



Draft Revised Land Management Plan Francis Marion National Forest

**Berkeley County, South Carolina
Charleston County, South Carolina**

Summary of Public Comments

August 2016

Introduction

The Francis Marion National Forest (Francis Marion or Forest) released the “Draft Revised Land Management Plan for the Francis Marion National Forest and Associated Draft Environmental Impact Statement” on August 14, 2015 to begin the official 90-day comment period. The comment period ended on November 12, 2015. The Francis Marion received a total of 37 comment letters and emails on the draft land management plan (draft plan) and associated draft environmental impact statement (DEIS). No form letters were received. Letters and emails were received from individuals, groups, organizations, agencies, and business owners. Letters and emails were either delivered by the U.S. Post Office, submitted by email, or directly entered through the Comment Analysis and Response Application (CARA) input form by the commenter. Most comments received were entered directly by comments, but letters and emails that were submitted were entered by Forest Service staff into the CARA input form for a complete record. Reports generated by CARA on the coding structure and coded comments are attached

All of the comment letters and emails were analyzed using a process called content analysis, which was completed by Forest Service personnel and contractors (see Appendix A in this Content Analysis Report). Of the 37 comment letters that contained unique and substantially different comments, comments that were coded, analyzed, addressed, and entered into CARA and then associated with one of the 153ed Public Concern statements (PCs). Then the IDT then developed responses to each of the PCs. The 153 PCs are listed in Appendix B of this document. Appendix H of the Final Environmental Impact Statement (FEIS) associated with the revised land management plan (revised plan) also includes the PCs along with a response for each PC.

It is important to recognize that the consideration of public comment is not a vote-counting process in which the outcome is determined by the majority opinion. Relative depth of feeling and interest among the public can serve to provide a general context for decision-making. However, it is the uniqueness, appropriateness, and factual accuracy of comment content that serves to provide the basis for modifications to planning documents and decisions. Further, because commenters are self-selected, they do not constitute a random or representative public sample; therefore, caution should be used when interpreting the demographic information. While demographic information can provide insight into the perspectives and values of commenters, it does not necessarily reveal the desires of society as a whole. All input is considered and the analysis team attempts to capture all relevant public concerns in the analysis process.

All letters are available in the project record and are posted on the Francis Marion and Sumter National Forests’ website through the Comment Analysis and Response Application (CARA) reading room at <https://cara.ecosystem-management.org/Public/ReadingRoom?project=40695>.

Content Analysis Process

The Forest Service followed a systematic process of carefully logging-in, numbering, reading, coding and summarizing all viewpoints and concerns that were submitted. The comments that were most helpful were those that were unique, substantially different, and were specifically related to the management direction in the Draft Forest Plan and analysis disclosed in the DEIS. In addition to capturing unique and substantially different comments, this report attempts to reflect the emotion and strength of public sentiment in order to represent the public’s values and concerns as fairly as possible. When an individual raised multiple concerns within the same letter, each unique comment was numbered and tracked separately. Each comment was assigned a unique tracking number and coded by subject or topic (see Appendix A).

Once the unique and substantially different comments were coded, concerns raised by different commenters on the same subject and with the same intent and issue were grouped and summarized into public concern statements that capture the essence of those like-concerns. In this way, multiple

comments may be addressed by one response. In some cases, more nuanced or complex concerns may be answered through multiple responses to multiple concern statements, or they may have a single response dedicated to just that specific commenter. It is important to keep in mind that even though the public concern statements attempt to capture the full range of public issues and concerns, they should be reviewed with the understanding that there is no limitation on who submits comments. Therefore, the comments received do not necessarily represent the sentiments of the public as a whole. This report attempts to provide fair representation of the wide range of views submitted. Every comment has the same value, whether expressed by many, or by one respondent. Analyzing comments is not a vote-counting process.

The Forest Service response to the public comments, which in some cases resulted in changes to the draft plan or the DEIS, was not determined by majority opinion but rather by the substance of the comments. The content analysis process ensured that every comment was read, analyzed, and considered.

Commenters and Associated Public Concern Statements

Each public concern statement is accompanied by a response that was developed by subject matter experts. In addition, each PC and response is accompanied by all of the public comments associated with each PC. The public comments provide commenter’s specific perspectives and rationale regarding that concern. For each public comment, it indicates the letter number after the comment, enabling the reader to track and review the original comment letters, if desired (see the column Letter # in Table 1). For a commenter to locate the responses to their letter the following process should be followed: First, locate the letter number assigned to your letter in Table 1. Second, go to Appendix B and find what PC’s are linked to your letter. This can be found in parenthesis following each paragraph under the associated comments for each PC. For example (2-2) is the second comment coded for William Baldwin under the PC that states “These comments are supportive of forest plan direction, such as an all-lands approach, restoration of longleaf pine and increased prescribed burning”. Third, go to Appendix H in the FEIS to find the response for each PC.

The primary purpose is to provide a topical review of voluminous comments in a format that aids in careful consideration and agency response, but doesn’t preclude the Forest Service from reading every comment letter. Public concern statements (PCs) and response to comments (RTCs) are in Appendix H of the Final Environmental Impact Statement (FEIS). Following is a list of the commenters arranged by their letter number.

Table 1. Letter code by commenter’s name and organization

#*	Name/Organization
2	Baldwin, William
4	Public, Jean
5	Alexander, John
6	Kelbey, Ryan
7	Haram, Gerald
8	White, David
9	Bamford, Michael
10	Baldwin, Billy
11	Public, Jean
12	Page, Chris
13	Depenbrock, Brian

#*	Name/Organization
14	Jamison, Lynne
15	Jamison, John
16	DeGarady, Colette, The Nature Conservancy
17	Kodama, Gene, SC Forestry Commission, State Forester
18	Glitzenstein, Jeff
19	Carson, Frank, Charleston County Mosquito Control
20	Stone, Peter, SC DHEC
21	Greene, Matt, Lowcountry Open Land Trust
22	Doar, Will, SC Department of Natural Resources, Geologist
23	Richardson, Sharon, Audubon Society, executive director
24	Everett, Jean, College of Charleston, Botany Professor
25	Brubaker, John A.
26	Foley, Tim, Southern Group of State Foresters
27	Gasper, Grace, Friends of Coastal South Carolina
28	Gasper, Grace
29	Prater, Ben, Defenders Of Wildlife
31	Fay, Virginia, NOAA, National Marine Fisheries Service
32	Midgett, Patricia, Cape Romain NWR
33	McGee, Karen, US Fish and Wildlife Service
34	Stahl, Andy, Forest Service Employees For Environmental Ethics
35	Johnson, Daniel, Wildland Engineering
36	Randall Mills, DOI_BLM Southeastern States District, Geologist
37	Dukes, Billy, SC Department of Natural Resources
38	Militscher, Christopher, US Environmental Protection Agency, Region 4
39	Mills, Randall, DOI-BLM-Southeastern States District Office, Geologist
40	Zurawski, Carol, Bureau of Land Management
41	John Brubaker
*There are no Letters 1, 3 or 30. Letters 36 and 39 contain duplication, so letter 39 was used for coding purposes.	

Appendix A – Content Analysis Process

Content Analysis (CA) is the process used to document, analyze, and respond to the public comment letters that were received on the draft plan and associated environmental analysis for the Francis Marion National Forest. This is a systematic process of compiling and categorizing all public viewpoints and concerns submitted on a plan during a formal comment period required by NEPA. Content analysis is intended to help the Interdisciplinary Team (IDT) clarify or adjust the draft forest plan and draft environmental impact statement (DEIS) before finalizing the revised plan and Final Environmental Impact Statement (FEIS). See Chapter 4 of the FEIS for a list of IDT members.

In the CA process, each comment letter is logged-in, assigned a unique number, read, coded, summarized, and responded to by the IDT. This number allows analysts to link specific comments to the original comment letter. All commenters' names and addresses are entered into a project-specific database program, enabling creation of a complete list of all commenters.

The comments that are most helpful are those that are unique, substantially different, and are specifically related to the analysis disclosed in Chapter 3 of the DEIS or direction in the draft plan. In addition to capturing unique and substantially different comments, this report attempts to reflect the emotion and strength of public sentiment in order to represent the public's values and concerns as fairly as possible. Analysts read and code these comments in each letter using the coding structure (see Appendix B). Each comment is coded by subject and category, and then all coded comments are entered into a comment database with minor corrections made for clarity, grammar, and punctuation. When an individual raises multiple concerns within the same letter, each unique comment was numbered and tracked separately.

Once the unique and substantially different comments were coded and entered into CARA, concerns raised by different commenters on the same subject and with the same intent and issue were grouped and summarized into public concern statements (PCs) that capture the essence of those like-concerns. In this way, multiple comments may be addressed by one response. In some cases, more nuanced or complex concerns may be answered through multiple responses to multiple concern statements, or they may have a single response dedicated to just that specific commenter. It is important to keep in mind that even though the public concern statements attempt to capture the full range of public issues and concerns, they should be reviewed with the understanding that there is no limitation on who submits comments. Therefore, the comments received do not necessarily represent the sentiments of the public as a whole. This report attempts to provide fair representation of the wide range of views submitted. Every comment has the same value, whether expressed by many, or by one respondent. Analyzing comments is not a vote-counting process. The FS response to the public comments, which in some cases resulted in changes to the FEIS or the revised plan, was not determined by majority opinion but rather by the substance of the comments. The content analysis process we used ensured that every comment was read, analyzed, and considered.

Form letters, which are considered organized group campaign, represent 0 percent of the total letters received during the public comment period for the draft plan and DEIS. Form letters are defined as five or more responses, received separately, but containing identical text. Once a form is identified, a "form master" is entered into the database with all of the content information. All responses with matching text are then linked to this master form. Duplicate responses from four or fewer respondents are entered as individual letters. Forms are designated with a number for the purpose of tracking subsequent submissions. Form numbers are assigned as each "form master" is identified. No form letters were received during the 90-day comment period.

Following is the systematic process used to analyze the comments:

Step 1: All comment letters were assigned a communication number to allow for tracking the unique comments within the letter to the public concern statements. Name and address information were entered into a database and these commenters were added to the project mailing list.

Step 2: Forest managers and the IDT read each letter and worked with third-party contractors to

ensure all unique and substantially different comments in the letters were coded, entered into a database, incorporated into public concern statements, and addressed in this appendix.

Each unique and substantially different comment within a letter was assigned a comment number, subject code, and category code to enable grouping of similar comments for the report described in step 5. The coding structure and coding of each comment letter can be found in the project record. For example, a comment desiring more motorized loop trails to provide for a better recreational experience would be coded as:

- Comment Number: 1 (1st comment coded in the letter)
- Subject Code: ALT (Alternatives)
- Category Code: 100

Step 3: Form letters were identified and filed in the project record. Regardless of the number of copies received or the number of signatures, one copy of each form letter (identified as the master form letter) was analyzed for unique and substantially different comments and that one letter followed step 2 of this process. The other letters were identified as being associated with this master form letter.

Step 4: Each of the more than 305 unique and substantive comments that were coded were entered into a database, verbatim.

Step 5: Reports were produced from the CARA database that contained the coded comments and a report was generated that grouped similar comments. The IDT then drafted PCs that summarized each group of like-comments.

Step 6: The Forest Supervisor and IDT were provided a report of the PCs to assist them in discussing changes to the draft plan and DEIS as well as the original comment letters. See Appendix B for a list of PCs and associated comments.

Step 7: After reviewing the PCs and comments, the Forest Supervisor met with the IDT to clarify questions, discuss comments, and direct changes to be made for the EIS and draft plan. In addition, the IDT responded to all the PCs and these responses are included with the associated PCs in Appendix H of the FEIS.

Appendix B – Concern Statements and Associated Comment

Below is the initial concern statement and associated public comment listed in CARA. The tracking number for each coded comment follows the public comment in brackets. During the development of the FEIS Appendix H, some concern statements were rewritten or broken down into subparts by IDT members.

