United States
Department of
Agriculture

1989
Francis Marion National Forest
After Hurricane Hugo

2016
Francis Marion
National Forest

Draft Record of Decision

for the Final Environmental Impact Statement
and the Revised Land Management Plan

Forest Service | Region 8 | Francis Marion National Forest | R8-MB 149 E | August 2016

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer and lender.

Draft Record of Decision

for the
Francis Marion National Forest
Final Environmental Impact Statement and
Revised Land Management Plan

Berkeley and Charleston Counties, South Carolina

Lead Agency:	**USDA Forest Service**
Responsible Official:	**Rick Lint, Forest Supervisor** 4931 Broad River Road Columbia, SC 29212
For Information Contact:	**Mary Morrison, Project Leader** 4931 Broad River Road Columbia, SC 29212 Phone: 803-561-4000 http://www.fs.usda.gov/goto/scnfs/fmplan

Table of Contents

List of Acronyms ii
Introduction 1
  Purpose and Need and Proposed Action 1
  The Nature of this Decision 1
Decision and Rationale for the Decision 3
  Meeting Substantive Requirements of the Rule 17
Alternative Development 20
  Changes from DEIS to FEIS 21
Alternatives Considered in Detail 22
  Alternative 1 – No Action (1996 Forest Plan) 22
  Alternative 2 - Proposed Action 22
  Alternative 3 22
Alternatives Considered but Eliminated from Detailed Study 22
Environmentally Preferable Alternative 23
Best Available Scientific Information 23
Public Involvement 26
Tribal Consultation 26
Research Station Director Concurrence 27
Coordination with other Federal Agencies and State and local governments 27
  Berkeley and Charleston County 27
  State Agencies 28
  Tribes 29
  Federal Agencies 29
Findings Required by Other Laws and Regulations 29
  Clean Air Act 29
  Clean Water Act 30
  Endangered Species Act 30
  Executive Order 12898 - Environmental Justice 31
  Executive Order 1190 and 11998 – Wetlands and Floodplain Management 31
  Magnuson-Stevens Fishery Conservation and Management Act, Public Law 94-265 32
  National Environmental Policy Act (NEPA) 32
  National Forest Management Act (NFMA) 32
  National Historic Preservation Act 33
Effective Date and Plan Implementation 33
Transition to the Revised Land Management Plan 34
Plan Amendments 34
Administrative Review 35
Contact Person 35

List of Acronyms

DEIS	Draft Environmental Impact Statement
Draft ROD	Draft Record of Decision
FEIS	Final Environmental Impact Statement
MMCF	Million Cubic Feet
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
RIZ	Resource Integration Zone
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SCC	Species of conservation concern
SCORP	South Carolina Statewide Comprehensive Outdoor Recreation Plan
USDI	United States Department of Interior

Introduction

This draft record of decision (draft ROD) documents my decision and rationale for approving the Francis Marion Revised Land Management Plan (hereafter also referred to as the "revised land management plan" or "revised plan"). This decision is based on alternative 2 as displayed in the Francis Marion National Forest Revised Land Management Plan Final Environmental Impact Statement (FEIS).

The area affected by this decision is the Francis Marion National Forest ("Forest" or "Francis Marion") located within Berkeley and Charleston counties in southeastern South Carolina. The Forest, approximately 258,942 acres in size, comprises about one percent of the public lands in the State. The area includes the 6,067-acre Santee Experimental Forest. Figure 1 displays the Forest's location in relation to key features such as the Atlantic Ocean and lands in other ownership or management.

Purpose and Need and Proposed Action

The proposed action is to revise the land management plan for the Francis Marion National Forest, as required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA). The NFMA regulations require forest plans to be revised on a 10-15 year cycle or sooner when significant changes in conditions or demands occur in the forest plan area. The current forest plan for the Francis Marion needs revision because it has been in effect since 1996, approximately 20 years.

The revised plan has been prepared in compliance with the Forest Service's 2012 Land Management Planning Rule at 36 CFR Part 219. The Rule calls for an assessment of relevant existing information of conditions on or affecting the Forest as the first step to revising a plan This review was completed and made available to the public in 2014. Using the information in the assessment, the Forest along the public developed six themes that served as the drivers for the need to change the 1996 forest plan.

The Nature of this Decision

The purpose of this revised land management plan is to guide future projects, practices, uses and protection measures to assure sustainable multiple-use management on national lands on the Francis Marion over the next 15 years. Revised plan components include desired conditions, goals, objectives and standards and guidelines at three overlapping scales; along with the suitability determination of national forest lands for timber production and for various other uses. The three different scales where plan components are to be applied include forest-wide plan components, two management areas (Management Areas 1 and 2), and four contiguous geographic areas that are called "resource integration zones" (see Revised Plan, Chapters 1 and 2).

The revised land management plan does not authorize projects or activities or commit the Forest Service to take action. Management direction will be implemented through site-specific activities that must be consistent with the revised plan (36 CFR 219.15).

Throughout the rationale section the term "we" refers to myself (the Forest Supervisor for the Francis Marion and Sumter NFs who is the responsible official for this decision), my staff, the planning team, the district ranger and her staff, the Southern Regional Office, colleagues and

researchers from the Southern Research Station, partners from other government agencies, and stakeholders who worked collaboratively on this revision effort.

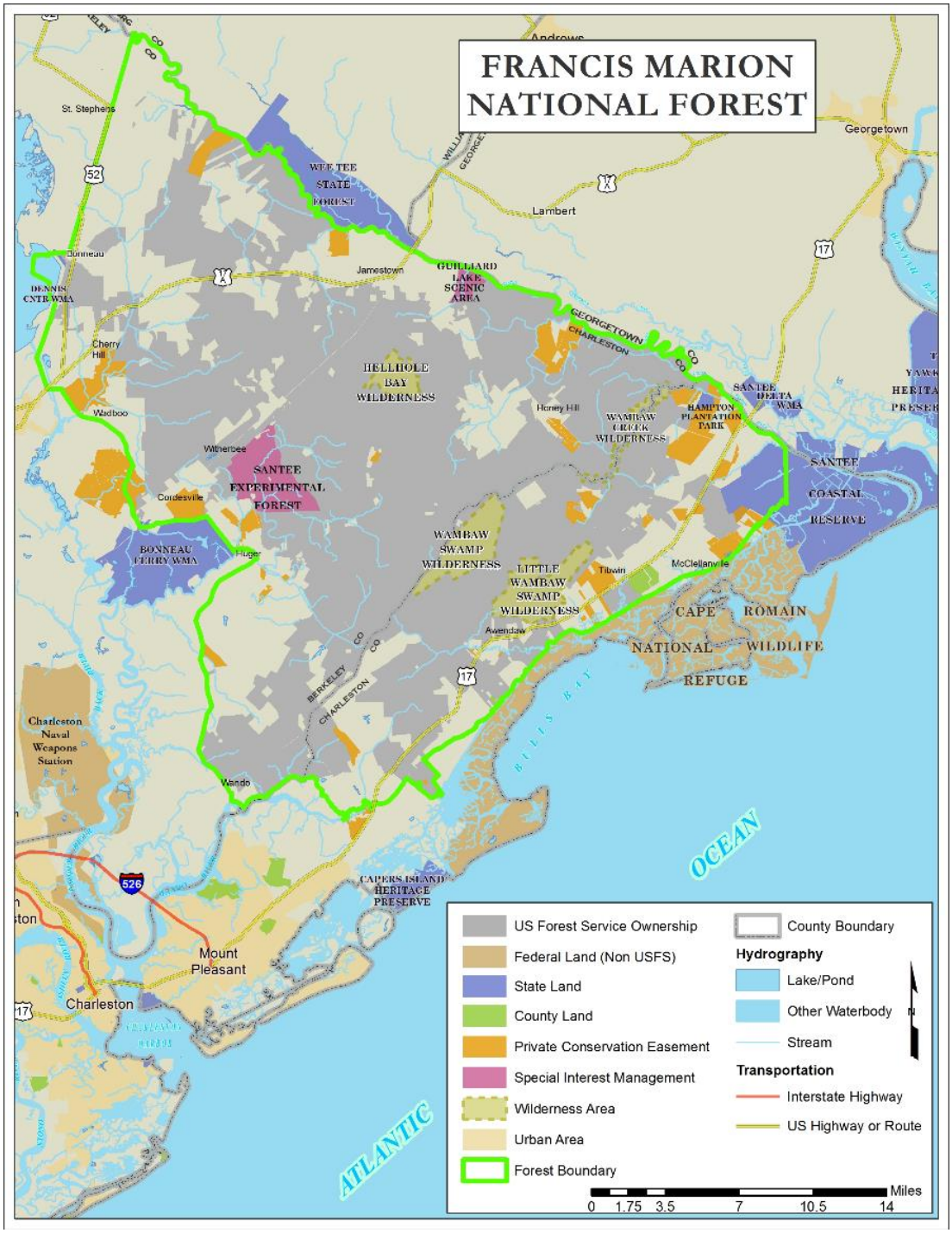

Figure 1. Francis Marion National Forest and surrounding area

Decision and Rationale for the Decision

Decision

I have reviewed the environmental analysis disclosed in the FEIS, the planning record, comments from the public, partners and other agencies and considered how the revised plan meets the identified need to change and the requirements of 36 CFR 219, the 2012 Planning Rule. Based on this review I have selected alternative 2 as displayed in the FEIS and the accompanying Francis Marion National Forest Revised Land Management Plan. By this decision, I approve the following:

- The forest-wide desired conditions, objectives, standards and guidelines that meet the social, economic, and ecological sustainability requirements of 36 CFR 219, the 2012 Planning Rule.
- The plan components, including goals, that apply to Management Areas 1 and 2, the four geographic resource integration zones, and the special and designated areas described in each resource integration zone.
- The identification of suitable and non-suitable uses of the Forest including approximately 65,600 acres of land not suitable for timber production.
- The identification of a projected wood sale quantity of 98.6 million cubic feet (MMCF) of timber that could be sold from the Francis Marion over the next 10 years, and the determination that the sustained yield limit for the Francis Marion National Forest is 113.8 MMCF per decade.
- Plan components for maintaining the wilderness character of the four existing wilderness areas on the Forest.
- The identification of five eligible wild and scenic rivers and plan components to protect their outstandingly remarkable values.
- Plan components that are consistent with the goals and objectives of the Forest Service National Strategic Plan (USDA Forest Service 2015).
- The identification of three watersheds that are a priority for restoration: Guerin Creek, the headwaters of Wambaw Creek and Turkey Creek-East Branch Cooper River; and, the establishment of riparian management zones.
- The monitoring program for the revised plan.
- The description of the distinctive role and contributions of the Francis Marion National Forest as providing the largest, natural, land area in the South Carolina lowcountry for ecological benefits, habitat for plants and animals, contributing to local economies, and place for people to visit and enjoy.

Rationale

I chose alternative 2 as the revised plan because it:

- Meets the purpose and need for the plan revision, which was based upon the plan assessment and a review of the 1996 forest plan.
- Meets the substantive requirements of the 2012 planning regulations (36 CFR Part 219).
- Has been developed based upon the best available scientific information.
- Is broadly supported by our partners, non-government organizations, and other government agencies.
- Has been developed through a collaborative effort with our publics, partners, adjacent landowners, and researchers, including the Southern Research Station of the Forest Service.

