, South Carolina 29450, Telephone: (843) 336-3248, FAX: (843) 336-2250.

Tony White
Acting District Ranger
Francis Marion Ranger District

07/22/2014
Date

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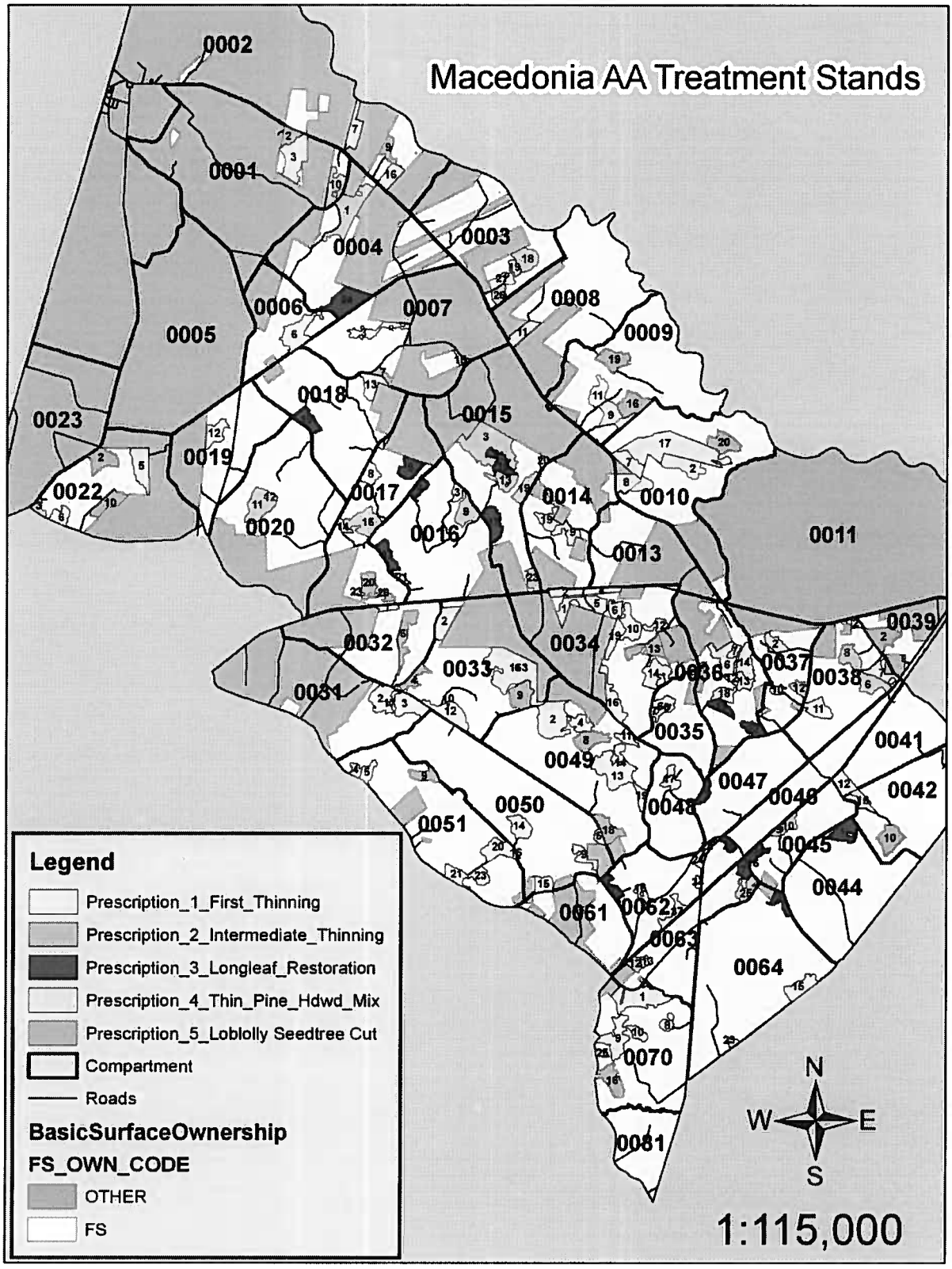
Macedonia AA Treatment Stands
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Legend
Prescription_1_First_Thinning
Prescription_2_Intermediate_Thinning
Prescription_3_Longleaf_Restoration
Prescription_4_Thin_Pine_Hdwd_Mix
Prescription_5_Loblolly Seedtree Cut
Compartment
Roads
BasicSurfaceOwnership
FS_OWN_CODE
OTHER
FS