Concern: [Seq#1] These comments are supportive of forest plan direction, such as an all-lands approach, restoration of longleaf pine and increased prescribed burning. [ID#1]

Associated Comments: [Seq#1]

Here's another resent poem to go with that comment. THE CLEAR CUT Don't bother to save the box the woods came in. Those directions printed on the back...they fabricate the things with no consideration of a creek's course or dogwoods blooming. Plus this future they're planning for: don't go thinking you're in it. By time these trees grow tall you'll be long gone. Death'll pick you up in his Ford Econoline. Already he's got the two dead dogs, road kills, and you'll squat beside them, 'cause the woman hitchhiker is riding shotgun. B. [2-2]

Here's a poem from last month. The Way...by Wm. Baldwin July 2015 The way God carves it: running rivers through it, pushing oceans on it, having comets chew out chunks, then lastly sending us with predatory hands, it remains the land, the land, though softened by neglect, inviolate. It's us who're rounded smooth-- or broken open, us robbed of speech and deepest feelings. Afraid to see, to take, afraid to use the beauty God has put for our enjoyment, we stand and clap at what's high sounding, then ignore the greenest places. [2-3]

October One by Wm. Baldwin Oct. 1, 2015 Yellow road daisies, purple asters, marauding honey bees, and needy butterflies. Seems Fall is busting in all over. Burning with the cool what's green, all promises going to seed, blazing beauty shrinking t'wards a winter core. And the more we praise these comfort days, the more they slip away to form another Spring. [10-1]

Elegy by Wm. Baldwin Sept. 30 2015 Splashing, bogging, I carry this marsh in my own two hands, hands birthed of sinewed memories. As he said: "What they tell you's true. A man who's drowning will come up three times. Then his pack of Luckies popped to the top. Went around and around. Around in a circle. That's all we found." [10-2]

I like the way the planning process is outlined on the website [13-1]

USFS: I thank you for the opportunity to express my concerns on the FMNF Draft Revised Land Management Plan. The efforts that you have obviously exerted is duly recognized and greatly appreciated. The presentations of the plan that I have attended were also well prepared and staffed. Thank you. [14-1]

USFS: I thank you for the opportunity to express my concerns on the FMNF Draft Revised Land Management Plan. The efforts that you have obviously exerted is duly recognized and greatly appreciated. The presentations of the plan that I have attended were also well prepared and staffed. [15-1]

28. General Comment: TNC supports the inclusion and emphasis of stump and root mound management for the benefit of associated wildlife species [16-27]

The Francis Marion and Sumter NF's are prominent features in South Carolina and play a significant role in our state's economy, environment, and society. I am sure our citizens appreciate the opportunities that you have provided for all of us to be a part of the planning process. As you are aware, private landowners own most of the state's forest land and provide around 96% of the wood supply that keeps the forest industry solvent and provides about 90,000 jobs for its citizens. State and federal government also play a significant role in the forestry community by supporting the forestry cycle from land ownership, timber production, and ecosystem services to wood product manufacturing and its many jobs. [17-1]

Adaptive Management: I like the adaptive management approach of consistently assessing progress and taking corrective action when progress is lacking. Note comment below in which I advocate additional focal plant species for monitoring. [18-4]

We support the recreational goals. [23-1]

We support everything suggested for the RCW, and STKI [23-3]

Comments on the 2015 Draft Francis Marion Plan Revision Jean Everett, PhD 10 November 2015 I preface my remarks by saying that I have been working in the Francis Marion National Forest for more than 25 years, as a frequent visitor to the Francis Marion, as a college instructor who routinely takes classes into the Francis Marion, and as a relatively frequent contractor for rare plant and rare plant habitat surveys in the Francis Marion. I also note that my comments are entirely my own, and although part of my commitment to service, do not represent the College of Charleston in any way. Overall, I am impressed by the plan revision. The plan seems comprehensive, cleanly written, well thought out and well organized. I am impressed by the plan to bring in more community partners, and by the emphasis on developing "fire adapted human communities". I think that is the only way the FMNF can survive the expanding development of the region. I'm also impressed by the ecosystem model that has revised previous, valuable, models to include LiDAR data and other ecological information not previously available. [24-1]

Please see attached PDF of my comment on the Francis Marion National Forest Draft Revised Land Management Plan. John A. Brubaker November 10, 2015 comment on FRANCIS MARION NATIONAL FOREST DRAFT REVISED LAND MANAGEMENT PLAN, Berkeley and Charleston Counties, South Carolina As proposed the FRANCIS MARION NATIONAL FOREST DRAFT REVISED LAND MANAGEMENT PLAN, Berkeley and Charleston Counties, South Carolina, could move the Francis Marion away from ongoing degradation and toward sound environmental stewardship. Detailed plan elements to achieve that goal are excellent. The need to implement the plan and the desired goal are well illustrated on p. 103, Chapter 2. 2.4.4 Santee Zone: Through the ecological function of this area is still relatively intact, (and likely nearly, if not totally ecologically salvageable) increased development in the rural communities surrounding the Francis Marion means the national forest land managers must consider how demand for ecosystem goods and services benefits from ecological process on the forest are likely to increase, while environmental stressors are likely to have an adverse effect on the quality and quantity of goods and services it provides. In addition to the benefits people receive from the natural environment, forest management must consider how increased development along the WUI will affect the demand for infrastructure and fire management on the Francis Marion, while identifying creative strategies to meet these growing needs in the face of shrinking appropriated budgets. The above paragraph would drive management forest wide. [25-1]

The Southern Group of State Foresters (SGSF) appreciates the opportunity to offer these comments on the development of the Forest Plan for the Francis Marion National Forest. SGSF represents the

interests of the State Foresters from across a 13-State area of the southern United States, including the South Carolina Forestry Commission (SCFC). The SGSF mission is to provide leadership in sustaining the economic, environmental, and social benefits of the South's forests, both public and private, and thus we recognize the importance of the forest plan revision process in incorporating the full suite of forest values desired by the public. [26-1]

We first would like to echo our support for the comments submitted by the SCFC on plan revision, which we have included as an attachment to this letter. As one of our member organizations, the SCFC comments include the on-the-ground expertise relative to the landscapes in question, as well the knowledge of private forest landowner desires and forest products markets in the region to complement our broader recommendations. In addition to supporting SCFC comments, SGSF would also like to take this opportunity to comment more generally on forest management trends across the South and how they relate to this forest planning process. [26-2]

In light of the Forest Service's Congressional mandate to manage the National Forest System for multiple uses, SGSF believes that a forest-wide planning document should inherently recognize and manage for the full suite of benefits desired by the public. Our National Forests are valued for many things, from wildlife habitat to local job creation, and from recreation opportunities to abundant clean water. All of these aspects of forest management and many more can and should be captured in the forest planning process. When looking at the themes your draft Forest Plan lays out in section 1.6 - Future Direction of the Forest, it is clear the forest is keenly aware of the vast array of interconnected services the forest provides. [26-5]

The forest planning process is essentially about setting up a broad framework for designation of what activities would be appropriate on a given landscape, under which subsequent project development can occur. Active forest management is appropriate and necessary on a substantial portion of the National Forest System, including the Francis Marion NF given the goals and themes laid out in this draft Forest Plan. We applaud the USFS for recognizing the challenges facing the forest associated with reducing fire risk, creating and maintaining quality wildlife habitat, promoting forest health, and more, and urge you to remember the essential role that active forest management plays in addressing those challenges as well as supporting local economies. Thank you for the opportunity to weigh in on Forest Plan revision. We would once again like to emphasize our support for the comments the SCFC has submitted in your process, which provide the necessary specificity to our broadly stated interests in this letter. [26-7]

I am pleased to offer the following comments on the Draft Management Plan for the Francis Marion National Forest on behalf of the directors, staff and membership of Friends of Coastal South Carolina [27-1]

Friends of Coastal South Carolina is grateful for the opportunity to comment on the draft management plan for the Francis Marion National Forest. We extend our appreciation to the Forest Service staff for their hard work and diligence in the planning process. We also appreciate the tremendous amount of community input that has gone into this plan. Our organization was in fact born out of the unique partnership forged between the Francis Marion and Cape Romain National Wildlife Refuge by former Cape Romain manager George Garris over 20 years ago. This unique partnership resulted in the Sewee Visitor and Environmental Education Center, and soon after the creation of our organization to build and administer a robust environmental education program for the forest and refuge. These programs have grown to conduct over 15,000 interactions with students in Charleston, Berkeley and Dorchester Counties each year. Through the years our organization has also grown as a Friends group to provide many other forms of support to the forest and the three national wildlife refuges with which we partner [27-2]

Although we remain strongly rooted in our commitment to environmental education we are equally committed to engaging citizens in the stewardship of our coastal natural resources. In addition, educating the adult public about the contribution the forest makes to our quality of life in the Lowcountry (and to our public health through improved air and water quality) is key component of our mission. Because of this we are delighted to see the emphasis the draft plan places on the importance of the forest for recreation and respite from our increasingly urban environment; something that is becoming very rare in our world today [27-4]

We would like to offer our full support for the Forest Service's goals of longleaf pine restoration, stream and wetland restoration and prescribed burning. All critical components of restoring and maintaining the forest critical ecosystems, and ensuring these treasured resources remain vibrant and healthy for future generations. Respectfully submitted, Grace Gasper Executive Director [27-7]

I wanted to express my support for the goals of the draft management plan for the Francis Marion National Forest, especially longleaf pine restoration, stream and wetland restoration and prescribed fire. [28-1]

Francis Marion and Sumter National Forest All Units Attn: Mary Morrison 4931 Broad River Rd. Columbia, SC 29212-3530 Submitted November 12, 2015 via email to: fmplanrevision@fs.fed.us Dear Francis Marion Forest Planning Team, Please accept these comments on behalf of Defenders of Wildlife (Defenders) in response to the Draft Revised Land and Resource Management Plan and Draft Environmental Impact Statement (DEIS) for the Francis Marion National Forest. Defenders is a national non-profit conservation organization founded in 1947 focused on conserving and restoring native species and the habitat upon which they depend. We submit the following comments on behalf of our more than 1,200,000 members and supporters nationwide, including more than 8,000 in South Carolina. [29-1]

Ecosystem evaluation It is good that the Forest is using ecological units based on a national framework. This will help promote landscape scale conservation through cooperation with other land managers. [29-14]

The approach used to evaluate effects on ecological systems and species diversity appears to be rigorous and objective through its use of key characteristics, indicators and ecological sustainability scores. It is also helpful that the process is one used by TNC, which should facilitate an all lands approach to landscape scale conservation. It is appropriate to focus on ecosystems across the Forest, and to look at the combined effects of the different management areas in which they occur. [29-16]

NOAA's National Marine Fisheries Service (NMFS) reviewed the Francis Marion National Forest Draft Environmental Impact Statement for the Revised Land Management Plan (EIS), dated August 2015, prepared by the U.S. Department of Agriculture (USDA) Forest Service. The Draft EIS describes and analyzes three alternatives for managing the 258,942 acres of land and associated resources within the Francis Marion National Forest in Charleston and Berkeley Counties. The Final Forest Plan resulting from the Final EIS analysis will guide all natural resource management activities, such as prescribed burning, habitat restoration, and public recreational use, in Francis Marion National Forest. [31-1]

As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Act. The Santee River, the Intracoastal Waterway, Lake Moultrie, and the Cooper River bound the Francis

Marion National Forest. Because land use surrounding the forest is rapidly changing from a forested, rural landscape to an urban environment, the USDA Forest Service is revising the 1996 Land Management Plan, which focuses primarily on recovery from Hurricane Hugo. The Draft EIS presents three alternatives, each focused on achieving ecosystem restoration through vegetation management, prescribed burning, and enhancing wetland connectivity: ? Alternative 1 represents no change from the current forest plan enacted in 1996. ? Alternative 2 (Preferred Alternative) includes converting select loblolly pine stands to longleaf pine forests, improving hydrologic function of wetlands, and restoring rare communities and old growth forests. ? Alternative 3 is a variation of Alternative 2 and considers less prescribed burning near communities and major roads. [31-3]

Re: Francis Marion National Forest Management Plan Revision Charleston and Berkeley Counties, South Carolina FWS Log No. 2013-R-0310