How the revised land management plan responds to the six "need to change" themes were key to my decision. I evaluated how the revised plan integrated the interests and concerns expressed by our public, how it met the requirements of the Rule, and considered the likely outcomes that should result from implementing the revised plan:

Theme 1: Maintain or restore the Francis Marion's unique landscapes and features.

There are nearly 260,000 acres of natural landscapes within the Francis Marion National Forest (NF) that are adjacent to the Atlantic Ocean and the major metropolitan area of Charleston, South Carolina. Many of the natural features on the Forest are unique in local and regional settings. These landscapes form important ecological and historical centerpieces for areas adjacent to the national forest. Restored longleaf pine ecosystems on the national forest not only provide habitat for animals, such as the endangered red-cockaded woodpecker but also provide outstanding scenery of open pine stands of trees with grasses and rare plants. Wetland drainage, stream and other hydrologic modifications have altered habitats and function and the restoration of aquatic ecosystems, watersheds, and riparian areas are important areas that need to be addressed in the revised plan (FEIS, Chapter 3, Sections 3.2, Physical Resources and 3.3, Biological Resources). Discussions with the public concerning this theme revolved around the requirements in the Rule including 36 CFR 219. 8 "Sustainability" and 36 CFR 219.9 "Diversity of plant and animal communities".

There are four sub-parts to this theme and the discussion that follows explains how the plan will address this theme and its sub-parts:

1a) The maintenance or restoration of terrestrial, aquatic, wetland and riparian ecosystems, taking into account the interconnectedness of these systems throughout the landscape.

The revised plan has the appropriate plan components for restoring and maintaining the ecological integrity of fire-adapted ecosystems in Management Area 1; the aquatic and forested wetland ecosystems, and the mesic oak systems in the uplands throughout the Francis Marion. Plan components include:

- Desired conditions that describe in detail the desired composition, structure, function, and connectivity of each of the nine ecological system groupings of both terrestrial and aquatic ecosystems.
- Objectives to restore fire-adapted ecosystems where current conditions are widely departed from those desired conditions including:
    - Maintain fire-adapted ecosystems by using prescribed fire on approximately 30,000 to 50,000 acres per year, of which growing season burns will be conducted on about 16,000 acres per year.
    - Within Management Area 1, restore over the next 10 years following plan approval approximately 26,000 acres of existing loblolly and longleaf pine forest to longleaf pine ecosystems, to achieve a total of 91,000 acres of longleaf pine ecosystems with desired composition, structure, function and connectivity.
    - Restore pond cypress savanna and Carolina bay ecosystems on approximately 6,400 acres and pocosin ecosystems on 7,200 acres over the next 10 years.
- Objectives to restore hydrologic function of streams and wetlands that have been altered from past land use practices including:
    - Improve soil and water conditions on 400 acres of wetlands and aquatic habitat on approximately 50 miles of streams, including 5 aquatic organism passage projects over the next 10 years.
    - An objective to restore or maintain watershed conditions within the three priority watersheds of Guerin Creek, Turkey Creek-East Branch Cooper River, and the headwaters of Wambaw Creek.

Discussions with our publics and partners on ecological integrity were focused on longleaf pine ecosystem restoration because these systems were the dominant and historic ecosystems that would have evolved naturally over time. These ecosystems are now limited in amount and distribution across the coastal plain. The Francis Marion is partnering with organizations such as America's Longleaf Initiative, the Sewee Longleaf Conservation Cooperative, the Nature Conservancy, the Center for Heirs Property Preservation and others to restore a core area of the terrestrial coastal plain forests to longleaf pine ecosystems. With these partners and adjacent landowners, the revised plan looks beyond the borders of the national forest by developing objectives to increase prescribed burning on adjacent lands using authorities in the Wyden Amendment (Public Law 109-54, Section 434) that would broaden the opportunities for restoring longleaf pine ecosystems (Revised Plan, Chapter 3, OBJ-COM-2).

NatureServe provided the best available scientific information about the ecosystems on the Francis Marion to develop the desired conditions to describe in detail the composition, structure, function, and connectivity of each of the nine ecological system groupings. The desired conditions take into account the dominant ecological drivers (frequent fire or flooding) and threats (sea level rise; pressure from rapid development). Ecosystems were mapped where they would have occurred historically. The descriptions and locations of ecosystems were broadly accepted during an ecological sustainability forum held in 2014 (FEIS, Appendix A).

To maintain fire-adapted ecosystems, we mapped the area (Management Area 1) where prescribed fire can be applied within smoke management guidelines and risks to public health and

safety. For these reasons, I believe that Management Area 1 bounds the maximum area where the desired understory conditions of fire-adapted ecosystems can be achieved using prescribed fire as the primary tool.

Equally important are the aquatic (rivers and streams) and forested wetland ecosystems on the Francis Marion. Riparian management zones along streams will provide riparian characteristics within fire-adapted ecosystems, and, forested wetlands provide riparian characteristics across throughout their broad floodplains and cypress swamps. Mapped ecosystems display the interconnectedness of terrestrial and aquatic systems. The desired conditions of ecotones describe the transition and interconnectedness between the upland and wetland systems (Revised Plan, Chapter 2).

The Santee Experimental Forest, Forest Wetland Research Center of the Southern Research Station is located within the boundaries of the Francis Marion. The center provides the best available scientific information to monitor changes on aquatic and forested wetland ecosystems such as water temperature, groundwater recharge, floodplain condition, and sediment.

The revised plan includes objectives to reach desired conditions for ecological integrity over the next 10 years within the fiscal and technical capability of the Francis Marion. Objectives for restoring and maintaining these ecosystems were developed by estimating the current departure from desired conditions using the best available information from the Fire Learning Network vegetation models (Revised Plan, Chapter 3).

Projects will be designed to meet the desired conditions and objectives in the revised plan. This will provide for ecological integrity. The revised plan includes standards and guidelines for vegetation management, the use of pesticides, soil and water, riparian management zones, ephemeral streams and ecological sustainability. These requirements will be used for project design and implementation and will provide assurances for attaining desired ecological conditions that can be sustained over time.

My decision responds to significant issue 1a (see FEIS, Chapter 1, Section 1.7, Issues) where some stakeholders disagreed that prescribed fire can only be applied in Management Area 1 and recommended using fire wherever we have identified and mapped fire adapted systems. However, others are concerned there would be health and safety impacts from increasing the use of prescribed fire. While alternative 1 would have the least acres subject to prescribed fire and would be the most responsive to public concerns about health and safety, it would not achieve the level of restoration needed to sustain fire-adapted ecosystems. Alternative 3 responds to the issue of potential adverse health effects from smoke by having a reduced prescribed fire program (when compared to the selected alternative). However this alternative would not be effective in maintaining restored fire-adapted ecosystems.

I find the revised plan will promote a prescribed fire program that can be applied safely for public health and will provide for the ecological integrity of fire-adapted ecosystems. The revised plan includes prescribed fire objectives that are within our fiscal and technical capability. Meeting the objectives would increase the use of prescribed fire up to 20,000 acres per year. This represents a 60 percent increase when compared to the current prescribed fire program. However, I acknowledge it is not technically feasible at this time to apply fire adjacent to heavily travelled traffic routes or near communities that are not in a “fire safe” condition. As conditions change and the technical capacity to increase prescribed fire increases, the revised plan will allow us to adapt: “If conditions change such that frequent, low intensity fire can be used (in Management Area 2),

then the desired conditions for the appropriate fire-adapted terrestrial ecosystem applies" (Revised Plan, Chapter 2, Section 2.1.2).

1b) Maintains or restores recreational settings and wilderness characteristics.

The wilderness character of four existing wilderness areas will be enhanced through an objective to restore two areas that are located adjacent to and connect to, several of the wildernesses (approximately 15,000 acres) to a semi-primitive, motorized setting (Revised Plan, Chapter 3, OBJ-REC-2).

The revised plan responds to significant issue 2d (see FEIS, Chapter 1, Section 1.7, Issues) where it is recognized that remote recreational opportunities are in short supply on the Francis Marion. Recommending additions to the existing wildernesses could have been one approach, as was proposed in alternative 3. However, alternative 3 would have restricted the use of several tools needed to increase the pace and scale of restoration for fire adapted systems and hydrologic function. Alternative 1, which did not recommend new wilderness areas, did not respond to this issue. I find the selected alternative (alternative 2) provides a reasonable compromise. It will restore remote characteristics in areas that will connect wildernesses and enhance wilderness character while still maintaining all options for ecosystem restoration.

1c) Provide for plant and animal diversity, including" at-risk" terrestrial and aquatic species.

The revised plan uses a tiered approach to conserve species diversity, which first involves an analysis of the ecosystems on the forest and the species whose habitats are dependent on those ecosystems. The plan components for restoring, enhancing or maintaining these ecosystems is often referred to as the "coarse filter" approach, which is then followed, where needed, by the "fine filter" species-specific approach (which includes the protection of rare communities). I find the revised plan has the appropriate plan components to restore and maintain the diversity of ecosystems because key characteristics (including stressors and threats) of each of the nine ecological system groupings were taken into account when the desired conditions, objectives, standards and guidelines were developed. Ecological conditions for specific plant species are provided through plan components that will protect rare plant communities throughout the Francis Marion. Plan components for specific "at risk" animals are provided for several individual species and species groups. "At risk" species include threatened and endangered species, proposed and candidate species and species of conservation concern.

For the nine threatened or endangered species on the Forest (FEIS, Appendices E and G), the revised plan includes components that are designed to contribute to their recovery. While restoration activities may affect individuals of a species, the long term outcomes of restoration will provide conditions to improve recovery of these species. The revised plan includes standards and guidelines that will reduce effects to individual species. For example, several standards address specific habitat needs for red cockaded woodpecker, such as requiring cavity tree protection during prescribed fire activities (Revised Plan, Chapter 4, Section 4.2.1.6).

The Southern Region Regional Forester identified 67 species of conservation concern (SCC) on the Francis Marion National Forest. SCCs are species that are known to occur in the plan area and for which there are substantial concerns for the persistence of the species. Several data sources, including NatureServe and the State Natural Heritage Program, provided the best available scientific information to identify these species. In 2014, experts on rare species met to review the list of species that were preliminarily identified as SCCs and their habitat needs (see

http://www.fs.usda.gov/detail/scnfs/landmanagement/planning/?cid=stelprd3797222). Once SCCs were identified, we organized the species according to their habitat needs to determine how the plan would provide ecological conditions for them. Most SCC habitat needs are met through the coarse filter approach, that is, by the desired conditions and objectives for each of the nine ecological system groupings. For some species or species groups with specific habitat needs, such as the swallow-tailed kite and Carolina gopher frog, the revised plan has specific desired conditions and objectives to meet their needs. I find revised plan components will provide ecological conditions to maintain viable populations for SCC and contribute to the recovery of threatened and endangered species.

1d) Prioritize watersheds for restoration.

Watershed restoration efforts will be focused in three subwatersheds (Revised Plan, Chapter 3, OBJ-WAT-1) so that ecological and hydrologic processes are functioning properly. Turkey Creek and the headwaters of Wambaw Creek were selected because these subwatersheds have high proportions of national forest land, lower amounts of private lands, and yield the highest potential for achieving properly functioning watershed conditions over the next 10 years. Guerin Creek was chosen because of the high concentrations of “at risk” species present in the subwatershed that are threatened by loss of habitat due to the adjacent new commercial and residential development. It is our intent to develop strategies with adjacent community developers to improve opportunities and conditions to conserve these “at risk” species.

Air, soil, water and riparian areas are important watershed characteristics as specified in the Rule (219.8 (a)(2) and 219.8(a)(3). We will meet or exceed the national and State of South Carolina’s best management practices for water quality by following the revised plan’s standards and guidelines for soil, water and aquatics (Revised Plan, Chapter 4).

Standards and guidelines for riparian management zones and ephemeral streams will provide for adequate riparian ecological conditions, especially where streams are nested within fire-adapted ecosystems. Because fire-adapted ecosystems, such as longleaf pine, require frequent, low intensity prescribed fire, there are concerns that applying fire too close to streams would alter the riparian characteristics of the stream and adjacent vegetation. These standards will maintain riparian characteristics while restoring the longleaf pine ecosystems and a periodic check on the status of all watersheds will be monitored as specified in the monitoring program (Revised Plan, Chapter 5, Table 5-1).

My decision responds to significant issue 1c (see FEIS, Chapter 1, Section 1.7, Issues) where some stakeholders want to increase stream and watershed restoration program. Others are concerned that hydrologic restoration activities would cause more harm than benefit. Alternative 1 does not provide objectives for watershed or hydrologic restoration, but this alternative does have standards for riparian area protection. Alternative 2 and 3 have the same level of watershed and hydrologic restoration. In both action alternatives short term adverse effects could occur from activities that restore streams and wetlands, e.g., soil moving off-site (sedimentation). However, short term effects can be reduced with project-level mitigating measures. Restoration activities will provide the long term benefits that capture, store and release water, sediment, coarse wood and nutrients. Restoration will benefit hydrologic function and habitats that support diverse populations of native aquatic and riparian-dependent species. Therefore, I believe the selected alternative (alternative 2) provides the plan components (objectives) needed to implement a reasonable watershed restoration program.

Theme 2: Improve the quality of life and health for the public.

The public said that interacting with the forest environment improves their quality of life, health and well-being. They cited important aspects of improving their livelihoods that include getting away from congestion and reducing stress, enjoying the benefits of silence, becoming healthier through exercising, learning about the natural environment and sustaining income and other basic needs for living. The revised plan will improve the quality of life and public health in the following ways:

2a) Providing benefits from healthy ecosystems.

Since the revised plan focuses on ecosystem health and resilience, the ecosystem services they provide will be enhanced. These services include provisioning, regulating, supporting, and cultural services that provide benefits to people and local communities (Revised Plan, Section 2.3, Resource Integration and Appendix H).

Four resource integration zones (which are geographic areas) provide a unique blend of ecosystem services and benefits (Revised Plan, Chapter 2, Section 2.3 and Appendix H). Forests provide a full suite of goods and services that are vital to human health and livelihood, natural assets we call ecosystem services. For example, beneficiaries of the coastal zone include residential property owners, timber harvesters, recreational experiencers and viewers, to name a few. People benefit from the presence of the environment, the open spaces, viewscapes, flora, fauna, natural materials and the sounds and scents that are a part of the coastal zone.

The Wando Zone is considered a sea of green that provides quiet rejuvenation, away from private lands adjacent to the Forest, which are zoned primarily for rapid commercial and residential development. Within the Wando Zone is the Cainhoy peninsula, whose residents are primarily African Americans. These residents identify themselves as “Gullah” and continue to carry on the language, arts, crafts, religious beliefs, folklore, rituals and food preferences of their African and African American ancestors. Many people living within the Wando Zone maintain strong ties to the land and rely on subsistence farming, fishing, hunting, bartering and small-scale marketing of subsistence and artisan products for a portion of their income.

The Wambaw Zone has numerous streams and extensive wetlands that also serve as a trail system which supports high quality recreational experiences. Many forest visitors are attracted to this part of the forest because it supports outstanding opportunities for solitude and primitive recreation, including canoeing, kayaking, hunting and wildlife and nature viewing. In addition to serving as a floodplain that reduces the risk and severity of flooding to downstream communities, these wetlands improve water quality by filtering and flushing nutrients, processing organic wastes and reducing sediment before waters reach the Coastal Zone. Improved water quality also contributes to the sustainability of the local fishery and seafood industry, and to local residents’ ability to be subsistent.

As in the other zones, communities within the Santee Zone are small and rural. Private land ownership within the zone is characterized as a mixture of small towns and heir’s property villages which have preserved Gullah-Geechee culture. The revised plan promotes opportunities for hunting, fishing, scenic driving and paddling – all which contribute to the high quality of life helps attract and retain local residents.

2b) Providing for multiple uses.

In the revised plan, each of the four geographic resource integration zones has unique characteristics and provides a different variety of multiple uses (Revised Plan, Chapter 2, Section 2.3, Resource Integration). Goals for each resource integration zone provide context for key multiple uses and potential strategies to achieve them. Goals, desired conditions, and objectives include (but are not limited to) the following:

- Providing sustainable outdoor recreation opportunities that connect people to nature primarily through a network of trails and other dispersed recreation features that can connect with similar features on adjacent lands (Revised Plan, Chapter 2, Section 2.2.1, Sustainable Recreation).
- Providing a sustainable supply of timber products of approximately 98.6 million cubic feet (MMCF) that support the local economy while maintaining forested conditions that store carbon and offset the impacts of greenhouse gases (Revised Plan, Chapter 2).
- Providing clean drinking water and air that supports fish and wildlife habitats as well as human health (Revised Plan, Section 2.2, Social and Economic Sustainability).
- Buffering climate change, sea-level rise, and storm-water runoff impacts by slowing water run-off and improving groundwater recharge.
- Nominating four historic districts, and protecting cultural and historic resources (Revised Chapter 3, Cultural Resources Objectives).
- Enhancing the wilderness characteristics of the four congressionally designated wilderness areas (Revised Plan, Chapter 2, Section 2.3, Resource Integration).
- Protecting the outstandingly remarkable values of the five eligible wild and scenic rivers (Revised Plan, Chapter 2, Section 2.3 Resource Integration and Chapter 4, Section 4.2.1.9 Standards for Eligible Wild and Scenic Rivers).
- Maintaining wildlife management areas, in coordination with the South Carolina Department of Natural Resources, for wildlife and plant habitat conditions commonly enjoyed and used by the public (Revised Plan, Section 2.2.1 and 2.3,Sustainable Recreation and Resource Integration Desired Conditions).
- Updating a transportation analysis plan within 3 years of plan approval to assure the appropriate placement of infrastructure that reflects the revised plan management direction (Revised Plan, Chapter 3, OBJ_MUB-6 Comprehensive Road Planning and Maintenance).
- Updating a land ownership adjustment plan (Revised Plan, Chapter 3, OBJ-COM-4 Consider the Broader Landscape).
- Providing outstanding scenery by using a scenery management system with acres in the “high” scenery integrity objective category (Revised Plan, Chapter 2, Section 2.3, Resource Integration).
- Identifying special or designated areas (other than those listed above) that include over 4,000 acres of botanical rare communities, critical habitat for the endangered frosted

flatwoods salamander, a national recreation trail, a scenic area, an experimental forest and a research natural area (Revised Plan, Chapter 2, Section 2.3, Resource Integration).

- Maintaining and restoring ecological system groupings by providing conditions to allow dominate ecological processes to shape ecosystem health and resilience (Revised Plan, Chapter 2, Section 2.1, Ecological Sustainability).

My decision responds to significant issue 1b (see FEIS, Chapter 1, Section 1.7, Issues) where some of our publics are concerned that habitat for species commonly hunted, such as wild turkey, would be adversely affected by the amount of growing season prescribed fire in alternative 2. Alternative 1 has about 70 percent less growing season burning than alternative 2, whereas alternative 3 has about 20 percent less than the revised plan. With reduced growing season burns, both alternative 1 and alternative 3 are not likely to maintain any restored fire-adapted ecosystems from encroaching woody, shrubby vegetation. The selected alternative (alternative 2), the revised plan, has objectives for growing season burning at the appropriate level to maintain low intensity prescribed fire, with a frequency of 1 to 3 years that provide a high likelihood of maintaining the restored fire-adapted ecosystems.

2c) Providing for sustainable recreation.

I find the goals, desired conditions and objectives in the revised plan appropriately focus on maintaining and improving dispersed recreation opportunities and existing developed recreation sites. The revised plan provides the potential to add new trails through partnerships that connect the Forest to local communities. Due to the new, rapid commercial and residential developments on adjacent lands, the Francis Marion receives more visitors, users and requests for trail connections to the Forest from neighboring communities. New developed recreation facilities will rarely occur because the Francis Marion's distinctive role is to provide dispersed recreation opportunities, including mountain and road biking, horseback riding, off-highway vehicle riding, flat-water boating, nature study, driving for pleasure and primitive camping, as well as wildlife recreation such as wildlife viewing, hunting, and fishing.

During stakeholder dialogues, a common topic was the conflict of trail uses among hikers, mountain bikers, and hunters. The revised plan acknowledges potential user conflicts and responds with management strategies to avoid some conflicts through notices of hunting seasons and potential trial uses during particular seasons of the year.

2d) Connecting youth, minority and low-income populations with nature.

Throughout the revision process we reached out to minority, low-income populations by partnering with the Center for Heirs Properties Preservation. The Center promotes sustainable land use for increased economic benefit to historically under-served families. Because many of these under-served families are adjacent landowners, the revised plan includes opportunities to develop joint strategies for sustainable land use, including the restoration of longleaf pine ecosystems.

2e) Providing a sense of place.

In the revised plan, each geographic resource integration zone is an area with unique characteristics that define a sense of place. The revised plan provides special places within the zones where the public can avoid the congestion associated with the high population centers of Charleston and Mount Pleasant. In the revised plan the goals for each zone, setting, designated

areas and special areas provides management direction for the use of the national forest to connect people with nature and improve physical and spiritual well-being.

Theme 3: Respond to challenges.

Stakeholders are keenly interested in how the forest plan will address the major challenges of today. Challenges include maintaining fire-adapted natural systems in areas adjacent to development; addressing the invasion of non-native species (such as the degradation of ecosystems caused by feral hogs) and addressing management challenges (such as reducing conflicts among recreation users) especially during a time of budget reductions. Additionally, responding to major disturbances such as sea level rise, hurricanes and storm evacuations, floods, and severe wildfire is important for the stability of local communities. The revised plan includes plan components and management strategies that will allow the Forest to respond to the following challenges:

3a) Maintaining fire-adapted natural systems in the face of severe prescribed fire restrictions in areas adjacent to development.

Revised plan objectives strive to achieve the desired ecological conditions for fire-adapted ecosystems that provides for ecological integrity over the next 10 years. This requires an aggressive prescribed fire program because frequent fire is necessary to maintain low-intensity burning for plants and trees. The objectives for prescribed fire in the revised plan uses a two-tiered approach: 1) a base level of 30,000 acres per year that is within the fiscal and technical capability of the Francis Marion, and 2) adding 20,000 acres per year when opportunities arise for additional funding, partnerships, or efficiencies. Of these prescribed fire objectives, about 16,000 acres will be growing season burns that are more effective in eliminating competing woody species, such as loblolly pine and sweetgum.

Frequent, low intensity prescribed fire will be applied in Management Area 1. The revised plan also provides a trigger that if the technical capability of applying prescribed fire in Management Area 2 becomes available, the desired conditions of Management Area 1 would apply to those lands. Finally, we developed objectives to increase prescribed fire across the broader landscape by using Wyden Amendments to assist adjacent landowners with prescribed fire.