Dear Mr. Lint: The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Revised Land Management Plan for the Francis Marion National Forest, Berkeley and Charleston Counties, South Carolina. Our comments are provided in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and the National Environmental Policy Act of 1969 (42 United States Code 4321 et seq.). The Draft Revised Land Management Plan (Forest Plan) will provide broad planning for the Francis Marion National Forest (FMNF) within the context of the greater landscape for the next 10-15 years. The last management plan focused on managing and restoring the FMNF post Hurricane Hugo, which ravaged the forest in 1989. The new Forest Plan will be developed under the 2012 forest planning rule, which places greater emphasis on public involvement. Since the Forest Plan revision began in 2013, the FMNF has relied on collaboration with local partners, private landowners, Federal and State agencies, and other organizations. According to Forest Plan, the Forest Service has developed a land management plan to guide the general management direction of the FMNF during the next 15 years. The document, developed under the 2012 Planning Regulations outlined in 36 CFR 291, is a second revision of the original Forest Plan prepared in 1985 under the National Forest Management Act. The purpose of the Forest Plan is to guide future projects, practices, uses and protection measures to assure sustainable multiple-use management of the FMNF. This plan supports an adaptive management approach, which emphasizes checking results as projects are implemented and making the plan more adaptable to changes in social, economic, and environmental conditions. [33-1]

RE: Francis Marion National Forest Draft Revised Land Management Plan and Draft Environmental Impact Statement, SC; CEQ Number: 20150215

Dear Mr. Lint: Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) has reviewed the subject Francis Marion National Forest Draft Revised Land Management Plan and Revised Draft Environmental Impact Statement (DEIS). The U.S. Forest Service (USFS) is the lead Federal agency for the proposed action. The proposed action by the USFS is to revise the 1996 Francis Marion National Forest Revised Land and Resource Management Plan ('forest plan'). The area affected by the proposal includes nearly 260,000 acres of Francis Marion National Forest ('Francis Marion'), which is located Berkeley and Charleston Counties north of Charleston, S.C. The forest plan guides all natural resource management activities on the Francis Marion to meet the objectives of Federal law, regulation, and policy. The proposed action would also effect a wide range of socioeconomic factors as they relate to natural resources. The attachment includes the EPA's DEIS detailed comments and recommendations pursuant to our review of the revised draft forest plan (Please see the attachment). [38-1]

My figure for 2014 timber earnings were taken from the Francis Marion & Sumter National Forest FY 14 Fact Sheet Larry sent. My \$426,041.50 figure was arrived at by adding Returns to Berkeley & Charleston Cos. from that fact sheet. That was my error. The value I should have used is what was realized from either 40.5 MMBF Harvest or 56.9 MMBF. The fact sheet discloses neither which

represents actual net proceeds nor what those earnings were. It is not possible to determine or even approximate income from board feet. [41-2]

I am writing today on behalf of the South Carolina Division of the Appalachian Society of American Foresters to comment on the draft revised land management plan for the Francis Marion National Forest. The Francis Marion National Forest is a treasure for South Carolina. The Division commends the efforts of the US Forest Service and specifically the team that crafted this revised draft managed plan. The team has done a skillful job in drafting a management plan to address the various ecosystems present on the forest within the obvious financial constraints that had to be considered. [44-1]

The South Carolina Division of the Appalachian Society of American Foresters represents a diverse membership of forestry professionals throughout the state. Comments provided by the Division were approved by the Executive Committee of the South Carolina Division, but may not represent the views of every member of the Society. The leadership of the South Carolina Division has encouraged our members to carefully review the draft revised land management plan and provide comments directly to the US Forest Service. Thanks you for your diligent work to conserve our natural resources and the Francis Marion National Forest. [44-5]

Concern: [Seq#2] The FM NF should address Essential Fish Habitat because management activities on National Forest can have an indirect impact on these habitats that are critical to the production of oyster, shrimp, crabs, etc [ID#2]

Associated Comments: [Seq#2]

While 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 Draft EIS does not include a determination by the USDA Forest Service on whether the proposed management plan would adversely affect EFH [50 CFR 600.920(e)(3)]. [31-2]

*Essential Fish Habitat in the Project Area Portions of the Francis Marion national Forest include tidal freshwater palustrine forests, tidal freshwater wetlands, estuarine emergent wetlands (salt marsh), tidal creeks, intertidal and subtidal flats, and unconsolidated bottom. The South Atlantic Fishery Management Council (SAFMC) identifies these habitats as EFH for penaeid shrimp, including white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecus*), and/or estuarine-dependent species of the snapper-grouper complex. Salt marshes are EFH because larvae and juveniles concentrate and feed extensively and shelter within these habitats. As a consequence, growth rates are high and predation rates are low, which make these habitats effective nursery areas. The SAFMC provides additional information on EFH and its support of federally managed species in Volume IV of the Fishery Ecosystem Plan of the South Atlantic Region1. [31-4]*

Comments on Alternatives Alternative 2 and 3 include measures to restore hydrology within freshwater wetlands, and the NMFS recommends this management strategy be carried over to tidally influenced wetlands. The Draft EIS states there are approximately 6,546 acres of tidal waters on the Francis Marion and 179 miles of intermittent and perennial streams receiving tidal influence. The designation of these habitats as EFH is not discussed within the Draft EIS and the actual amount of EFH within the Francis Marion is likely greater because these numbers are based on using SC Highway 17 as the saltwater/freshwater boundary and do not consider tidal freshwater wetlands designated EFH. It is unclear if the use of existing dikes to control saltwater influx, as described above, would

further impair EFH. The Magnuson-Stevens Act requires the USDA Forest Service to consult the NMFS should any of these projects adversely affect EFH. In addition, some projects could enhance EFH. For example, the Draft EIS discusses bridging portions of the Tuxbury Horse Trail (an old rail bed) to restore breeding habitat for salamanders; however, portions of the trail restrict flow within EFH. Restoring flow to EFH by bridging or culverting old rail and timber roads, such as the Tuxbury Trail, should also be a management strategy. In addition, restoring impounded salt marsh (e.g., old rice culture fields) would convert these impaired habitats back to free-flowing marsh habitat. 1 Available at <http://safmc.net/EcosystemLibrary/FEPVolumeIV> 2 In summary, the NMFS believes the Final EIS should include information regarding the designation and importance of EFH within the Francis Marion National Forest, the need to consult with the NMFS when any action may adversely affect EFH, and strategies for eliminating restrictions and impairments to EFH. With the exception of using dikes to limit saltwater flow, the restoration of freshwater wetlands within the Francis Marion National Forest would likely have indirect beneficial impacts to EFH by improving the flow of nutrients and organic matter; however, there are opportunities to directly restore and enhance EFH within and adjacent to the Francis Marion. The USDA Forest Service should include these goals in Alternative 2 and 3. The NMFS is available to assist the USDA Forest Service in identifying and designing EFH conservation and restoration projects. [31-6]

Concern: [Seq#3] *The FM NF should promote the importance of working forests because they provide multiple benefits to the public like reducing the risk of insect outbreaks that could affect adjacent private forests. [ID#3]*

Associated Comments: [Seq#3]

I do wish that regardless of the plan, that the federal government would spend an equal amount of money advertising the benefits of a "working forest" in PSA's including regular timber harvests and the benefits to society surrounding that essential function as they do in their promotion of recreation and visitation. [13-2]

Active forest management through timber harvests can help reduce the incidence of forest pest outbreaks as well. Controlling stand density and replacing over mature stands with vigorously growing seedlings are two very effective strategies to help prevent attacks from southern pine beetles and other pathogens. Maintaining the health of stands of trees on the Francis Marion is important not only for the sake of this ownership, but it also helps ensure that pest outbreaks do not begin on the Forest and spread to adjacent private land. [17-6]

3d) Controlling effects of insects and disease. Native insects and diseases have generally remained at endemic levels and not caused significant problems over the last few years. Southern pine beetle populations have generally been low, with the exception of a small outbreak during 2002. ? Insect invasion is inevitably caused by tree stress. In the beginning primarily a problem in overly dense loblolly plantations, it is now noted occasionally in overly dense longleaf plantations. Conversion to the appropriate tree here, longleaf, is a positive step. Exchange of one overly dense species for another is of little value. 200 longleaf is max. over much of the Forest. Too high for some, including savannas. [25-11]

We would be pleased to see the importance of the forest as an environmental education classroom mentioned in the plan; along with Friends of Coastal South Carolina's long-time partnership with the forest and our organizations contribution to connecting thousands of local children each year with the ecosystems of the forest. We believe acknowledging the value of environmental education is critically

important because we must have a next generation who understands the importance of the forest and is invested in its ongoing protection. [27-5]

Concern: [Seq#4] The Francis Marion National Forest should restore the hydrologic function of freshwater wetlands because it improves habitats for freshwater aquatic species and at-risk amphibians. The Francis Marion National Forest should weigh the impacts of removing dikes because they may be limiting saltwater influx into freshwater habitats, such as those dikes within the lower Santee River. [ID#4]

Associated Comments: [Seq#4]

Freshwater Wetlands In addition to habitats designated as EFH, the Francis Marion National Forest is rich with freshwater wetlands providing nutrients and organic material to downstream estuaries and affecting the water quality of those estuaries. Past modifications, such as ditching and road construction, have altered water flows in and out of forested wetlands, riparian areas, and streams. To address these issues, the USDA Forest Service is proposing to restore hydrology in wetlands, which should benefit downstream EFH. Alternative 2 and 3 include restoration of wetlands, floodplains or riparian areas to benefit at-risk species within three target watersheds, Guerrin Creek, Turkey Creek, and the headwaters of Wambaw Creek. Specific activities include plugging ditches and adding culverts under dikes to restore water flows. However, existing dikes may be used to limit saltwater influx where hydrologic modifications are causing saltwater entry beyond recent historic conditions, such as those within the lower Santee River. Hydrologic restoration would improve habitats for freshwater aquatic species and at-risk amphibians. [31-5]

Concern: [Seq#5] The Santee Experimental Forest should be put under a management strategy compatible with the surrounding national forest land because it is a degraded site in the heart of the Francis Marion National Forest. [ID#5]

Associated Comments: [Seq#5]

1.5.2 Social Benefits ? Somewhat alluded to under item 3, the number 1 outdoor activity, passive contact with nature should be included as a stand-alone item. ? In reality the Santee Experimental Forest is a badly degraded land in the heart of the Forest. It should be eliminated, and that land put under a quality management strategy including prescribed fire. Any qualifying research projects could be carried-out on appropriate sites within the Forest under special use permit. p.7. 1. It is noteworthy that visitors are international. [25-7]

DC-Z-Santee-0. Desired Conditions for Santee RIZ DC-Z-Santee-S-1. Santee Experimental Forest. The Santee Experimental Forest is a degraded site in the heart of the Francis Marion. I propose that the area be put into a management compatible with surrounding forest. [25-34]

Concern: [Seq#6] Plan components should properly protect the ecological conditions and provide ecological integrity necessary for a viable population of at-risk species because delegating the protection of these species to project planning is not consistent with the planning rule and NFMA. [ID#6]

Associated Comments: [Seq#6]

Ecological integrity We recognize that the Francis Marion National Forest, as an "urban forest" with extreme restoration needs, faces distinctive challenges in implementing the 2012 Planning Rule's requirements for ecological integrity of ecosystems. We appreciate the efforts to restore natural vegetation and fire regimes both historically and as envisioned by the draft revised forest plan. While we recognize that there may be reasons that integrity cannot be fully achieved, that does not mean the Forest can refrain from doing what it has the legal authority and organizational capacity to do. The Planning Rule does not require that ecological integrity occur; it simply requires that plan components provide for integrity. Our comments are directed towards meeting that requirement with the revised plan. Two broad areas that we do not feel the Forest has adequately addressed are the ability to restore fire as an ecological process to its natural range of variation across the Forest, and the effect on ecological integrity of timber production on the majority of the Forest. If ecological integrity cannot be achieved, then it is imperative that the Forest Service take whatever actions it can legally take to promote it, and refrain from discretionary actions that detract from meeting this goal. [29-3]

particular problem occurs in OBJ-F-1(k), which concerns at-risk species. The "management strategy" includes these two provisions: b. Incorporate at-risk species needs into project planning and implementation, where needed; c. Ensure project activities on the forest do not harm locations for at-risk species; The forest plan is the place to define at-risk species needs in terms of ecological conditions necessary for a viable population. This cannot be delegated to project planning consistent with the Planning Rule and NFMA. The only means of ensuring harmful activities do not occur is by using mandatory standards. [29-6]