This decision addresses significant issue 2c (see FEIS, Chapter 1, Section 1.7, Issues). Some people are concerned about the loss of habitat for threatened and endangered species and species of conservation concern due to the influences of rapid commercial and residential development adjacent to the Francis Marion; while others are concerned that access to the forest could be constrained. This issue is specific to the Wando Resource Integration Zone, which includes critical habitat for the frosted flatwoods salamander and similar habitat for Carolina gopher frog, a species of conservation concern. Alternative 1 does not place an emphasis on the habitat needs for those species in the Wando Zone of the Forest. Alternative 3 has a reduced prescribed fire program that would not be as effective as the selected alternative (alternative 2) in restoring and maintaining habitat for those species. The revised plan also has management strategies to provide information about the sensitivity of animals and their habitats available to visitors and trail users in the Wando Zone. I believe that the selected alternative (alternative 2) will contribute to the recovery of “at risk” species while maintaining access for the local communities.

3b) Responding to a changing climate.

The selected alternative reduces vulnerability to climate change by providing for the restoration of longleaf pine ecosystems, which are more resilient to extreme weather events, such as wind throw from hurricanes, than the loblolly pines that currently occupy many sites on the Francis Marion. Rising sea levels will be monitored using a broad scale monitoring strategy developed by the Forest Service Southern Region. Information on sea level rise will be useful for, not only the Francis Marion, but also the adjacent Cape Romaine National Wildlife Refuge and Charleston County government lands—all of which will be impacted by sea level rise in the near future. Scientists from the Southern Research Station are collaborating with other agencies such as, NOAA and USDI Fish and Wildlife Service, as well as research universities and others to track sea level rise and provide the best scientific information to adapt to loss of land from rising seas.

3c) Reducing non-native invasive species.

The desired condition for ecosystems on the Francis Marion is for less than one percent of the landscape to be affected by non-native invasive species. Invasive species can cause native ecosystems to change composition and structure such that the integrity of the ecosystem can be lost. Stakeholders generally agree with these desired conditions, but hesitate about their practicality, given the widespread abundance of some invasive species such as feral hogs. We acknowledge that the best option in the near future is to coordinate with adjacent landowners, other agencies, stakeholders and organizations (such as the U.S. Department of Agriculture Animal and Plant Health Inspection Service, the South Carolina Cogongrass and Wild Hog Task Forces, the South Carolina Department of Natural Resources Aquatic Nuisance Species Program, the South Carolina Exotic Pest Plant Council and others) to develop a coordinated strategy across multiple ownerships to control and eradicate non-native invasive species.

3d & e) Controlling effects of insects and disease; as well as responding to natural disturbances, such as hurricanes.

I find that the ecosystem restoration objectives in the revised plan, along with the plan components to reduce risks of wildfire, provide measures to prevent outbreaks of forest pests. The desired conditions and objectives for ecosystems in the revised plan focus on the resiliency of these systems. This should provide the capacity for the ecosystems to absorb and recover from forest pests and natural perturbations.

3f) Increasing pressures for recreation opportunities in challenging economic times.

The revised plan identifies management strategies to engage government entities, adjacent property owners, and other interested stakeholders to plan collaboratively for additional trail connections, waterway trails, and other potential ways to connect people with nature. Given the assumption that recreation budgets are not likely to increase, stakeholders appear willing to invest time and money in planning and helping to provide additional dispersed recreational opportunities on the Francis Marion. For example, new trailheads on the Francis Marion could provide portals for connecting trails from natural areas from adjacent lands, such as parks in Awendaw, open spaces in adjacent developments near Wando and greenways in Charleston County (Revised Plan, Chapter 2, Section 2.3.2, Wando Resource Integration Zone).

Theme 4: Share operational and planning resources among partners; keep ongoing collaborative efforts vibrant and develop new ones.

Sharing resources with partners and integrating into other planning efforts were important to stakeholders. Especially during this time of expanding communication technology, stakeholders are interested in having a forest plan that considers stakeholder contributions that can "make a bigger pie" and make possible the idea of "doing more with less." Collaborative approaches are developed in the revised plan for:

4a) Restoring ecosystems at the landscape scale.

We have a vision that lands in the broader landscape will be restored throughout a combination of the Francis Marion, adjacent private and other government landholdings to form a larger, intact ecosystem (Revised Plan, Chapter 2, Section 2.2.3 Connecting with Communities and Partners). We recognize that the Francis Marion plays a key role in providing a core area of intact ecosystems across the lowcountry landscape. To broaden landscape restoration, the revised plan has management strategies to work with partners, such as the Sewee Longleaf Conservation Cooperative, who network with private citizens, non-profit organizations and city, county, state, and federal agencies to work together to restore longleaf pine in Berkeley and Charleston counties near the Francis Marion. Another partner, the Center for Heirs Properties Preservation, provides technical guidance to minorities that are adjacent landowners about forest management, including how to restore longleaf pine.

The revised plan complements many state-wide goals and objectives identified in South Carolina's Wildlife Action Plan including: restoring longleaf pine within its historical range; suppress and eradicate non-native and invasive plants and pests; restore fire-adapted lands and reduce risk of wildfire impacts; protect and enhance water quality; protect, conserve and enhance fish and wildlife resources; and manage forests to mitigate and adapt to global climate change.

4b) Identifying the distinctive roles and contributions on the Francis Marion National Forest in the broader landscape.

The revised plan describes the distinctive roles and contributions (Revised Plan, Chapter 1, Section 1.6) of the Francis Marion National Forest as providing environmental, social, and economic benefits. The Francis Marion provides the environmental benefit of being a core area of habitat for plants and animals; a refuge for rare species (such as the red-cockaded woodpecker) and having diverse fire-adapted and wetland ecosystems.

The Francis Marion provides the social benefit of public access to the rivers and the Intracoastal Waterway; opportunities for remoteness and solitude next to an urban environment; viewing diverse vegetation, wildlife and cultural resources; hunting on publicly-owned lands; hiking, bicycling, motorized and paddling water trails; and cultivating forest stewardship through environmental education. The Francis Marion provides a natural environment for adjacent rural crossroads communities; providing opportunities to preserve their unique traditions, culture and connections with the natural environment.

I find the Francis Marion will also contribute to the economy by providing opportunities for relatively stable flow of timber products that results from restoring longleaf pine throughout the landscape.

4c & 4d) Reducing wildfire risks and assisting with Community Wildfire Protection Planning, through coordination with state and local governments and non-governmental organizations.

Coordination on managing wildfire risk complements the South Carolina Forestry Commission's forest resource assessment. An objective in the revised plan is to help facilitate the implementation and development of county-wide community wildfire protection plans. These are community-based plans developed collaboratively to integrate wildland fire planning for local communities by: 1) sharing responsibility, and 2) creating fire-adapted human communities and mitigating threats of wildfire in future home developments.

Other wildfire related objectives include reducing hazardous fuels and fire risks by giving priority to locations that are closest to local communities in Management Area 2, where prescribed fire is difficult to apply. Stakeholders, especially county officials, are concerned about the threat of wildfire from the Francis Marion, considering recent catastrophic wildfires in the Conway and Myrtle Beach area that had destroyed forests, homes and businesses (Chapter 3, Section 3.2.3, Connecting with Communities).

This decision addresses significant issues 2a and 2b (see FEIS, Chapter 1, Section 1.7, Issues) where many people are concerned about the impacts to human health and safety from intense wildfires, especially where prescribed fire cannot be safely applied. There is also a concern that smoke from prescribed fire could affect human health as well as residences and commercial buildings. Alternative 1 does reduce hazardous fuels; however it does not address smoke management and does not address the coordination of community wildfire planning. It does reduce risks to human health and adjacent homes but does not provide for ecological integrity of fire-adapted ecosystems. Alternative 3 reduces the risks of wildfire by using more mechanical methods than prescribed fire in the wildland urban interface. These are much costlier practices and do not provide the desired ecosystem conditions of frequent prescribed fire. I find the selected alternative (alternative 2) emphasizes community-based planning to prepare fire-adapted human communities to reduce wildfire risks. The revised plan prioritizes locations for reducing hazardous fuels and wildfire risks that are near or adjacent to local communities. It also call for a prescribed fire program where it can be applied safely while substantially reducing risks to human health and infrastructure.

Theme 5: Develop a monitoring strategy that provides information for rapid responses to changing conditions.

The framework for the Rule includes a response system for dealing with risks and uncertainties. A broad-scale monitoring strategy and forest level monitoring program is needed to respond to changing conditions. The Forest's stakeholders are interested in how a broad scale monitoring strategy can provide information for local level adjustments on the Francis Marion. Moreover, stakeholders would like to know how other government agencies' and non-governmental entities' monitoring can be used to support a robust adaptive management system. The revised plan addresses this by having a forest monitoring program with connections to a Southern Region Broad Scale Monitoring Strategy (Revised Plan, Chapter 5 and Appendix F):

5a) Coordinates climate change monitoring with other entities.

Since the Francis Marion is the only unit in the national forest system most directly affected by rising Atlantic Ocean waters, the Forest Service will monitor sea level rise through the Southern

Region's Broad-Scale Monitoring Strategy. This strategy will include monitoring the rising water levels and loss of dry land, saltwater intrusion, temperature and precipitation changes, and stream water temperatures. The Forest Service Southern Region and the Forest Service Southern Research Station will collaborate with scientists from government and non-government entities to provide information of changing conditions and potential strategies to adapt to changes for the Francis Marion, as well as the southern coastal region.

5b & 5c) Monitors physical resources, national best management practices, and monitoring requirements of Rule.

A monitoring program in the revised plan provides questions and indicators that address the eight monitoring requirements in the Rule (219.12(a)(5)). The requirements cover a wide range of topics, including ecosystems and watersheds, key characteristics of ecosystems, focal species, sustainable recreation, and climate change. To assure these requirements are met, the revised plan organizes the monitoring questions and indicators by the eight requirements of the Rule (Revised Plan, Chapter 5). The monitoring table included in this section shows linkages with the Southern Region's Broad Scale Monitoring Strategy, focusing on climate change and social and economic indicators. Also shown, are the alerts for forest managers to become aware that changes in conditions may need a manager's attention to develop and implement an adaptive strategy to address changing conditions.

Theme 6: Integrate and coordinate resource management.

Stakeholders and national forest managers want an integrated approach to managing the various natural resources and multiple uses of the national forest. The basic premise for this theme is how the desired conditions for landscapes and compatible multiple uses are packaged in discrete management or geographic areas that would derive the most benefit for the American public while protecting sensitive areas. The revised plan addresses resource integration by:

6a) Applying plan components to a forestwide scale, two management areas, ecosystems, and four contiguous geographic resource integration zones.

The revised plan takes a different approach from the 1996 forest plan, which contained more than a dozen discontinuous management areas that had different management emphases. In contrast, the revised plan has two management areas and nine ecosystems that focus on the biological environment and four contiguous geographic resource integration zones. This approach incorporates social, economic and ecological considerations for an integrated approach to manage multiple uses and ecosystem services.

6b) Determining the suitable uses of land on the Francis Marion.

Table B-1 (Revised Plan, Appendix B) displays lands that are non-forested, administratively withdrawn, and lands with objectives not compatible with timber production. This analysis follows the specific requirements for determining lands not suited for timber production in the Rule (219.11(a)). About 25 percent of the land base on the Francis Marion (65,602 acres) is identified as not suited for timber production. For the remaining 75 percent of the lands (194,023 acres), while timber production is not the primary objective for managing these lands, providing timber products is compatible with the desired conditions and objectives for these lands, and consequently they are classified as suited for timber production. (Revised Plan, Appendix B,

Timber Analysis). Suitability determinations for mineral operations, outdoor recreation and special uses are documented in chapter 4 of the revised plan.

6c) Providing a framework for individual resource program planning.

This revised plan provides an integrated resources approach to guide the developing or updating of program specific plans. Examples of program specific plans are: wilderness management plans, land ownership adjustment plans and transportation analysis planning. These program-specific plans will adhere to the requirements outlined in this revised plan.

6d) Identifying Designated Areas on the Francis Marion.

Special or designated areas are identified in each of the four geographic resource integration zones. Special or designated areas in the revised plan include: Wilderness, Inventoried Roadless Areas (IRA); Historic Districts, Eligible Wild and Scenic Rivers, Seed Orchard, Helibase, Research Natural Areas, Santee Experimental Forest, National Recreation Trails, Botanical Areas and a Scenic Area.

In conclusion, for all the reasons described above, I believe that alternative 2 is the alternative that best responds to the six “need to change” themes, as well as the significant issues that have been raised. Alternative 2 meets the substantive requirements of the Rule, uses the best available scientific information, is broadly supported by stakeholders and other government agencies and has been developed through a collaborative approach.

Meeting Substantive Requirements of the Rule

The revised plan meets the specific Rule requirements in 219.8-219.11 as follows.

219.8 Sustainability

The revised plan provides for ecological sustainability by:

- Providing for ecological integrity by having the desired conditions, objectives, standards and guidelines to restore and maintain the ecological integrity of: 1) fire-adapted ecosystems in Management Area 1, 2) the aquatic and forested wetland ecosystems throughout the Francis Marion, and 3) mesic oak ecosystems in the uplands (Revised Plan, Chapter 2, Section 2.1 and 2.1.1, Ecological Sustainability, Ecosystem Maintenance and Restoration).

- Providing detailed desired conditions for the composition, structure, function and connectivity of each ecological system groupings that have been identified and mapped, and, descriptions of system drivers, ecological processes and stressors and threats (Revised Plan, Chapter 2, Section 2.1 and 2.1.1, Ecological Sustainability, Ecosystem Maintenance and Restoration).

- Providing a “core area” within the larger “all lands” landscape for ecosystem restoration, specifically the longleaf pine ecosystem, and a refuge for “at risk” species (Revised Plan, Chapter 2, Section 2.1, 2.1.1 and 2.1.3, Ecological Sustainability, Ecosystem Maintenance and Restoration, Species Diversity).

- Including plan components that allow management to adjust to influences outside the borders of the Francis Marion, including rapid urban development and sea level rise

(Revised Plan, Chapter 2, Section 2.1 and 2.1.5, Ecological Sustainability, Stressors and Threats).

- Providing desired conditions and objectives for ecological systems drivers, particularly prescribed fire, to restore fire adapted ecosystems; and to respond to threats from climate change, such as sea level rise, more intense hurricanes and threats from non-native invasive species (Revised Plan, Chapter 2, Section 2.1 and 2.1.5, Ecological Sustainability, Stressors and Threats);
- Providing direction for landscape scale restoration by using Wyden Amendment agreements to broaden the use of prescribed fire and cooperating on developing community wildfire protection plans (Revised Plan, Chapter 3, Section 3.2 and 3.2.3, Social and Economic Sustainability, Connecting with Communities).
- Having standards and guidelines to protect the quality of air, soil, water (Revised Plan, Chapter 4).
- Having standards and guidelines for riparian management zones that are crucial especially where streams are nested within fire-adapted ecosystems (Revised Plan, Chapter 4).
- Desired conditions for forested wetland ecosystems that maintain or restore streams and floodplains (Revised Plan, Chapter 2, Section 2.1 and 2.1.1, Ecological Sustainability, Ecosystem Maintenance and Restoration).
- Having standards and guidelines to follow national and State of South Carolina Best Management Practices (Revised Plan, Chapter 4).

The revised plan contributes to social sustainability by:

- Providing goals and desired conditions for each of the four geographic resource integration zones which describe the multiple uses of the Francis Marion, the recreational settings including access, recreational opportunities and scenery (Revised Plan, Chapter 2, Section 2.3, Resource Integration).
- Providing desired conditions, goals and objectives to enhance or maintain ecosystem services provided by the Francis Marion and the beneficiaries of those services (Revised Plan, Appendix H).
- Establishing objectives for nominating four historic districts along with standards and guidelines for the protection of cultural and historic resources (Revised Plan, Chapters 3 and 4).

219.9 Diversity of Plant and Animal communities

By meeting the requirements for providing ecological integrity per 219.8 (above), the revised plan meets the coarse filter requirements for diversity of plants and animals in 219.9(a). The revised plan also:

- Identifies key characteristics of ecosystems, such as old growth, and other key features of ecosystem composition, structure, ecological processes, connectivity, as well as, stressors

and threats (Revised Plan, Chapter 2, Section 2.1 and 2.1.1, Ecological Sustainability, Ecosystem Maintenance and Restoration).

- Identifies “at risk” species: nine threatened or endangered species and 67 species of conservation concern (Revised Plan, Chapter 2, Section 2.1 and 2.1.3, Ecological Sustainability, Species Diversity and Appendix D).
- Where appropriate, combines the “at risk” species with species groups and links the species groups with the key characteristics of the nine ecological system groups (Revised Plan, Chapter 2, Section 2.1 and 2.1.3, Ecological Sustainability, Species Diversity and Appendix D).
- Provides plan components for specific species whose needs may not be met by ecosystem level plan components, such as: standards for red-cockaded woodpecker, desired conditions and objectives for the frosted flatwoods salamander, gopher frog and swallow-tailed kite (Revised Plan, Chapter 2, Section 2.1 and 2.1.3, Ecological Sustainability, Species Diversity, and Appendix D).

219.10 Multiple Uses

The revised plan provides for integrated resource management for multiple uses (219.10(a)) by designing a landscape consisting of four contiguous, geographic areas having unique characteristics to serve as a placed-based approach to providing multiple uses.

Plan components for the multiple uses appropriate for the Francis Marion are described in each of the four geographic resource integration zones and includes:

- Desired conditions to provide for the multiple uses and ecosystem services available in each zone.
- Objectives to update the Transportation Analysis Plan within 3 years of plan approval (Revised Plan, Chapter 3, Section 3.2 and 3.2.2, Social and Economic Sustainability, Multiple Use Benefits).
- Management strategies to link trails in the Wando Zone with adjacent suburbs for connecting people with nature; and, connecting with the East Coast Greenway in the Coastal Zone (Revised Plan, Chapter 2, Section 2.3, Resource Integration).
- Recognition of the wildlife management areas which are cooperatively managed with South Carolina Department of Natural Resources, to enhance habitat for hunting and wildlife viewing (Revised Plan, Chapter 2, Section 2.3, Resource Integration).
- Desired conditions, goals and management strategies that maintain the rural character of the area, meet the needs of the crossroad communities, and provide opportunities to honor the traditions of local communities, including providing subsistence opportunities for those traditionally dependent on the land.
- An estimated projected wood sale quantity of 98.6 MMCF for the first decade.
- Desired conditions for scenery management and scenic integrity objectives for each of the resource integration zones.

- Objectives and management strategies for land ownership adjustments (Revised Plan, Chapter 3, Section 3.2 and 3.2.3. Social and Economic Sustainability, Connecting with Communities).
- Risks and adaptive management strategies to save special sites, such as the Sewee Shell Mound from rising sea levels (Revised Plan, Chapter 3, Section 3.2 and 3.3.3, Social and Economic Sustainability, Resource Integration Zones).
- Objectives to provide clean water and monitor water withdrawals (Revised Plan, Chapter 2, Section 2.2 and 2.2.2, Social and Economic Sustainability, Multiple-use Benefits).
- Plan components to enhance the wilderness character of four existing wildernesses, including restoration of semi-primitive settings in two areas adjacent to and connecting with the wildernesses (Revised Plan, Chapter 2, Section 2.3 and 2.3.3, Resource Integration, Wambaw Resource Integration Zone).
- Standards or guidelines to protect the outstandingly remarkable values of five eligible wild and scenic rivers (Revised Plan, Chapter 4).
- The inclusion of other designated areas in each zone including research natural areas, botanical and scenic areas, critical habitat for endangered species and historic areas (Revised Plan, Chapter 2, Section 2.3, Resource Integration).

219.11 Timber Requirements based on the NFMA

The revised plan meets the timber requirements in the Rule by:

- Identifying lands not suited for timber production (Revised Plan, Appendix B, Timber Analysis).
- Specifying that timber production is not the primary objective in the revised plan, but complements the desired conditions and objectives for ecosystem maintenance and restoration (Revised Plan, Appendix B, Timber Analysis).
- Including standards and guidelines for limitations on timber harvest, including where timber harvest can occur and identifying the maximum size openings for even aged management (Revised Plan, Chapter 4).
- Identifying that the quantity of timber that may be sold from the national forest is limited to the Sustained Yield Limit of 113.8 MMCF per decade (Revised Plan, Appendix B, Timber Analysis).
- Providing a requirement in the plan that the regeneration of even-aged stands is limited to stands that have reached the culmination of mean annual increment of growth (Revised Plan, Chapter 4).

Alternative Development

The final EIS (FEIS), Chapter 2, “Alternatives” section has detailed information on how the action alternatives were developed. In summary, to address the significant issues that were raised, the following factors were considered in the development of alternatives 2 and 3:

- The results of the America's Longleaf Restoration Initiative's range-wide assessment, the 2010 assessment of historic longleaf pine forest on the Francis Marion, the potential ecological systems identified in the Francis Marion assessment, and the development of the Sewee Longleaf Conservation Cooperation.
- The needs of at risk species and recommendations in the South Carolina Wildlife Action Plan.
- The Forest's technical and fiscal capability to maintain fire on the landscape along with the implementation of Awendaw Fire District's Community Wildfire Protection Plan and the development of the Community Wildfire Protection Plan for Berkeley County.
- The extensive landscape modification that has occurred and how that affects the Forest's ability to work toward ecological integrity and diversity.

The restoration of fire-maintained ecosystems and hydrologic function of wetlands is the foundation of alternative 2. Alternative 3 was developed to address public concerns related to prescribed burning in smoke-sensitive areas where human health can be impacted. Alternative 3 also responds to public comment by including a recommendation to expand the four existing wilderness areas and to recommend the inventoried area called "Area B" for wilderness, in order to enhance the overall wilderness experience on the Forest.

Changes from DEIS to FEIS

Comments on the DEIS, new information and/or additional analysis resulted in some updates to the FEIS and the revised land management plan. Excluding minor editorial and organization changes, clarifications and typographical errors, modifications are summarized here:

Forest plan direction was added for land ownership adjustments. Goals, objectives, standards, guidelines and/or objectives regarding human health and safety, ecological sustainability, at-risk species (including red-cockaded woodpecker), land ownership adjustment, non-native invasive species, resource management zones, roads, old growth, and water quantity were added or updated. The suitability sections for minerals and timber were updated.

Desired conditions were reformatted to improve clarity in the following sections: experimental forest, forest opening associates, maritime ecosystems, oak forests and mesic hardwoods, old growth, broader landscape and other forest products. In addition, open road densities are now identified as "moderate" (qualitative) for each ecosystem rather than as "less than 1 mile per square mile", a quantitative measure, because this measure would be impractical to implement by ecosystem.