Plan components There are some appropriately specific desired conditions (for example a 1-3 year fire return interval, and habitat/population conditions specified for red-cockaded woodpeckers and frosted flatwoods salamanders). However, many plan components that are labeled as desired conditions do not meet the definition because they are not "specific enough to allow progress towards their achievement to be determined." If they are plan components that are necessary to provide ecological conditions for at-risk species, they should be rewritten to meet the regulatory requirements for specific desired conditions. Otherwise, they should be relabeled as goals, and separated so the actual desired conditions that will drive plan implementation can be more readily seen. [29-7]

There is also a tendency to defer the determination of locations or habitat requirements until "project-level planning," for example, "the areas that support at risk species," and "the ecological conditions needed to support resilient and sustainable populations." Use of the term "sufficient" in a plan component related to diversity requirements indicates that there must also be plan components that provide criteria for what is sufficient. Without at least providing criteria for these future determinations, this approach amounts to including no plan components that would meet species-diversity requirements. Similarly, the plan should provide guidance for site-specific decisions about energy generation and transportation planning (which, according to the "supporting information," it explicitly does not). [29-8]

The Forest improperly takes a unilateral position on determining recovery needs, and the draft plan mistakenly suggests that consultation to prevent jeopardy on projects may take the place of contributing to recovery at the plan level (G36). If the Forest wishes to authorize deviation from the Recovery Plan using plan components, it must obtain the concurrence of the Fish and Wildlife Service through a Section 7(a)(1) conservation review of the forest plan that this will contribute to recovery of the species. [29-33]

The DEIS also indicates that the forest plan relies inappropriately on ESA consultation at the project

level since, "T&E species would be addressed and conserved through the site-specific biological assessment process." The NFMA requirement is that forest plans include components that ensure that projects promote recovery of listed species, and that recovered status is maintained when the protections of ESA have been removed. Plan components cannot rely on an ESA process to meet its NFMA mandate. [29-34]

Concern: [Seq#7] The Forest Plan should prescribe more burning because there is substantial local support. [ID#7]

Associated Comments: [Seq#7]

In conjunction with Cape Romaine National Wildlife Preserve, The Santee Coastal Reserve, Hampton State Park, the Santee and other protected waterways in and around the footprint, and lands within and around the footprint protected under The Nature Conservancy (TNC) ownership and private lands protected by TNC and other covenants, the Francis Marion is part of a substantial continuum of properties protected for their ecological and archeological value. The area, officially designated as the Sewee to Santee Corridor, is the largest and most significant protected natural on the south Atlantic coast. The failure of any of the those vested shareholders listed above will unavoidably adversely affect the ecological integrity of the entire region. By investment in the above local residents have joined the Nation and signed-on in recognition of the value of the resource and commitment to maintaining and improving the area as a natural treasure not to be compromised. Long standing area groups formed to preserve and protect the area. Other groups who share that commitment are being added with increasing frequency. The growth of the movement is in no small part driven by recognition that some area municipalities and communities noted as partners in the Draft Management Plan display an inclination to favor development over environmental stewardship. While not necessarily the position of all municipalities, communities, and their officials, maintaining and preserving this natural heritage is the majority opinion of residents. In support of that opinion I offer the results of a petition in support of alternative 4 of the Francis Marion National Forest Prescribed Fire Committee Report, April 27, 1998. Volunteers canvassed door-to-door throughout the Francis Marion in the fall and winter of 1998 with a questionnaire concern prescribed burning on the forest. I mailed Dr. Jerome Thomas, Forest Supervisor, Francis Marion and Sumter National Forests, signatures of 327 forest residents on December 2, 1998, in support of alternative 4, the treatment that called for the greatest amount of burning. Other signatures, approximately 100, gathered by a Huger resident were to be sent separately, but I don't know the status of that mailing. To my knowledge no one supported any of the other alternatives, and only two (2) residents declined support. By today's population 327 is a relatively small number, but in 1998 it was certainly a statistically valid opinion of the population at that time. I am not aware of any comparable data designed to determine the will of Forest residents concerning the area's management. [25-4]

2.3.3 Desired Conditions for Management Area 2 Emphases in Management Area 2 ? Please refer to the paragraph on resident support for fire on the Francis Marion. That is not to say that burning in this urbanized area is not w/o issue, but those do not rise to the level that warrants treating the area differently than any other. 2.3.4 Objectives that Apply to Management Area 2 [25-29]

Concern: [Seq#8] The Francis Marion National Forest should be coordinating with local governments and partners to: Achieve prescribed burning objectives; Maintain infrastructure, such as roads and recreation facilities; and Identify specific areas where habitat connectivity can be

developed to achieve desired conditions. [ID#8]

Associated Comments: [Seq#8]

4. Page 14: We strongly support the All Lands concept put forth in the Plan. Working with adjacent landowners and partner organizations is essential to meeting the Plan's targets for FMNF ecological systems. [16-3]

Audubon would like to participate more fully in this planning process, and would be happy to have our forester meet to discuss our bird-friendly recommendations. We have provided outreach in the SE to over 260 foresters, so maybe some of your staff have participated? If not, we would be happy to make a specific presentation and have a discussion. This resource is a high priority for us and an active partnership with you is similarly a high priority. [23-7]

3f) Increasing pressures for recreation opportunities in challenging economic times. As the populations of Charleston and Berkeley Counties increase, the backlog maintenance for recreation infrastructure, currently estimated at \$450,000, exceeds current funding capabilities. ? The cost of overdevelopment may be insolvable, especially the presently employed pyramid process that is dependent upon some future, larger, population to satisfy the debts of current decision makers. Those shortfalls should not influence National Forest management. ? THE GREATEST THREAT TO THE FRANCIS MARION COMES FROM SURROUNDING POPULATION CENTERS! Charleston and Berkeley must appreciate the value of the close proximity afforded by this National asset, The Francis Marion National Forest. Nearby counties and associated municipalities should do all possible to facilitate best management of the resource by: On properties adjacent to the Forest adopt building codes that insure that structures and other developments are compatible with practices, especially fire, necessary to maintaining a healthy forest. ? Limit infrastructure intrusion into the Forest footprint, in particular street and roads. ? Recognize and publicize the value of the amenity, and keep citizens informed of actions essential to the Forest's well being. [25-12]

Theme 4: Share operational and planning resources among partners; keep ongoing collaborative efforts vibrant and develop new ones. ? STRONGLY AGREE [25-13]

We also appreciate the emphasis placed on strengthening relationships with the communities surrounding the forest. Citizen engagement and support will be critical to the Forest Service's success in implementing many aspects of this plan, especially the goals for prescribed burning [27-3]

There is also a substantial amount of attention devoted to cross-boundary coordination, especially with regard to fire and recreation. This includes joint management opportunities for habitat 11 connectivity, but the plan is not specific enough about this. It should identify specific areas that are important to this connectivity and will be managed this way. [29-45]

Concern: [Seq#9] The Forest Plan has some major faults, particularly silvicultural and financial costs of restoring longleaf pine in an increasingly urban environment. [ID#9]

Associated Comments: [Seq#9]

With that being said, the plan is what I consider "warm and fuzzy", being great for the believing public but short on science and financial justifications. I have spent almost 40 years watch my husband (John T. Jamison) practice forestry in the Francis Marion and surrounding counties; additionally my family has lived within the bounds of the National Forest for over 35 years. This

experience and vigilance has left me agreeing with my husband on two major areas of concerns about this plan, silvicultural and financial. [14-2]

The encroaching urban and associated housing developments simply will not allow smoke to be a continuing part of their environment. [14-5]

Thank you. With that being said, the plan is what I consider "warm and fuzzy", being great for the believing public but short on science and financial justifications. I have spent almost 40 years practicing forestry in the Francis Marion and surrounding counties; additionally my family has lived within the bounds of the National Forest for over 35 years. This hands-on experience and vigilance has left me with two major areas of concerns about this plan, silvicultural and financial. Silviculture is the practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values. Our forest is what it is today because of the efforts and planning of Forest Service personnel; you have done a great job. The fact that you have now selected an arbitrary point in time to revert this management plan to a long ago era, baffles my knowledge of silviculture. [15-2]

The existing 55,000 acres of Longleaf is currently a constant struggle to maintain with burning restrictions, air quality and urban interface [15-3]

Concern: [Seq#10] Technical edits to the Forest Plan and associated DEIS should correct typographical errors. [ID#10]

Associated Comments: [Seq#10]

Hurricane Hugo hit the coast of SC in September 1989. Please correct the cover page where a picture of the devastation is incorrectly captioned as 1987. [5-1]

THIS PLAN IS TOTALLY ARTIFICIAL AND FIGHTS NATURE. THE OBSOLETE BIBLIOIGRAPY YOU USED LED THE PLANNERS ASTRAY. PLEASE DONT USE 1981 INFORMATION INS A 2015 WORLD OF REALYT [11-1]

2. Page 3: TNC can help provide an updated protected lands layer to improve the "Private Conservation Easement" display on this map. 3. Page 7: Correct bullet point #5 to read "Sewee Longleaf Conservation Cooperative [16-2]

29. General Comment: You may want to consider a more colorful, people-using-the-forest photo on the front cover of the plan. The sepia tones look a bit depressing. We love the wonderful color photos shown throughout the plan [16-4]

7. Page 20: We suggest clarifying that Talbot Terrace is also known as Cainhoy Ridge. The latter reference is more commonly known. [16-7]

15. Page 43: 2.3 Desired Conditions of Management Areas-"Desired conditions, objectives and management approaches are different in MA 2 than those in MA 1..." A further statement should be inserted into this paragraph declaring that "when and where feasible, prescribed fire will be employed as the best, most economical management method in MA 2. If prescribed fire is deemed to be unacceptable, then other means of managing fuels will be explored. "Page 46: The table entry for DC-MA-1-9 (Rivers and Streams) appears in error, as one would assume all Proclamation Area values to exceed those of the Administrative Area. [16-14]

26. Pg 152. Instead of using the words "South-wide initiative" Use "America's Longleaf Restoration

Initiative" [16-25]

Pg 3 - FMNF Map does not depict numerous conservation easements in both Charleston and Berkeley counties held by Lowcountry Open Land Trust and other conservation groups - need an updated protected lands layer Pg 10 - Theme 4 - Last sentence does not read well [21-1]

Pg 114 - G24 - Run on sentence. Rewrite. [21-2]

Pg 11 - 4d - Also, consider that growth could be mitigated and buffered if additional inholdings and adjacent parcels could be placed under conservation easements, thereby limiting high density developments. Pg 11 - 5a - "when the forest may not be able to achieve desired conditions" - continue sentence by adding "or when desired conditions may need to be evaluated and/or shift" [21-4]

Pg 47 - Map - Change to distinguish upland vs wetland colors. Broad Forested Swamps color selection is too close to Upland Longleaf Pine Woodlands. [21-10]

P 85 - petty??? I don't think Compartment 96 is in the Wando RIZ. It's north of Steed Creek Road. Most of the orchids to the south, in the Wando RIZ, have been lost to lack of fire, and will require intensive fire restoration to return. [24-18]

Cover, Draft Revised Management Plan, USDA Forest Service, Region 8, Francis Marion National Forest, R8-MB 146A, August 2015. ? The 2015 photograph on this cover is more representative of the condition implementation of the proposed plan might achieve than it is of the majority of that land today, though it is a good representation of much of the core burn units throughout the Francis Marion Forest. [25-5]

1.6.1 Emerging Themes Theme 1: Maintain or restore the Francis Marion's unique landscapes and features. 1b) Maintain or restore recreational settings, wilderness, and cultural landscapes or sites. Some settings, areas, and sites have been impacted by recreation use; historical exclusion of fires; non-native invasive plants and animals; air pollution; aquatic habitat degradation; illegal use; and climate change. ? I suspect that air pollution refers to carbon emissions from prescribed fire. That is a matter caught-up in the larger battle over mainly Midwestern power plant emissions and northeastern automobile emissions. The accuracy by which woods fire emissions are generated are a matter of debate. Regardless, most of the smoke near the ground is from particles too large to cause disease in humans and other higher mammals. The smaller particles are nearly all carried far aloft as prescribed fires are carried out on prescription days with adequate carrying winds. The welfare of our precious forest should not be compromised to satisfy the larger, [25-9]

*Map of Francis Marion National Forest, page 9. * Georgetown Co./Charleston Co. boundary mislabeled - Should be Georgetown Co./Berkeley Co [36-1]*

Concern: [Seq#11] These comments are not specific or not relevant to changes in the Forest Plan Direction [ID#11]

Associated Comments: [Seq#11]

STOP THE MAULING OF NATURE. JUST SO YOU FS GUYS CAN MAKE SALARIES - THATIS YOUR FOREMOST CONCERN TO GET MORE AND MORE AND MORE MONEY FOR YOURSELVES. I FAVORNATURE OVER MAULIGN BY THE USDA. THIS CMOMENT IS FOR THE PUBILC RECORD. PLEASE

RECEIPT. [4-3]

Comments on Draft Revised Land Management Plan for Francis Marion National Forest Jeff Glitzenstein PhD, 9509 Liska Drive, Tallahassee, FL 32305 (Research Associate / Beadel Fellow, Tall Timbers Research Station). jeffglitz@aol.com, 850-421-5779 I am submitting these comments as a professional botanist/plant ecologist with ~ 35 years of experience as a contractor/cooperator with USFS, USFWS, USPS, SCDNR, GADNR, FLDEP, FNAI, Westervelt Co., NatureServe and numerous private landowners and consultants in Francis Marion NF and other areas within the longleaf pine ecosystem, southeastern USA. My CV is posted on the Tall Timbers Research Station web site. [18-1]

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To who it concerns: I am the Coastal Plain Region Geologist for the South Carolina Geological Survey (Part of the SC DNR). My attached submittal concerns mostly Chapter 3 of the Draft EIS. Thank you for the opportunity to review the drafts. USFS Francis Marion NF Draft EIS Comments- WRD III [22-1]

P 101 - I've had a tough year. I've been looking at this plan off and on for months, but this is as far as I have gotten. I may try for expanded comments tomorrow. [24-2]

OBJ-F-2(o). Provide Wood Products. ? Please refer to my opening statement for my objections to this item. [25-23]

Respectfully submitted by John A. Brubaker 600 Flatfield Farm Road Awendaw, SC 29429 (843) 708-8091 brubakerj@tds.net

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NMFS appreciates the opportunity to provide these comments. Please direct related correspondence to the attention of Ms. Jaclyn Daly-Fuchs at our Charleston Area Office. She may be reached at (843) 762-8610 or by e-mail at Jaclyn.Daly@noaa.gov. [31-7]

Concern: [Seq#12] The Francis Marion Forest Plan should identify and commit to funding the Sewee Environmental Education and Visitors Center because of long-standing partnership agreements with the Cape Romain Wildlife Refuge. [ID#12]

Associated Comments: [Seq#12]

Cape Romain has had a long-standing partnership with the Francis Marion NF since the opening of the Sewee Visitor and Environmental Education Center in 1996. The Center, jointly operated by the Refuge and Forest, has been and continues to be the hub for visitor information and recreation opportunities for both agencies. Our concern is with future Forest Service representation at the Center. [32-1]

We are puzzled by the Outdoor Recreation Themes/Goals stated in the Draft Management Plan. Nowhere in the plan is there any mention of the existing Partnership with Cape Romain NWR, specifically the Sewee Visitor & EE Center (SVEEC), and current successful public outreach programs. The Plan notes the Coastal Zone as being the "epicenter for interpretation and environmental education ...contributing greatly to the region's tourism market through increased delivery of guided services and developed attractions where they can be accommodated." [32-2]

Since its opening, the SVEEC has seen an average of 30,000 visitors annually. Environmental Education programming at the Center reaches 8,000 - 10,000 youth each year. Visitors frequent the SVEEC to obtain forest information and recreations guides for hiking, biking and water trails, purchase FMNF permits and walk the Nebo Trail. The popular annual Youth Fishing Rodeo at Sewee Pond, coordinated by the FMNF, is staffed by both forest and refuge staff and volunteers. The hub for the community Bulls Bay Nature Festival is the SVEEC. Fifteen partners contribute to its success and, Francis Marion NF has played a significant role in all aspects of festival planning and delivery. Other

activities at the SVEEC relevant to the Forest include the Longleaf Pine Restoration Summit, National Public Lands Day, and Firewise events. The Plan calls for partnerships that will promote and sustain recreation in the forest and, promotes engagement with communities and partners for marketing and delivery of visitor information. The SVEEC meets this and other themes as stated in the Plan. [32-3]

The Plan notes that: New facilities will be considered only by taking into account facility life cycle costs, maintenance costs and when resources are available for long-term sustainability without comprising existing facilities. There is no mention for current and future plans for the existing Sewee Visitor and Environmental Education Center. Overhead costs for Center operations and maintenance average 50k annually. In past years, the Francis Marion has contributed 19k each year to Cape Romain NWR. For the past two years, the Francis Marion NF has not made contributions to operating costs at the SVEEC. The Forest staffs the Center with a permanent employee 32 hours during days of operation. Cape Romain NWR lost its park ranger position in 2012. The refuge Visitor Services Manager (VSM) oversees the daily operations of the SVEEC and staffs the Center with volunteers, interns and employees holding temporary positions. The VSM staffs the Center when necessary to fill in for the FS employee. With the anticipated retirement of the current employee at the Center, we would like to know whether this partnership will continue. [32-4]

During the past two years, Cape Romain NWR and Francis Marion NF have explored bringing in an additional partner at the SVEEC to assist with overhead expenses and staff the information desk. The Charleston County Parks and Recreation (CCPR) expressed interest in having a presence at the Center. However, they had a need to collect revenue for education programs. The U.S. Fish & Wildlife Service currently do not charge entrance fees at visitor centers nor charge for environmental education programs at Centers. Hence, the CCPR dismissed any further plans to pursue the partnership. [32-5]

As the focus of the Forest Plan is more semi-primitive dispersed recreation, there has been discussion to bring in an outfitter business to rent kayaks and bicycles at the Center. This for profit business would also assist in staffing the information deck to promote forest recreation. Also mentioned has been the inclusion of organizations such as the Quail Forever. We see that these partnerships would support the Forest in their efforts and, there would be no forest service involvement at the Center - neither monetary to assist with overhead expenses or help with staffing needs. We would like to see the continuation of the Cape Romain NWR long-standing partnership with the Francis Marion NF. As such, we would like to see the continued representation for the Forest at the SVEEC by Forest personnel and a continued commitment for the strong partnership that we have shared since the Center's inception in 1996. [32-6]

Concern: [Seq#13] Lands managed for preservation and restoration of ecological elements should not be suitable for timber production because management for forest products compromises management for ecosystems throughout the longleaf system., whereas, lands suitable for timber production should only be managed to produce high quality forest products because this allows the Forest Service to fulfill its fiduciary obligation.([ID#13]

Associated Comments: [Seq#13]

Successful implementation of this plan is the last opportunity save the Francis Marion from irreversible ecological destruction akin to that of much of Western Europe. Unfortunately, achievement of plan elements to improve ecological elements are not likely to succeed so long the actual oversight is driven by management for forest products and accommodation associated municipalities and communities. [25-3]

1.5.3 Economic Benefits - Admittedly, insuring the availability of high quality forest products was the principal reason given in the argument to acquire the Marion. I disagree that today "The forest also is an important source of high-quality wood products for local and regional economies..." A principal shortcoming to the Marion's failure to meet overall agricultural goals are caused by competing regulations that virtually assure low profitability timber sales. Perhaps in consideration of that bygone idea, continued emphasis of filling upper management positions with foresters remains the rule. That bias stifles the potential of a multidisciplinary team capable of grasping and achieving today's diverse goals. Assuming a modest \$ 2,000/acre for the Marion, its 259,625 acres are worth in excess of 500 Billion dollars. Because of the uniqueness of the irreplaceable natural treasure and, to a lesser degree, a multiplicity of likely amenities, including many of those noted in this document, the Forest is a bargain for us, the owners. The paltry income from timber sales may cover some ongoing expenses, but is justified by neither impact on the resource nor current staffing priorities. Management for forest products warrants complete revision. Existing management, including proposed, leave virtually all Francis Marion acreage under some degree of forest management. Management for forest products compromises management for ecosystems throughout the longleaf system. Requirement that all timber product harvest protocol take into account practices to safe guard environmental and archeological elements compromises the value of the timber product. The whole process becomes a cycle of "reasons" why environmental protection fails and profits are non-competitive. My argument is to work toward a solution. I propose that the two be segregated, with neither variable dependent upon the other. That would promote best possible preservation and restoration of ecological elements, and allow the Forest Service to fulfill its fiduciary obligation. ? Through 1936 purchase of initial parcels within the Francis Marion footprint, Federal dollars, money from US citizens across the board, were used to bail-out this area from economic collapse. Today the area prospers. The need for further cash flow through the USDA FS cannot be justified. Any tax revenue that Charleston and Berkeley Counties may argue they are owed due to the land the Forest occupies would better be considered greed than need. Neither contributes to forest infrastructure or maintenance. The residents of both counties benefit immensely through access to the forest at no cost to those adjacent governments. In fact Berkeley and Charleston receive actual payment, an agreed upon fee for hosting the amenity. In 2014 that amounted to \$426,041.50. Both counties are today emptyly prosperous. It is time both considered the value of the Forest to that prosperity, and forgave the fee, which could much better be applied to monitoring and other unfunded needs of the forest. [25-8]

It is also not clear whether projected timber yields reflect the desired conditions described for vegetation in the various ecosystems. Yields appear to be based solely on even-aged vs. uneven-aged systems and rotation length. The rationale used to convert desired conditions into these terms for modeling must be documented to determine whether projected harvests are compatible with the desired conditions. This information was not available. [29-41]

My intent is not to make an issue over the figure, though best numbers would be helpful. As I have said earlier, the plan is excellent. There are, though, well established realities and past practices that threaten the Plan's ecological direction. The 3 I'm trying to address here are: 1. Upper level management, i.e., the day to day USDAFS executives who will determine actual practices, are, so far as I am able to determine, all Foresters. Some have noteworthy experience w/more holistic ecological matters, but all are none-the-less foresters. 2. Regardless of the management direction proposed, 70 to 75 % of the land is subject to some degree influence for timber management. Based on history, including the recent Macedonia project, what's billed as longleaf restoration in reality favors loblolly, complete w/chemicals and heavy equipment. Perhaps that comes from no higher level academic forestry program in longleaf. At any rate it will bring more harm than good to the ecological welfare of the land included. 3. Forest products are important; in their own right and in particular to the

economy of SC's agriculture. As much as I value our pre-Columbian natural heritage, I value our productive forests. As practiced today commercial forestry and ecological integrity are incompatible. They cannot occupy the same spot of land. Rather than continue to deny that reality, continue to try to rationalize through phrases like "early successional habitat," this is an opportunity to simply separate the two incompatible practices. I have little hope in the outcome, but must ask that. Whatever land it takes to generate historical income from forest products should be segregated from the main area managed for its ecology, and intensely managed to produce as much value as possible w/o regard to ecological impact. That's the compromise. The Francis Marion is the last of the best that remains here. What we loose entirely or by half measure cannot be recovered later. [41-3]

Concern: [Seq#14] The Francis Marion Forest Plan should recognize the longleaf pine ecosystems as fire-dependent rather than fire-adapted because identifying them as fire-adapted downplays the importance of fire in the longleaf pine ecosystems. [ID#14]

Associated Comments: [Seq#14]

1.5.1 Environmental Benefits Chapter 1. Purpose and Need for Action c. The fire adapted longleaf pine ecosystem, one of the most diverse ecosystems in the United States. This ecosystem, which supports RCW and American chaffseed, is found on ridges and better drained areas throughout the forest, as well as on wet, seasonally saturated mineral soils. ? The coastal plain longleaf ecosystem is fire dependant. Longleaf pine, the principal element of interest to foresters, and some ecosystems in and around the longleaf ecosystem are fire-adapted. Essential botanical elements that characterize the longleaf system are as dependent upon frequent fire as are humans dependent upon the essential polyamines. Downgrading the importance of fire from "dependant" to "adapted" is contradicted by peer review literature on the subject, and can only be regarded as an attempt to excuse inadequate burning on the Francis Marion for nearly two decades. ? A few days ago two (2) of the three (3) Witherby area populations of American chafseed were destroyed, apparently SC or Berkeley Co. DOT. As I write this the USDAFS wonders whether-or-not it has jurisdiction over activities on the affected forest roadside. [25-6]