New information from the South Carolina Department of Energy resulted in the removal of language related to the potential for the development of wind energy on the Forest in both the FEIS and revised plan because wind energy is only feasible off-shore.

In response to comments, additional clarification of how the revised plan components for species of conservation concern (SCC) were developed and the process for evaluating effects to SCC were incorporated into Appendix D of the revised plan and Chapter 3 and Appendix E of the FEIS.

In response to comments, information was added to the FEIS and revised plan about other minerals, such as phosphate. Additional information was added in the FEIS to assess the potential

impact of access for mineral exploration or development, as well as the effects of other geologic hazards.

The environmental justice section of the FEIS was updated to reflect concerns raised during the public engagement process.

Overall, the changes are minor and within the scope of the analysis presented in the DEIS. See the planning record for additional, detailed information.

Alternatives Considered in Detail

The no action and two action alternatives are summarized as follows. A more detailed description of these alternatives can be found in the FEIS in Chapter 2, “Alternatives” section.

Alternative 1 – No Action (1996 Forest Plan)

Under alternative 1, the 1996 Forest Plan would continue to guide management of the plan area. The 1996 Forest Plan does not address social and economic sustainability or connecting people to nature.

Alternative 2 - Proposed Action

The restoration of fire-maintained ecosystems and hydrologic function of wetlands is the foundation of this alternative. Restoration of longleaf pine ecosystems is a major focus. This alternative includes integrated resource management zones, each of which defines and focuses recreation opportunities, social/cultural components and multiple uses.

Alternative 3

This alternative is a modification of alternative 2. It emphasizes alternative methods to frequent landscape-level prescribed burning in smoke sensitive areas where human health can be impacted. This alternative includes a recommendation to expand the four existing wilderness areas and to recommend the inventoried area called “Area B” for wilderness, in order to enhance the overall wilderness experience on the Forest.

Alternatives Considered but Eliminated from Detailed Study

NEPA requires federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the proposed action provided suggestions for alternative methods of achieving the purpose and need. Some of these alternatives may have been outside the scope of the revised plan, duplicative of the alternatives considered in detail or determined to be components that would cause unnecessary environmental harm. Three alternatives were considered but dismissed from detailed consideration for reasons summarized in chapter 2 of the FEIS.

Environmentally Preferable Alternative

National Environmental Policy Act (NEPA) regulations require agencies to specify the alternative or alternatives which were considered to be environmentally preferable (40 CFR 1505.2(b)). Forest Service NEPA regulations define an environmentally preferable alternative as: “the alternative that best promote the national environmental policy as expressed in NEPA’s section 101. Ordinarily, the environmentally preferable alternative that which causes the least harm to the biological and physical environment; it is also the alternative which best protects and preserves historic, cultural, and natural resources” (36 CFR §220.3).

I find, based upon the laws and regulations guiding National Forest System management, that alternative 2 is the environmentally preferred alternative. When compared to alternative 1 and 3 it best contributes to, and moves the Forest towards, ecological, social and economic sustainability desired conditions which will benefit future generations (see “Rationale” and “Meeting Substantive Requirements of the Rule” sections). Also see the planning record for additional details on how each goal of Section 101 of NEPA was evaluated.

Best Available Scientific Information

The 2012 Planning Rule (§219.6(a)(3) and 219.14(a)(4)) requires the responsible official to document how the best available scientific information was used to inform the assessment, the plan decision, and the monitoring program. Such documentation must identify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered.

The desired conditions for ecosystems were developed using information provided by NatureServe, a national leader in the science of ecology. The information provides characteristics of the composition, structure and the ecological processes needed to sustain the ecosystems. This information guided the determination of key characteristics of each ecosystem (NatureServe 2012).

The ecosystems were mapped by sampling over 1,000 plots of representative examples of the ecosystems, using statistical analyses to develop digital terrain models of more than a dozen environmental variables, along with statistical accuracy assessments, to estimate locations of the ecosystems. The amount and location of ecosystems was used to develop the objectives for ecosystem restoration in the revised plan (Simon and Hayden 2014).

Estimates of the departure from desired conditions were used to develop objectives for ecological restoration in the revised plan. The information from the Landfire biophysical setting models provided the most reliable and relevant information to base the departure analysis (LANDFIRE 2006). As part of the age and structure analysis, desired conditions and objectives were informed by the scientific information used to develop the Forest Service Southern Region old growth strategy (USDA Forest Service 1997). Based on this information, monitoring questions and indicators were developed to track the conditions of key characteristics of the ecosystems. For some characteristics, such as groundcover and threats from non-native invasive species, there are uncertainties due to lack of data that will be addressed through the monitoring program.

Desired conditions and objectives for rivers, streams and forested wetlands were informed using characteristics in the watershed condition framework (USDA Forest Service, 2011a) and the scientific information used to develop the framework. Relevant information was provided by the

Santee Experimental Forest, Center for Wetlands Research located on the Francis Marion (Amatya et al. 2009). Monitoring questions and indicators were developed using the characteristics of the watershed condition framework that will determine and disclose conditions for the subwatersheds on the Francis Marion. Best management practices will be monitored and reported every 2 years.

Nine threatened or endangered species were identified as known to occur on the Francis Marion through informal consultation with U.S. Fish and Wildlife Service. Sixty-seven species of conservation concern were identified as known to occur on the Forest using a variety of sources, including rankings using the NatureServe Explorer species summary and the South Carolina Natural Heritage program data (NatureServe Explorer 2014). A panel of experts in species biology met in 2014 to provide relevant information concerning species needs.

The “at risk” species habitat needs were associated with the key characteristics of the ecosystems using the most reliable approach as documented in The Nature Conservancy’s “Conservation Action Planning Handbook” (The Nature Conservancy 2006). The Forest Service Southern Region has developed a digital data system (called the ecological sustainability evaluation tool) for species conservation planning based on the Conservancy’s procedures. The evaluation of species groups with ecosystems informed the development of desired conditions, objectives and standards and guidelines to provide ecological conditions for the persistence of these species groups.

Monitoring questions and indicators were developed for focal species in order to determine how well the ecosystem conditions are functioning and which will provide data and whether adaptive strategies are needed for “at risk” species.

Conditions for “at risk” species entered into the ecological sustainability evaluation tool were estimated using the professional judgement of Forest Service biologists who were informed by (but not limited to) the following:

- Conditions for “at risk” plants and rare communities, including the effects of fire in fire-adapted ecosystems, were informed from the works of RD Porcher, J. Everett, J. Glitzenstein, D. Streng, the Tall Timbers Research Station, the U.S. Fish and Wildlife Service, the South Carolina Natural Heritage Program and others.
- Conditions for “at risk” animals were informed by the works of (partial list):
- Red-cockaded woodpecker science came from R.N. Conner, R. Costa, R.G. Hooper, the U.S. Fish and Wildlife Service and others.
- Conditions for “at risk” amphibians and reptiles were informed by the works of: S.H. Bennett, the U.S. Fish and Wildlife Service, the South Carolina Department of Natural Resources, PARC and others.
- Conditions for “’at risk” bats was informed by the work of J. Menzel, W.M. Ford and others.

The most reliable and relevant information about climate change was provided by the Southern Research Station, Eastern Forest Environmental Threat Assessment Center. Scientific information considered during the plan assessment was based on a comprehensive review and synthesis of peer reviewed literature and modeling results available through the “Template for Assessing Climate Change Impacts and Management Options” (TACCIMO; Treasure et al. 2014). The

comprehensive literature review focused on addressing all ecosystems described in the plan's ecological framework as a coarse filter and species of interest as a fine filter. The literature review also addressed climate effects on other required assessment topics related to social, cultural, and economic sustainability. Modeling results considered in the assessment included climate projections from a broad array of current climate models, sea level rise modeling, tree species distribution modeling, water supply stress modeling, and climate resiliency modeling. Desired conditions and objectives were informed by potential stressors and threats influenced by climate variability and change, particularly sea level rise and disturbance drivers. Climate change monitoring questions and indicators are linked to the Southern Region's Broad Scale Monitoring Strategy that will track changing conditions, including sea level rise, caused by climate change and includes explicit consideration of scientific accuracy, relevance and reliability.

An important aspect of social sustainability is protecting human communities from wildfires. Objectives for reducing wildfire risks were developed in the Revised Plan based on a range of factors. Human communities at risk of wildfire were identified using relevant information provided in the Federal Register (66 FR No. 3 2001) definition of wildland urban interface as well as listing of communities-at-risk. The most reliable information used to estimate wildland fire occurrence is found in the "Spatial wildfire occurrence data for the United States, 1992-2011" (Short 2013).

The expected fire behavior was estimated using information from BehavePlus (Andrews 2013). The estimates of the fire regime condition classes used Landfire 1.1.0 fuel models. Monitoring questions and indicators for assessing a human community's risk of wildfires uses fire regime condition classes. Changed conditions will be reported every 2 years.

A national classification system for ecosystem services developed by the Environmental Protection Agency (Landers and Nahlik 2013) was used to classify final environmental goods and services and determine the beneficiaries of the services. While the science of ecosystem services is rapidly developing, this approach was most relevant within the time frame of revised plan development.

Desired conditions and objectives for recreational settings, recreation opportunities and sustainable recreation were informed by using characteristics in the Forest Service ROS Users Guide (USDA Forest Service 1986) as well as sustainable recreation principles. Information from national visitor use monitoring and national strategies such as "A Framework for Sustainable Recreation" were used to develop forest plan direction. Conditions related to recreation will be monitored and a changed condition report will be prepared every two years.

Desired conditions and objectives for scenic character were informed by "Landscape Aesthetics, a Handbook for Scenery Management" (USDA Forest Service 1995). Monitoring questions and indicators were developed using the characteristics of scenic character as well scenic integrity on the Francis Marion. Conditions will be monitored and report on changing conditions.

I find that the best scientific information was used to develop the revised plan components and other plan content. There are no known controversies over the science of the ecology of ecosystems, especially the fire-adapted longleaf pine ecosystem. The science of wildfire behavior and risks to human communities is well documented. While there may be some differences of opinion about why there are rising sea levels, the science is clear that seas are rising and that adaptive management strategies should be developed as needed. Throughout the plan revision process, literature that was submitted by the public or other Agencies was used to improve the

analysis. No literature that could be considered “opposing” was submitted as part of comments on the draft environmental impact statement.

Public Involvement

Chapter 1 of the FEIS (Chapter 1, “Public Involvement” section) and appendix A provide detailed information on the public involvement process.

In the winter of 2014, the assessment, need for change determination and proposed management strategies were posted on-line on the public website for the Francis Marion plan revision. These documents are available at http://www.fs.usda.gov/scnfs.

The notice of intent (NOI) to prepare an EIS was published in the *Federal Register* (79 FR 24372-24375) on April 30, 2014. The NOI asked for public comment on the proposal from May 1, 2014 to June 16, 2014. Generally, comments were favorable and supportive of the rolling alternative, which emphasizes prescribed burning, restoration of longleaf pine ecosystems and hydrologic function, and sustainable recreation opportunities.

During this time targeted outreach efforts to youth and low income populations included various activities. The Forest Service developed partnerships with TRIO, a federal program that works with middle school to college level students, and the local technical colleges in South Carolina.