Theme 3: Respond to challenges. 3a) Maintaining fire-adapted natural systems in the face of severe prescribed fire restrictions in areas adjacent to development. ? Should recognize Fire Dependance of the longleaf community. ? Refer to comments in last paragraph of opening statement and 1 b) above. [25-10]

Concern: [Seq#15] The Francis Marion Forest Plan should restrict hunting, herbicide use, prescribed burning and road work and manage for more wilderness in order in order to protect the land, plants and animals for our children. [ID#15]

Associated Comments: [Seq#15]

I WOULD LIKE TO SEE THIS SITE AS WILDERNESS AND KEEP MANKIND OUT OF IT. WE NEED TO PROTCT MORE AREAS FOR OUR CHILDREN TO BE PART OF NATURE NOT PART OF FS MAULING. THE FS PLAN IS MAULING OF NATURE TO MAKE IT LIKE MAN WANTS IT. [4-2]

I WANT NATURE PROTECTED. THE BIRDS AND WILDLIFE ALL LIKE NATURE ,NOT WHAT FS FAT CAT BURAEUCRATS COME UP WITH. THE USDA IS NOTORIOUS FOR KILLING ANIMALS AND BIRDS, I.E., MEAT ANIMAL RESEARCH LAB, APHIS, ETC. SO THAT THIS FSS PLAN DOES THE SAME THING. USDA IS

DISASTROUS FOR WILDLIFE. THE DAMAGE FROM THE HURRICANE SHOULD BE LEFT AS NATURE LEFT IT. NATURE WILL BE BACK. ALL OF THESE PLANS ARE SIMPLY MANKINDS MAULING. THERE SHOULD BE ZERO HUNTING, ZERO TRAPPING, ZERO PRESCRIBED BURNING WHICH BRINGS ON LUNG CANCER, HEART ATTACKS, STROKES, PNEUMONIA, ASTHMA, AND ALLERGIES THROUGH FINE PARTICULATE MATTER POLLUTING THE AIR. ALL TOXIC CHEMICAL USE SHOULD BE KEPT OUT OF THIS AREA. NO NEW ROADS SHOULD BE BUILT [4-5]

Concern: [Seq#16] The analysis in the DEIS should address the impacts of climate change, such as increase in extreme storm events, because the extreme weather events result in damage to timber, roads, recreational sites and increases the risk of a catastrophic fire. [ID#16]

Associated Comments: [Seq#16]

3.2.4. Climate Change (pages 60-71) According to the DEIS, the key factors expected to affect the Francis Marion include an increase in extreme weather events such as hurricanes, heat waves, droughts, tornadoes, floods, and lightning storms. These issues are expected to continue to grow over the life of the revised forest plan. Previous storms such as Hurricane Hugo resulted in damage to one-third of the Francis Marion forests, which included timber damage, high winds, downed trees, blocked roads, closed trails, closed facilities, recreational site damage, and a greater risk of catastrophic fire from increased shrub growth. The DEIS includes strategies that address the effects of increasing weather disturbances and responding to anticipated climate changes. These strategies are incorporated into the alternatives and include the reduction of vulnerabilities by maintaining and restoring resilient native ecosystems and conducting prescribed burns. National forests can play an important role in both mitigating and adapting to the effects of climate change. Mitigation measures focus on strategies such as carbon sequestration by natural systems, ways to increase carbon stored in wood products, ways to provide renewable energy from woody biomass to reduce fossil fuel consumption, and ways to reduce environmental footprints. Adaptation measures address ways to maintain forest health, diversity, productivity, and resilience under uncertain future conditions. Recommendation: The DEIS indicates that the USFS's Best Management Practices (BMPs) will be used to maintain resilience and resistance to a changing climate. The EPA notes that under all three alternatives the Francis Marion remains a carbon sink. [38-4]

Concern: [Seq#17] The Francis Marion Forest Plan should emphasize landscape level approach to planning management activities to reduce sedimentation, protect water quality, biodiversity and forest fragmentation. [ID#17]

Associated Comments: [Seq#17]

The EPA understands the need for multiple-use activities and supports the management of National Forests that place less emphasis on traditional harvesting and other consumptive uses and a greater emphasis on recreation and ecosystem enhancement. The EPA has rated this document 'EC-I', meaning that we have some Environmental Concerns for the proposed action and that some clarifying information is being requested for the Final EIS. We have some environmental concerns about the potential biological impacts from these actions including stream sedimentation, loss of habitat and reduction of biodiversity, and species impacts. We appreciate the opportunity to review the proposed action and appreciate the revised agency review schedule based on the Regional receipt date of the document. Please feel free to contact [38-2]

Concern: [Seq#18] The Forest Plan direction should maximize the amount of longleaf pine restoration and prescribed burning where feasible, because these activities improve the diversity of the forest, habitats for numerous wildlife species [ID#18]

Associated Comments: [Seq#18]

1. *General Comment: The Nature Conservancy has reviewed the Draft Revised Land Management Plan for the Francis Marion National Forest. We found the Plan to be very thorough, detailed, and well justified in its conclusions. The Nature Conservancy has worked for several decades with and around the Francis Marion National Forest to conserve the wide variety of ecosystems found here. The Nature Conservancy has used the tools of land protection, forest management, prescribed fire, and wetland restoration in partnership with many organizations to further the extent and health of longleaf pine, maritime forest, freshwater streams and rivers, depressional and riverine wetlands, freshwater and estuarine marshes, and associated flora and fauna. We find the Plan to be consistent with our organizational goals, and one that sets ambitious targets for protection and restoration of important ecosystems. Implementing the Plan will not only further the health of these ecosystems, but will also create jobs and improve recreational enjoyment of the Forest. [16-1]*

5. *Page 14-15: We strongly support the concept of the Longleaf Ecosystem as a matrix system where embedded habitats are treated as part of the whole. This approach will both further the ecological goals, and also greatly increase the efficiency of management and Forest Service operations. [16-5]*

8. *Page 20: We strongly support the Forest's visions for species diversity, particularly the recognition that Pine Upland/Wetland Associates (DC-F-1(1)) require integrity between the upland and wetland, and the recurrent use of growing season fire. [16-8]*

17. *Page 52: We support the concept of flexible opening sizes for longleaf restoration work in Wet Pine Savanna and Flatwoods Ecosystems. Larger openings in restoration phases facilitate efficiency and restoration success, and reduce the number of stand entries, ground compaction or rutting, and other mechanical impacts. [16-16]*

18. *Page 62: We strongly support OBJ-MA1(a) to increase both burned acres, and areas burned in the growing season. Growing season burning has been clearly demonstrated to improve fire-dependent longleaf matrix habitats, while the impacts to breeding birds and other fauna, when they occur at all, have been shown to be minimal or temporary in a wide variety of scientific studies. We also support the Service's vision to accomplish this objective through partnerships, stewardship opportunities, and cooperation with adjoining landowners. [16-17]*

19. *Page 63: We strongly support OBJ-MA1(b) to maintain, improve, and restore upland longleaf and wet pine savanna and flatwood ecosystems. The numerical targets listed within are based in a thorough evaluation of the existing and potential acreage of these systems, filtered through an evaluation of feasibility to maintain long-term fire application and stewardship. We encourage the Service to make significant use of partnerships to meet these ambitious but appropriate targets. The "longleaf alliance" should be capitalized to Longleaf Alliance. [16-18]*

Fire: I strongly agree with targets of 1-3 years for upland and wetland pine sites in MA1; this is the single most critical factor for ensuring sustainability of the longleaf pine ecosystem. In addition, the long-term average for any given site should not exceed 2-yrs. If this target can be achieved this would be a tremendous accomplishment and all else is secondary [18-2]

The Division agrees the restoration of the longleaf pine fire climax community where possible is a worthy goal. Longleaf pine was once a dominant feature in our coastal forest and many important species thrive in the associated fire climax community. These fire climax stands can provide great ecological diversity and beauty, while producing forest products that benefit our economy and communities. While we agree with the goal to restore the longleaf pine fire climax community on the forest where possible, we contend that loblolly pine is and will continue to be a major component of the forest. Like longleaf pine, loblolly pine is a native species to the coast of South Carolina and has always been present on the forest. Since loblolly pine will continue to be a major component of the forest, we encourage the US. Forest Service to actively manage and regenerate loblolly pine where appropriate to meet management objectives. [44-2]

Concern: [Seq#19] The Forest Plan direction should address the control of mosquitos because mosquitos can spread diseases and impact human health and the quality of life for residents and visitors to the Francis Marion National Forest. The Forest Plan should allow a wider range of pesticides for aerial spraying to control mosquitos because the current pesticide restrictions increase the cost and effectiveness of the control program. [ID#19]

Associated Comments: [Seq#19]

The work of the Charleston County Mosquito Control Program (CCMCP) is performed by the Mosquito Control Division of Charleston County Public Works. We appreciate the opportunity to offer the following comments in the hope that we can assist in achieving the stated theme to "Improve the quality of life and health for the public". [19-1]

The CCMCP is prohibited by the South Carolina Department of Natural Resources (SCDNR) from conducting the basic, highly effective mosquito control practices of aquatic stage mosquito (larvae) surveillance and treatment (larviciding) on the Santee Coastal Reserve managed wetland impoundments (the Santee Coastal Reserve currently contains 1,000 acres of diked impoundments). A study conducted in 1981 and 1982 by researchers from The Citadel's Vector Biology Program found mosquito larvae production as high as 32,000 larvae per square meter in standing water on one sampled impoundment. Research conducted by the U.S. Navy on similar sites discovered that they can produce up to four million adult female mosquitoes per acre (on non-larvicided sites) after sufficient rainfall, tide, or man-made flooding event. These adult salt-marsh mosquitoes easily fly to and affect communities eight to ten miles from their impoundment breeding grounds, utilizing the Francis Marion National Forest (FMNF) and other adjacent natural zones as flight paths and resting areas. [19-2]

Due to the adult mosquito populations generated by the Santee Coastal Reserve, grossly disproportionate amounts of CCMCP resources are devoted to controlling the adult mosquitoes that are infesting McClellanville, Germantown, Awendaw, and other local communities, all of which are located in or have relevant geographical proximity to the FMNF. As stated in the Citadel study, in 1983, the CCMCP determined that 20% of its total budget was expended to control salt-marsh mosquitoes in the McClellanville area alone. In 2010 a cost analysis was conducted by the CCMCP of the previous four years of the mosquito control carried out in the area bordered by Darrell Creek Trail northward to the South Santee River. 61% of the CCMCP's total budget for those four years was expended in this area, including 33% of the adult mosquito spraying by truck-mounted units. In 2013 from January through September, 11% (159) of the total CCMCP spray truck missions countywide were carried out in the McClellanville area, in addition to 9% (84,346) of the total County spray truck

acreage. [19-3]

Although spray truck missions can at times sufficiently control adult mosquito outbreaks, aerial spray missions are sometimes necessary in this and other regions due to the geographical spread, intensity, and duration of the outbreaks (adult mosquito "counts" of 10 to 100 per minute or more over several days). The aerial spray missions conducted in the McClellanville, Germantown, and Awendaw regions by necessity encompass much of the FMNF. The CCMCP has been prohibited by the USDA Forest Service (UFS) from using any other product except Malathion (active ingredient) by air in the FMNF for decades. As a result, a large percentage of the mosquito population is resistant to (will survive) the necessary aerial treatment; so much so that, at times, as little as 50% control is achieved per mission. Continued aerial spraying, utilizing Malathion as the sole pesticide, will soon increase the resistance factor until the point is reached that aerial spraying is ineffective, resulting in dire quality of life and potential public health consequences for the human population. Since the late 1990's, the UFS has required that an Environmental Impact Study (EIS) be conducted to determine whether other pesticides would be approved for aerial application for adult mosquito treatment over the FMNF. At that time the cost of the requisite EIS was estimated to be approximately \$3 million. No agency at any level has decided to fund this EIS. [19-4]

The CCMCP has also been prohibited by the UFS since the late 1990's from conducting larval mosquito surveillance and treatment by air at a known salt-marsh mosquito breeding impoundment (approximately 35 acres in area) in the Tibwin Forest section of the FMNF adjacent to the Atlantic Intracoastal Waterway (AIWW). [19-5]

In consideration of the Francis Marion Forest Draft Plan's stated goal of improving quality of life and health for stakeholders, the CCMCP requests that the Revised Forest Plan contain specific provisions and goals to address the aforementioned issues that are currently severely impacting residents living in and adjacent to the FMNF as well as visitors to the FMNF, in addition to straining the resources of the CCMCP and Charleston County taxpayers. Specifically: 1. That an Environmental Impact Study (EIS) be funded and carried out within five years of the finalization of the Revised Forest Management Plan with the goal of approving the use of alternative aerial adult mosquito control products, or that the UFS grant the CCMCP an indefinite waiver immediately (beginning in 2016) for permission to utilize other products commonly used by CCMCP until such a time that an EIS is completed and alternative products are approved. 2. That the UFS immediately (by February 2016) allow the CCMCP to conduct larval mosquito surveillance and aerial treatment at the previously mentioned AIWW impoundment in the Tibwin section of the FMNF. 3. That the UFS partner with the CCMCP and other stakeholders to address the SCDNR prohibition against implementing the effective, well-established basic preventive mosquito control practices of larval surveillance and treatment in the Santee Coastal Reserve. The adult mosquito population generated by the Santee Coastal Reserve could be significantly reduced by these practices, resulting in greatly increased quality of life for the human population and significant cost savings to the County taxpayers. All of the products used by the CCMCP for control of aquatic stage and adult mosquitoes are approved by the EPA and are utilized in accordance with Federal and State Law. The CCMCP also follows the guidelines established by the American Mosquito Control Association (AMCA) and the U.S. Center for Disease Control (USCDC) as Best Management Practices (BMP). Among the most important BMPs is the implementation of a high degree of surveillance to evaluate larval and adult mosquito populations to determine the most appropriate mosquito control methods to be used, if any. The CCMCP currently conducts mosquito control BMP's in the Cape Romain Refuge, the ACE Basin, State and County Parks, and thousands of acres of freshwater wetlands, salt marshes, marsh estuaries, woodlands, and other natural areas and ecosystems across Charleston County. We are confident that their use in the FMNF would not pose an unreasonable risk and would improve the quality of life and health for the public. [19-6]

Concern: [Seq#20] The Monitoring Program should address habitat conditions in order to monitor progress toward meeting the desired conditions for restoration. [ID#20]

Associated Comments: [Seq#20]

16. Page 48-62: We compliment the Service on the excellent descriptions of habitat types. Providing specific acreages of each enables a much more robust review of the Plan, as well as the ability to monitor progress in the future. [16-15]

Chapter 4. Monitoring and Adaptive Management 4.1 Introduction The monitoring program was developed and will be implemented using the following criteria: 2. Use best available scientific information to develop the plan monitoring program. ? There ought to be no allusions or misunderstandings about what constitutes the best available scientific information. A team of academicians well published in the field under consideration should be convened and charged with developing the plan. ? Forest staff involved in the monitoring process should be familiar with relevant literature, including that noted in the attached BIBLIOGRAPHY. References authored by Dr. Richard D. Porcher are particularly relevant. 4.5 Determination of Best Available Science ? The forest would be well served should Southwest Research scientists consult with the team of academicians noted above under item 2 above in making final decisions. [25-40]

Concern: [Seq#21] The Forest Plan direction should not rely on best management practices, but use stricter guidelines to protect ecological integrity. [ID#21]

Associated Comments: [Seq#21]

OBJ-MA1(b). Upland Longleaf and Wet Pine Savanna and Flatwoods Ecosystems BMP is not appropriate as a protocol for timber management on the Francis Marion. The reference is appropriate for harvests on private forests where environmental integrity is not a consideration as it is throughout the Francis Marion. [25-28]

Guidelines for Soil and Water and Aquatic Habitats G18 Best Management Practices provides for minimal safe guards. It is a suitable reference for commercial private forest, but management of the Francis Marion should be conducted under much stricter standards. [25-37]

Concern: [Seq#22] The Forest Plan should address construction and maintenance of fire lines because fire lines can cause resource impacts, such as erosion. [ID#22]

Associated Comments: [Seq#22]

Guidelines for Prescribed Burning and Wildfire Suppression Guidelines for Prescribed Burning and Wildfire Suppression G13 A tiller could give better results than either a blade or disk. [25-36]

G21 Any planting of firelines is contradicted. Further, non-local genotypes should not be introduced on the Francis Marion. [25-38]

Concern: [Seq#23] The Forest Plan direction should address the ignition of prescribed fires on the Francis Marion National Forest, because ignition of prescribed fire using ATVs leaves more refugia for wildlife. [ID#23]

Associated Comments: [Seq#23]

2.3.2 Objectives that Apply to Management Area 1 OBJ-MA1(a). Prescribed Fire for Ecosystem Maintenance or Restoration ? Improvements in fire ignition techniques are required. Fire balls thrown from helicopters are acceptable, but not as they are customarily used to ignite everything within a large area. Refuge for game animals, especially quail, and wildlife must be left intact within the burn area. ? Safe methods to use torch ignition from ATVs should be developed and employed. [25-27]

Concern: [Seq#24] The Forest Plan should address the impacts of increasing urban developments adjacent to national forest lands, because developments will have direct and indirect impacts to wildlife habitats and water quality and affects the forest's ability to implement prescribed burning. [ID#24]

Associated Comments: [Seq#24]

The South Carolina Ecological Field Office and the FMNF have worked closely on many issues including threatened and endangered species management and prescribed fire. Many of the concepts within the Forest Plan are reflective of our shared objectives. While we support the Forest Plan as a comprehensive and practical management tool to sustain and restore the forest ecosystems, we are concerned about the lack of information regarding expanding human population growth and potential impacts on natural resources. The FMNF will be challenged to sustain the use of fire as part of their management tools within close proximity to developing communities. The indirect effects of road widening, traffic, and the inability to use prescribed fire in the most diverse area of the forest could potentially be a great burden for the FMNF. We recommend the Forest Plan develop criteria to evaluate and respond to future growth and its potential impacts. Thank you for the opportunity to comment on the Forest Plan. We look forward to working with on this valuable management plan in the future. If you have any questions or comments or require additional information regarding this letter, please contact Ms. Paula Sisson at (843) 727- 4707 ext. 226, and reference FWS Log No. 2013-R-0310. [33-2]

The Division agrees with and supports the aggressive goal for the use of prescribed fire on the forest. Prescribed fire is a critical tool in the management of our southern pines. The goal to utilize prescribed fire on a one to three year rotation will reduce hazardous fuel loading and benefit many unique species. However prescribed fire becomes more difficult to implement each year, due to the increased urbanization in and around the Francis Marion. While the draft management plan does make mention of alternative methods for fuel reduction and understory control where fire is not practicable or possible, the plan does not clearly spell out all alternatives being considered. In public meetings the use of herbicides, mechanical treatments and conventional harvesting were discussed, however the plan does not set goals for the use of these methods beyond commercial harvests. The Division encourages specific goals for the use of alternative methods for fuel reduction and understory control. [44-3]

Concern: [Seq#25] The Forest Plan should address the departure from sustained yield limits and departure from non-declining evenflow because they do not complain with the National Forest Management Act. The DEIS should adequately disclose the effects of increased future regeneration

harvesting in the Assessment because this is not disclosed in the documents. [ID#25]

Associated Comments: [Seq#25]

The Assessment acknowledges that the revised plan will necessarily require an entirely different approach to timber production than the current plan: "Commercial thinning has been the sole focus of timber harvest on the Forest since a few years after Hurricane Hugo. This emphasis is beginning to shift. Projects now in planning stages are expected to complete most of first thinning harvest needed in stands that were established after Hurricane Hugo." This suggests a much greater rate of harvest of mature trees, but the DEIS does not clearly address this change in its effects analysis. The Assessment does not consider the recent thinning to be a stressor on the ecosystem or species, but it did view past timber harvest this way, so the DEIS needs to take a harder look at the effects of future regeneration harvesting. [29-40]

Neither the draft plan nor the DEIS acknowledge that the PTSQ for the plan represents a departure from nondeclining even flow of timber (NDEF). According to Wilkinson and Anderson ("Land and Resource Planning in the National Forests," Oregon Law Review, Vol 64, No. 2, 1985), "the 10 NFMA requires the Forest Service to follow NDEF policy, with some exceptions." Moreover, NFMA requires that a decision to adopt a departure, including the justification for the exceptions, be fully reviewed by the public in accordance with NFMA requirements for plan revisions. There are few, if any, forest plans that have adopted a declining schedule for timber volume since they are known to be controversial. The draft plan proposes an objective of 98 MMCF in the first decade and 95 MMCF in the second decade. Appendix B reveals that volume would decline to 78 MMCF in decades four and five before rebounding. The record fails to identify "the projected long-term average sale quantity that would otherwise be established (without a departure)," as required by NFMA, but the PTSQ for such a schedule would certainly be lower under NDEF; perhaps it would be limited by the lowest decade amount, which was typical for plans developed under the 1982 regulations. Nowhere does the plan or DEIS use the term "departure," for this decline of 25%, thus hiding that fact from the required public review. The Forest seems to believe that a departure is defined in reference to the "sustained yield limit," which it lists as 113 MMCF. It concludes that its harvest levels are "sustainable" because they are below this limit, even though they will decline over time. This is an incorrect interpretation of NFMA that deviates from longstanding agency policy. Failure to acknowledge a departure in the revision DEIS prevents compliance with NFMA. This misinterpretation of "sustainability" also means the desired condition of a "sustainable flow of timber" would not be met. [29-42]

The Directives for the 2012 Planning Rule encourage this misinterpretation. Whereas the 1982 regulations defined a departure schedule consistent with NFMA as any schedule that declined between any two decades, the 2012 Planning Rule did not include requirements for timber volume schedules. However, the new Directives defined a departure as a "departure from sustained yield limit." The Forest should not be following agency policy in these Directives that conflicts with the law. The Forest must modify its timber schedule, or properly inform the public of the proposed departure so it can consider whether such accelerated timber harvest is appropriate. This is especially important here because the plan acknowledges that during the departure period the young age component in MA1 pine ecosystems will be outside of its historic range, which would likely violate the requirement for ecological integrity. [29-43]

Concern: [Seq#26] The plan(page 51) should change the discussion about *calopogon multiflorus* in the understory because it is not a wet savanna plant but occurs in mesic savannas similar to those that support the giant orchid as documented by Herrick Brown of USC herbarium. The Forest Plan and DEIS should describe the coarse filter/fine filter approach used to identify habitat needs for at risk

species, so the public can understand the process used to create forest plan direction for species groups. The DEIS should display the values for each indicator by alternative that used to evaluate ecological integrity and how the indicators were affected by plan components because it is not possible to determine if the effects analysis is adequate. Planners should disclose in the DEIS how the best available scientific information was used to evaluate ecological integrity, including the sustainability scores, because this can be used to determine the probability of a species would persist in the plan area. Planners should disclose the rationale for determining "group weights" for SCC's along with the plan components and locations used in the analysis and the "experts" who provided information, along with other relevant information in contained in the "ecological sustainability evaluation tool" because the absence of this information negates the possibility of commenting on the adequacy of the analysis. Planners need to include plan components to address threats of nonnative invasive species on all the ecological systems because NFMA requirements for ecological integrity cannot be met without those plan components(29-17) [ID#26]

Associated Comments: [Seq#26]

Page 51: Several at-risk species are dependent on these ecosystems (including bearded and many-flowered grass pinks; pineland and short-leaved yellow-eyed grass; frosted flatwoods salamander; pineland and Carolina dropseed; and red-cockaded woodpecker). There is a widespread misperception that Calopogon multiflorus is a wet savanna plant. In fact it occurs in mesic savannas similar to those that support giant orchid. Herrick Brown of USC herbarium researched the several reports of C. multiflorus on FMNF by examining herbarium specimens and concluded that all were misidentified C. barbatus except for the single site found by me, my wife Donna Streng and John Brubaker along Halfway Creek Road. This population has not been relocated for many years but perhaps might reappear with annual fire. [18-9]