Using the comments from the public, other agencies and local governments, the interdisciplinary team identified two issues regarding the effects of the proposed action including the restoration of native ecological systems (issue 1) and impacts related to the rapid change of land use from forested land to an urban landscape (issue 2). To address these concerns, the Forest Service developed the alternatives described above in the “Alternatives Considered in Detail” section. Also see the “Rationale” section which describes how the selected alternative responds to the (significant) issues.

A 90-day public comment period on the draft, revised land management plan and associated DEIS was initiated on August 14, 2015 with the publication of the Notice of Availability in the *Federal Register* (80 FR 48854). Approximately 37 letters and emails were received during the DEIS comment period. Response to (DEIS) public comments can be found in Appendix H of the FEIS.

Tribal Consultation

The Catawba Indian Nation is the only federally recognized tribe in South Carolina. There are no known federal or state tribal members practicing traditional cultural activities on the Forest and no sacred sites are known to exist on the Forest. Specific to the revision process, the Forest conducted formal face-to-face consultation with Catawba Indian Nation concerning forest plan revision and had discussions focused on special forest products that might be of interest. The Catawba Indian Nation did not identify any concerns about the forest plan direction being developed or the specific management activities that may be proposed to achieve forest plan direction (See FEIS, “Tribal Relations” and “Appendix A” section).

Research Station Director Concurrence

The 6,067-acre Santee Experimental Forest (also referred to as the Santee EF) is located within the Francis Marion's boundaries. Research operations are guided by the Southern Research Station, not by the Francis Marion. The Forest has worked with the Southern Research Station since the assessment phase of plan revision. The revised land management plan direction for the Santee EF recognizes that the Santee EF conducts studies and experiments to develop needed information and tools to manage, restore, and conserve the functions and values of coastal plain forests. The revised land management plan identifies those areas within the Santee EF that will be managed based on potential ecosystem restoration needs, including fire-maintained ecosystems when possible. On August 10, 2016 the director of the Southern Research Station concurred with the revised land management plan direction that is applicable to the Santee Experimental Forest, as required by 36 CFR 219.2(b)(4).

Coordination with other Federal Agencies and State and local governments

Throughout plan revision, the compatibility of the revised land management plan to other planning and land use policies was assessed (per 36 CFR 219.4):

Berkeley and Charleston County

The Forest reviewed various county plans including the:

- Berkeley County 2010 Comprehensive Plan. Planning the Future While Preserving the Past. This plan can be viewed at https://www.berkeleycountysc.gov/drupal/zoning/plan.
- Charleston County, South Carolina: Comprehensive Plan Update. Guiding the Future for a Lasting Lowcountry ADOPTED *November 18, 2008; Updated June 5, 2014.* This plan can be viewed at http://www.charlestoncounty.org/departments/zoning-planning/index.php.
- Our Region, Our Plan. Envisioning the Future of Berkeley, Charleston and Dorchester Counties, Preferred Plan Overview, March 27, 2012. The plan can be viewed at http://www.bcdcog.com.
- Charleston Parks, Recreation, Open Space and Trails (Sept. 2013) and People2Parks, Bike-Walk Plans (https://www.ccprc.com/1207/Comprehensive-Plans).

Desired conditions and objectives in the revised plan promote an '"all lands approach" which encourages working with local governments to achieve common goals and maximizes resources. The revised plan recognizes the importance of rural crossroads and the opportunities to improve the quality of life for people living within the administrative boundary of the national forest. Quality of life is affected by adequate access, sustainable economic opportunities and outdoor recreation. Some coordination needs identified in the revised forest plan include the following statements:

- The counties are partners inthe Sewee Longleaf Conservation Cooperative, that is designed to re-establish, maintain and enhance the longleaf pine ecosystem in the Sewee

landscape Input from the Cooperative influenced the design of the selected alternative (FEIS, Chapter 2, “Comparisons among Alternatives 1, 2 and 3” section).

- The Awendaw Fire District’s Community Wildfire Protection Plan and the Community Wildfire Protection Plan for Berkeley County (under development) was used to evaluate the Forest’s technical and fiscal capability to maintain fire on the landscape (Revised Plan, Chapter 2, 2.2, Social and Economic Sustainability).
- This decision, through the revised land management plan, creates opportunities for interconnected trail systems through partnerships with local, county, State and Federal agencies and nonprofits (Revised Plan, Chapter 2, 2.3, Resource Integration).
- This decision facilitates actively working with Berkeley County on a “green infrastructure” initiative and blueways (Revised Plan, Chapter 2, 2.3, Resource Integration).
- The revised plan links the Francis Marion to the broader landscape through migration corridors (Revised Plan, Chapter 2).
- The goals from Charleston County’s People2 Parks-Implementation Study fits with desired conditions of connecting people to nature and improving community health.

State Agencies

The Forest reviewed various State plans including the South Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP) (Haley et al. 2013), South Carolina’s State Wildlife Action Plan (SWAP) (South Carolina Department of Natural Resources 2015) and the Statewide Forest Resource Assessment and Strategy (South Carolina Forestry Commission 2010).

The information in the SCORP was considered in the assessment and that information has informed the planning process for the Francis Marion Plan Revision. The goals action plan in the 2013 SCORP reflect a collaborative effort that involved Forest Service staff. Similarly, during the collaborative effort for the Francis Marion Plan Revision involved local and state recreation staff. There are no conflicts with the 2013 SCORP and the Francis Marion Revised Forest Plan.

The revised plan complements many state-wide goals and objectives identified in South Carolina’s Wildlife Action Plan including: restoring longleaf pine within its historical range; suppress and eradicate non-native and invasive plants and pests; restore fire-adapted lands and reduce risk of wildfire impacts; protect and enhance water quality; protect, conserve, and enhance fish and wildlife resources; and manage forests to mitigate and adapt to global climate change. The supplemental information on conservation strategies to manage habitat for South Carolina’s Species of Conservation was used to inform the analysis in the environmental impact statement and revised plan direction.

The Forest coordinated with the South Carolina Forestry Commission (since 2012) to address the topic of prescribed burning activities and alternative 3 was designed to address concerns related to this topic. Some of areas of needed cooperation that are identified in the revised plan are developing and implementing community wildfire protection plans and restoration of longleaf pine through the Sewee Longleaf Conservation Cooperative. The revised forest plan incorporated South Carolina’s Best Management Practices for Forestry to protect water quality. The revised land management plan affirms the interrelationship between forest standards and guidelines and

national and state best management practices that are required to minimize the impacts on soil and water resources.

In addition to working with the State on smoke impacts and soil and water resources, the Forest worked with the State during the plan revision process to address non-native species management. The revised plan includes desired conditions which emphasizes collaboration with partners (including the State) to address prevention and response (FEIS, Chapter 3, “Non-native Invasive Species” section). Since 1948 the Forest has participated in cooperative agreements with the State to manage wildlife resources on the Forest, including in the Francis Marion National Forest Wildlife Preserve which is addressed in the revised plan. For these reasons, I find the revised plan is consistent with the State’s planning efforts and coordination occurred as required.

Tribes

See the “Tribal Consultation” section for information on how the forest coordinated with the Catawba Tribe during forest plan revision.

Federal Agencies

The Forest cooperated with both the United States Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA) in the identification and evaluation of threatened and endangered species likely to be affected and in the development of Forest plan components that contribute to their recovery (FEIS, Chapter 3, “Threatened and Endangered Species” section and 2016 Biological Assessment). Also see the “Endangered Species Act” section in the “Findings Required by Other Laws and Regulations” portion of this decision.

I find upon reviewing the FEIS and planning record that coordination with other Federal agencies and State and local governments occurred as required by 36 CFR 219.4. No conflicts with the revised land management plan were identified.

Findings Required by Other Laws and Regulations

Clean Air Act

The FEIS (Chapter 3, “Air Quality” and “Climate Change” section) addresses and discloses potential impacts from program activities that are approved by the forest plan, including the use of prescribed fire. The forest plan includes desired conditions and strategies for maintaining air quality and monitoring questions for gathering information. Although this decision increases the acres where prescribed fire can be used, current air quality standards will be met because prescribed fires will be implemented in compliance with the Forest Service Southern Region’s Smoke Management Guidelines and smoke dispersion modeling will be completed before implementation. Applying these guidelines at the site-specific project level will mitigate the potential for nuisance smoke, impacts to downwind sensitive areas and public safety hazards. In addition, prescribed burning activities will be coordinated with the South Carolina Forestry Commission to ensure that impacts from prescribed burning do not exceed air quality standards. Therefore, I find this decision to be in compliance with the Clean Air Act.

Clean Water Act

The Clean Water Act (CWA) (33 U. S. C. § 1251 et seq.) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. In South Carolina the designated agency for enforcement of the Clean Water Act is the South Carolina Department of Health and Environmental Control. The FEIS addresses potential impacts to water resources in the chapter 3, “Rivers and Streams” section.

The revised land management plan provides plan components for protecting water resources and aquatic habitats. In addition, water resources and habitats will be protected by implementing the forest plan’s riparian management zone direction, by following the Forest Service’s National Best Management Practices for Water Quality Management on National Forest System Lands, and by following South Carolina’s Best Management Practices for Forestry. The revised plan provides direction that will protect wetlands by ensuring that new construction of roads and other facilities will not have an adverse effect on sensitive aquatic habitat or wetland functions. In addition, wetland evaluations will be required before land exchanges occur or special-use permits are issued in areas where conflicts with wetland ecosystems could occur. The evaluations would inform the responsible official of potential non-compliances with the Clean Water Act. Therefore, I find this decision complies with the Clean Water Act.

Endangered Species Act

The Endangered Species Act of 1973 (ESA) requires federal agencies to insure that any agency action does not jeopardize the continued existence of the species (ESA Section 7(a)(2)).

In January 2013 the Forest notified the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA) and the U.S. Fish and Wildlife Service (FWS) of the forest plan revision process and requested lists of federally listed threatened and endangered species, species proposed for Federal listing, and candidate species to be considered for further evaluation throughout the forest plan revision process. In 2015 the Forest met with the FWS to finalize the list of threatened and endangered species that would be addressed in the biological assessment (BA). See the BA (FEIS, Appendix G) in the planning record for the complete consultation history.

In accordance with Section 7(c) of the Act, the BA was prepared to assess the effects of implementing the Francis Marion National Forest Revised Land Management Plan on ten federally-listed threatened, endangered, proposed species or designated critical habitat known or likely to occur on the Francis Marion National Forest in Charleston and Berkeley County, South Carolina.

The BA found implementation of the revised land management plan **may affect, and is likely to adversely affect individuals of** American chaffseed *(Schwalbea americana*), Canby’s dropwort (*Oxypolix canbyi*), frosted flatwoods salamander (*Ambystoma cingulatum*), pondberry (*Lindera melissifolia*) and red cockaded woodpeckers (*Picoides borealis*). The potential adverse effects to individuals of federally listed species would result in short-term harm incidental to ecological restoration activities such as prescribed fire, reducing hardwood and pine mid-stories and thinning and restoring longleaf pine to improve habitat conditions. While individuals may be impacted, the plan would provide an overall net benefit. Because the forest plan does not commit to any action, projects would be subject to further consultation.

The BA also determined that implementation of the revised plan will primarily result in discountable, insignificant, or completely beneficial effects to frosted flatwoods salamander designated critical habitat.

The BA determined that implementation of the revised plan may affect, but is not likely to adversely affect wood stork (*Mycteria americana*), which is not known to nest to on the Forest.

The BA found implementation of the revised land management plan activities will have **no effect** on shortnose (*Acipenser brevirostrum*) and Atlantic sturgeons (*Acipenser oxyrinchus*), Bachman's warbler (*Verimvora bachmanii)* and West Indian manatee (*Trichechus manatus*).

The revised plan includes desired conditions, standards and guidelines, objectives and provides broad management direction. These forest plan components comply with the requirements of the Act and the associated recovery plan for each federally listed species. The BA has been submitted to FWS for review and concurrence. For these reasons, I find this draft decision to be in compliance with the requirements of the Endangered Species Act of 1973.

Executive Order 12898 - Environmental Justice

Environmental Justice populations exist within the 8-county planning area. Populations most at risk of experiencing disproportionately high and adverse human health or environmental effects include low-income households and African Americans who identify ethnically as Gullah Geechee. This decision continues management of the Francis Marion's ecosystems for ecological integrity and healthy, plant, fish and wildlife populations will contribute to the resilience of these forest-dependent communities. These contributions are a vital part of Gullah Geechee community and will continue to contribute to their community sustainability (Final EIS, Chapter 3, "Environmental Justice").

Executive Order 1190 and 11998 – Wetlands and Floodplain Management

This decision protects wetlands values and function through the implementation of the riparian management zones and by following the Forest Service's "National Best Management Practices for Water Quality Management on National Forest System Lands" (USDA Forest Service 2012) and by following "South Carolina's Best Management Practices for Forestry" (South Carolina Forestry Commission 1994). (FEIS, Chapter 3, "Climate Change", "Water Resources", "Ecological Systems", Threatened and Endangered Species" and "Forest Health" sections). Wetland protection will be provided by ensuring that new construction of roads and other facilities will not have an adverse effect on sensitive aquatic habitat or wetland functions. This decision further protects wetlands by requiring a wetland evaluation before land exchanges or the issuance of special use permits (in areas where conflicts with wetland ecosystems may occur).

This decision protects floodplains and conserves riparian areas through the forest plan direction for rivers and streams ecosystems (FEIS, Chapter 3, "Riparian Areas (including floodplains) and Wetlands" and "Water Quality" section). The direction is embedded in all other ecosystem groups. As required, site-specific analysis of floodplain values and functions will occur for any project occurring within the 100-year floodplain zone, and prior to any land exchange involving these areas.

The revised plan includes protective measures for riparian areas include the delineation of riparian management zones on perennial and intermittent streams. Management activities within

the riparian management zone must comply with National and State best management practices and other State water quality regulations. Floodplains will be managed by locating critical facilities outside of floodplains or by using structural mitigation measures. Further protections are provided in forest-wide standards for management of ephemeral stream zones.

Magnuson-Stevens Fishery Conservation and Management Act, Public Law 94-265

The Francis Marion Forest includes over six thousand acres of essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The Forest Service has cooperated with both the FWS and NOAA in the identification and evaluation of species likely to be affected and in the development of forest plan components that contribute to their recovery (FEIS, Chapter 3, “Threatened and Endangered Species” section).

The selected alternative provides forest plan direction that will restore hydrology in wetlands, which should benefit downstream EFH. This decision facilitates the restoration of wetlands, floodplains or riparian areas to benefit at-risk species within three target watersheds, Guerin Creek, Turkey Creek, and the Headwaters of Wambaw Creek. Hydrologic restoration would improve habitats for freshwater aquatic species and at-risk amphibians (FEIS, Chapter 3, “Essential Fish Habitat” section). Future project activities will be designed to comply with the revised plan and site-specific projects that have the potential to adversely affect essential fish habitat will go through consultation in accordance with the Act. For these reasons I find this decision is compliant with Public Law 94-265.

National Environmental Policy Act (NEPA)

Federal agencies are required to consider and disclose the effects of proposed actions that significantly affect the quality of the human environment. The revised land management plan is a programmatic level planning effort that does not directly authorize any ground disturbing activities or projects.

I find the environmental analysis for the revised land management plan met the requirements of NEPA, and the CEQ and Forest Service regulations. The ID Team considered public and other agency input throughout the planning process (FEIS, Chapter 1, “Public Involvement” section), developed and analyzed a reasonable range of alternatives (FEIS, Chapter 2, “Alternatives” section) and considered and displayed the environmental consequences in the EIS in conformance with the National Environmental Policy Act of 1969 (NEPA), CEQ’s NEPA regulations (40 CFR 1500 to 1508) and the Agency’s NEPA procedures (36 CFR 220). Future ground disturbing activities and projects will be consistent with the revised land management plan and subject to additional site-specific public involvement, environmental analysis, and pre-decisional review processes in compliance with the Act and CEQ’s NEPA regulations.

National Forest Management Act (NFMA)

On April 9, 2012 the Department of Agriculture issued a final planning rule at 36 CFR 219 for National Forest System land management planning (2012 Rule) 77 FR 68 [21162-21276]. The “Rationale” section of this decision and the section on “Meeting Substantive Requirements of the Rule” document how the revised land management plan meets these 36 CFR 219 requirements.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires each Federal agency to take into account the effects of its actions on historic properties, prior to approving expenditure of Federal funds on an undertaking or prior to issuing any license.

I find this decision is fully compliant with the Act. The revised land management plan is a programmatic level planning effort that will not directly authorize any ground disturbing activities or projects. The revised plan includes desired conditions, objectives, guidelines, management strategies and monitoring requirements for managing and protecting cultural resources listed or eligible for the National Register of Historic Places.

Site-specific projects that are undertaken as a result of the direction in the revised plan will fully comply with laws and regulations that ensure protection of heritage resources. Significant cultural resources will be identified, protected, and monitored in compliance with the National Historic Preservation Act. Tribal consultation will occur and proposed activities will be coordinated with the State Historic Preservation Office (SHPO) of South Carolina.

I find this decision offers the greatest potential for interpretation and education of cultural resources by having forest plan direction which emphasizes the creation of partnerships with the national historic districts. The districts would highlight historic sites on the forest and increase opportunities for tourism (FEIS, Chapter 3, “Cultural Resources” section).

Effective Date and Plan Implementation

The final Record of Decision will not be signed until all concerns and instructions identified by the reviewing officer in the objection response have been addressed (§219.58). If no objection is received, the final Record of Decision cannot be signed before the fifth business day following the end of the objection-filing period.

The 2016 Francis Marion National Forest Revised Land Management Plan will then become effective 30 days after publication of the legal notice of my plan approval in the Francis Marion and Sumter National Forests newspaper of record, *The State* (§219.17(a)(1).

Forest plans are permissive in that they allow, but do not mandate, the occurrence of certain activities. The revised plan will be implemented through a series of project-level decisions based on site-specific environmental analysis and public involvement. The revised plan seeks to guide management activities and projects by establishing a clear desired condition for the Francis Marion and for each ecosystem, rather than by establishing schedules for actions. This approach leaves more flexibility for managers to adapt program and project selection as changes take place in budgets, resource capabilities, and management priorities.

Outputs in the FEIS are not commitments but projections of possible outcomes. They were used to approximate activities and practices in order to estimate the likely environmental effects of following the direction provided by the revised plan.

Throughout the life of the plan, specific projects and activities will be proposed and analyzed. These analyses will be done in accordance with NEPA, and documented in the appropriate NEPA documents, i.e., environmental assessments or environmental impact statements, or will be categorically excluded from such documentation. Projects, practices and activities will be

designed to be consistent with the applicable desired conditions, objectives and standards and guidelines in the revised plan.

Transition to the Revised Land Management Plan

Revised forest plan direction will apply to all projects for which decisions are made on or after the effective date of this ROD. Every project and activity must be consistent with the applicable plan components. A project or activity approval document must describe how the project or activity is consistent with the applicable plan components of the revised plan. The criteria for determining consistency with the revised plan are detailed in 36 CFR 219.15(d).

The National Forest Management Act requires that when forest plans are revised, resource plans and permits, contracts and other instruments for the use and occupancy of national forest lands shall be revised as soon as practicable to be consistent with the current land management plan (16 U.S.C. 1604(i)). Any revisions of these instruments are subject to valid existing rights.

There are many management actions that have decisions made before the effective date of this ROD. These pre-existing actions were considered part of the baseline in developing the revised plan and the projected effects of these actions are part of the cumulative effects analyses documented in the FEIS. An additional analysis concluded that the continued implementation of these previously decided actions will not foreclose the ability to meet the desired conditions and objectives of this revised plan.

I have not identified the need to modify any pre-existing actions involving permits, contracts, or other instruments for the use and occupancy of National Forest System lands due to inconsistencies with the revised plan. These actions will be implemented according to the terms of the applicable instrument. However, should the need arise, I have the discretion to modify these permits, contracts or other instruments for the use and occupancy of National Forest System lands.

Plan Amendments

The revised plan is a dynamic document that can be changed with appropriate public involvement and environmental analysis. Through the life of the revised plan, amendments may be needed to incorporate new information, new policy and direction, or changing values and resource conditions. Amendments will keep the revised forest plan current, relevant, and responsive to agency and public concerns. Amendments are needed whenever any of the revised plan components should be changed due to any of the above conditions. The revised plan also can be amended for specific projects if it is determined that the best method of meeting project goals and objectives conflicts with existing plan direction. There will be opportunities for the public to be involved in any future changes to the revised plan. Any amendment to the revised plan will need to follow the plan amendment process outlined in 36 CFR 219.13. In some situations, an “administrative change” can be used to update/change the Plan (see also §219.13).

Administrative changes are generally limited to changes to parts of the plan that are not components, except that administrative changes also include corrections of clerical errors to any part of the plan, conformance of the plan to new statutory or regulatory requirements (§219.7(f)).

Administrative Review

This draft decision is subject to the pre-decisional objection process pursuant to 36 Code of Federal Regulation (CFR) § Part 219 Subpart B. The opportunity to object ends 60 days following the date of publication of the legal notice in *The State*, the newspaper of record for the Francis Marion National Forest. The publication date of the legal notice in this newspaper is the exclusive means for calculating the time to file an objection, and those wishing to object should not rely upon dates or time frame information provided by any other source.

Objections will be accepted only from those who have previously submitted substantive formal comments regarding the proposed plan during scoping or other designated opportunity for public comment. Issues raised in objections must be based on issues raised in the previously submitted substantive formal comments unless the issues are based on new information arising after designated comment opportunities §219.53(a).

The objection must contain the minimum content requirements specified in §219.54(c) and incorporation of documents by reference is permitted only as provided in §219.54(b). It is the objector's responsibility to ensure timely filing of a written objection with the reviewing officer. All objections are available for public inspection during and after the objection process.

Written objections, including attachments, must be filed with: Reviewing Officer Tony Tooke, Regional Forester, 1720 Peachtree Street, Atlanta, GA 30309, 404-347-4177 (voice), 404-347-4821 (fax). The office business hours for those submitting hand-delivered objections are: 8:00 am to 4:30 pm Monday through Friday, excluding holidays. Electronic objections must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc, .docx) to objections-southern-regional-office@fs.fed.us. Please state "Francis Marion Forest Plan Revision" in the subject line when providing electronic objections, or on the envelope when replying by mail. Objections or objection content specific to the identification of species of conservation concern will be forwarded to Reviewing Officer, Brian Ferebee, Associate Deputy Chief of the Forest Service.

Contact Person

For additional information concerning this draft decision or the objection process, contact Mary Morrison, Forest Planner, at 803-561-4000.

JOHN RICHARD LINT Forest Supervisor Francis Marion and Sumter National Forests	DATE