However, the DEIS does not display the values for each indicator by alternative, nor does it explain how the indicators were affected by plan components. There is therefore no way to review the effects analysis to determine if the DEIS has adequately and accurately disclosed the effects of the alternatives, including whether the best available scientific information has been used. The DEIS also does not explain the rationale behind the conversion of sustainability scores to "ranges of acceptability." Presumably this will be important because it will be used to demonstrate the probability of a species persisting in the plan area. The DEIS suggests that the information is "documented within the ecological sustainability evaluation tool," but this was not available to review. The result is a very "black-box" approach to planning that inhibits public participation. It also renders the effects described in the DEIS as conclusory - including this statement: "All native ecosystems and native species, including at-risk species, would be protected in all alternatives." The Forest needs to "show their work" for it to count in the NEPA process. Natural range of variation is a key concept that is required by the planning rule to be used in evaluating ecological integrity. It is starkly absent from the DEIS, and there is no discussion of why, or what alternative approaches are being used. While the DEIS states that it will be used for evaluating effects on ecosystem and species diversity, this effects analysis is not displayed. One of the key findings in the Assessment is that, "Nonnative invasive species have increased to threaten all ecological systems on the Forest." These include aquatic nuisance species. The draft 4 plan does not include any plan components to address these species, but instead defers to unspecified "Forest Service national and regional guidance and South Carolina state direction." To meet its NFMA requirement for plan components to provide for ecological integrity, the forest plan must incorporate the measures that are necessary to do so. [29-17]

The Forest is using a "proxy on proxy on proxy" approach to addressing viability, where an ecological system is analyzed to determine the effects on habitat for a group of species, which is used to determine effects on habitat for an individual species, which is then used to determine

viability of the species population. This involves establishing major assumptions about the relationships of individual species populations to their habitat, and of those habitat requirements to the groupings used in the analysis. The best available scientific information used as a basis for these assumptions must be documented. [29-19]

A key step in this process is the grouping of species for evaluation, and the determination of a "group weight" that indicates how well an individual species' requirement is met by the group evaluation. This could be a very useful approach to determining if species-specific plan components are needed, but there is no information to review about how these determinations were made other than that they were based on "experts." Neither the DEIS nor the Assessment contain any information about individual SCC, the ecological conditions that are necessary or the threats to those conditions. The DEIS states that, "Each group was analyzed by species and determinations made on whether species needs were fully met by plan components, considering locations for species and management area direction associated with their known populations." The DEIS needs to specify which plan components and which locations are important and were used in this analysis. Specific "experts" must be cited. The DEIS must also describe the quantity and quality of habitat that is necessary to sustain the viability of the species in question and explain its methodology for measuring this habitat. [29-20]

Concern: [Seq#27] The Forest Plan should recognize the designation of the Kings Highway as a historic site because of its location within the Francis Marion proclamation boundary. [ID#27]

Associated Comments: [Seq#27]

We would also hope that Kings Highway's recent designation as a National Historic Site will be acknowledged in the plan. [27-6]

Concern: [Seq#28] The range of alternatives in the DEIS should be expanded to consider more prescribed burning in order to maintain and restore habitats for at risk species. [ID#28]

Associated Comments: [Seq#28]

NEPA process The range of alternatives should be expanded to address concerns that many at-risk species are threatened by lack of frequent fires. The DEIS admits that Alternative 2 will not adequately address this issue, but the only alternative developed would actually reduce the area treated by fire. [29-12]

Concern: [Seq#29] The Forest Plan should clarify how the composition in Maritime Forest and Salt Marsh to avoid confusion over interpretation on how to maintain and restore these ecosystems [ID#29]

Associated Comments: [Seq#29]

14. Page 41-42: We strongly support the priorities listed in OBJ-F-2(o) - Provide Wood Products, particularly timber harvest priorities 1, 2 and 3. Priority 4 (Improve composition of maritime forests and oak and mesic hardwood forests) is unclear with respect to the meaning of "improve composition". Similarly, we strongly support the objectives to Reduce Forest Stand Densities, Reduce

Wildfire Risk, and Reduce Non-Native Invasive Species. We are unclear as to the meaning of "Emphasize identification of the public" under Contribute to Community Health. [16-13]

Concern: [Seq#31] The Forest Plan direction should protect the inland rice fields in the Huger Creek drainage basin, particularly Turkey and the East Branch of the Cooper River because they are the last remnants of slave-based rice cultivation. [ID#31]

Associated Comments: [Seq#31]

P 36 - the Huger Creek drainage basin, including the Turkey Creek basin, must not be "restored" by destroying the important cultural artifacts represented by the slave-built inland swamp rice fields. [24-8]

P 95 - I remain extremely concerned about what "priority watershed restoration" in the Turkey Creek - East Branch of Cooper River actually means - these are areas of immense cultural value, and destroying the cultural remnants of the slave-based rice cultivation system along these creeks would be unacceptable. [24-22]

Concern: [Seq#32] The Forest Plan should restore hydrologic function because it can improve freshwater habitats and reduce migration of saltwater further inland. [ID#32]

Associated Comments: [Seq#32]

10. Page 34: Climate Change - Ecosystem Resilience: We encourage the Service to consider the role of freshwater hydrologic restoration and management in the resilience of upland systems to climate change. Innovative water management structures used in TNC's Albemarle Sound project have demonstrated how drainage can be managed to reduce salt water migration into freshwater forested wetlands and pond pine pocosins. These approaches could be integrated into hydrologic restoration plans that are promoted elsewhere in the Plan (e.g. OBJ-F-1(d); page 37). [16-10]

Thank you for taking the time to follow up. It's good to hear that Bill and Jason were involved with this planning effort. I really do appreciate that the revised plan identifies objectives and desired outcomes for enhancing and restoring natural resources. Further, that USFS staff recognize that managing and improving our natural resources is essential to supporting and enhancing multiple ecotones within the forest. With that said, I believe the plan should identify not only goals, objectives and expectations but also implementable projects. Identifying specific projects ensures that stakeholders have aligned interest and that value will be demonstrated to constituents. It sounds like staff have taken positive steps to identify projects. Do you have any additional information on the potential restoration areas that you can share? I would encourage the USFS to engage the private sector via this planning effort and discuss projects. We (Wildlands) have designed over 296,600 LF of stream restoration and 148 acres of wetland restoration and have recent experience in the coastal plain of both South and North Carolina. We are willing to share our experience and/or support as needed to benefit the plan and forest. Thanks again for taking the time to follow up. [35-1]

Concern: [Seq#33] The Francis Marion National Forest should comply with federal guidelines during prescribed burning operations to protect air quality. [ID#33]

Associated Comments: [Seq#33]

3.2.3 Air Quality (pages 57-60): The land management activity most likely to affect air quality will be prescribed burning. The DEIS indicates that Alternative 1 presents no change in the number of acres burned per decade during the dormant and growing season; approximately 260,000 acres and 40,000 acres burned per decade, respectively. Alternative 2 will provide the highest level of hazardous fuels reduction and ecological restoration and maintenance with prescribed burnings, lasting less than 24 hours, of approximately 195,000 acres (dormant season) and 105,000 acres (growing season). Alternative 3 proposes the least amount of prescribed acres burned at 167,000 acres (dormant season) and 105,000 acres (growing season). Alternative 3 will also see the greatest increase in fuel loading due to increases in shrub growth. Recommendation: The EPA recommends that the USFS continue to comply with the Federal and State guidelines associated with prescribed burns. While Alternative 2 will result in the greatest hazardous fuels reduction and ecological restoration and maintenance, it will also contribute to the greatest air quality impact of the three alternatives. Alternative 2 would also incorporate other fuels reduction treatments, such as mechanical, chemical, and biological activities that would mimic the historical role of a wildland fire without increased smoke and air pollutant production. However, the DEIS indicates that the increase in smoke from prescribed burning activities is not expected to affect the continued attainment of the Federal and State air quality standards. [38-3]

Concern: [Seq#34] The Forest Plan should define "plastic soils" because it could be interpreted in different ways and lead to confusion over implementing the forest plan direction. [ID#34]

Associated Comments: [Seq#34]

Pg 118 - S17 - Plastic Soils? Define or re-write [21-16]

Concern: [Seq#35] The Forest Plan direction should address the potential mining of leasable minerals, including sand, phosphate, limestone and organic sediments, because as urbanization increases the demand for these resources will increase and mining operations could potentially impact groundwater and other natural resources on the Francis Marion National Forest. [ID#35]

Associated Comments: [Seq#35]

Groundwater Groundwater in the several main aquifers beneath FMNF will almost certainly be a tempting target for pumping and use elsewhere as the Charleston metropolitan area and other nearby developed areas grow and water resources (both surface waters and groundwater) come into more demand and competition in use. Legitimate arguments will be made that the footprint of even a large wellfield can be small and minimally obtrusive (small fenced enclosures at the actual sites of the scattered wells) and with pipelines, and even electrical powerlines, buried unobtrusively along existing forest roads. Where there will be much more risk to the forest environment will be in easily made misunderstandings and inaccurate assumptions in hydrologic arguments and assessments. While it is possible and even probable that the deepest major aquifers beneath FMNF are sufficiently isolated hydraulically from the surface environment so that they might be pumped safely and even heavily without harm to the surface environment, it is the shallower aquifers that will be more coveted due to their lesser salt content (and possible other constituents, e.g., dissolved boron that can harm lawn and golf course grasses). FMNF is dominated almost exclusively by high-watertable forests and

wetlands and thus is especially vulnerable ecologically (and in fire susceptibility, at least so far as the peaty wetlands are concerned: e.g., Wambaw Swamp, Hell Hole Swamp) to even very minor lowering of the watertable. A somewhat similar high-watertable forest mosaic at Green Swamp in west-central Florida decades ago showed the ecological effects of watertable lowering above heavy pumping of the principal limestone aquifer, it being closely related to the limestone and aquifer situation just beneath FMNF (studies at South Pasco well field by the USGS and SW Florida Water Management District). Reduced spring flow and stream flow is also to be expected from heavy pumping of a shallower aquifer (more directly affecting a spring) and from a decline in watertable (more directly affecting a stream). Groundwater extraction proposals will need to be examined extremely carefully and professionally and from an ecological as well as hydraulic and land-use "footprint" perspective. [20-1]

There are also less-obvious risks or threats associated with any future proposal for groundwater extraction, revealed by similar situations occurring in the past elsewhere. There is much room for misinterpretation of the vulnerability of the surface ecosystem and hydrologic system to heavy and prolonged groundwater pumping. The simplest common misinterpretation is misconstrual of the conceptual model of the aquifer stratigraphy. Another common misinterpretation involves pumping-based hydraulic tests for vertical interconnection. Persons responsible for FMNF should at least know of the ways that hydrologic assessments may be faulty or biased. Extremely brief descriptions follow. A geologic formation beneath the uppermost principal aquifer may have a different lithology (e.g. here, sand vs. limestone) and a different geologic formation name (e.g. here again, Black Mingo Fm. vs. Santee Limestone) and then be assumed to be a different aquifer, that is a different hydrologic or hydraulic unit (a hydraulic unit implying direct interconnection). This taxonomic "splitting" has been done intentionally by proponents of new pumping in other areas. A single aquifer or hydraulic unit, however, may consist of several stacked layers of geologic units of different names and lithologies, as has been shown for the Tertiary limestone (mainly Santee Fm. here) and the underlying Tertiary sand aquifer (mainly Black Mingo Fm. here) in other nearby areas of this combined system to the northwest of FMNF. It is a mistake to assume or propose that pumping from the deeper stratum does not involve extraction from that (or those) shallower one above it, and especially a mistake to conclude that the surface wetland or shallow-watertable environment will be unaffected. Hydraulics, not nomenclature or lithology, are the direct factors. Technical evaluation of the interconnection of the water table, or else the uppermost principal aquifer, with deeper aquifers from which heavy pumping is proposed is notoriously difficult and chronically misinterpreted even with a hydraulic perspective. Estimation of permeability of intervening potential confining units (strata) has sampling difficulties for obtaining representative average samples (plus effective localized breaching can be missed). More typically, pumping-test data are misinterpreted. Even where heavy long-term pumping of an aquifer would in fact acutely affect (lower) the water table and greatly affect forest ecosystems, the interconnection of a deeper aquifer with the shallow watertable aquifer can be missed or misinterpreted despite the use of pumping tests thought (or purported) to be specifically designed to evidence such an interconnection. The key difficulty is often failure to differentiate the concepts of "evidence" and "test" (both used here as a verbs). Lack of evidence (noun) for interconnection in a pumping test is often misconstrued as direct evidence for some opposite condition, i.e., for a lack of effective interconnection, when in fact it is lack of evidence and does not indicate strongly one way or the other regarding interconnection. The most common and dangerous error is in test pumping from the deeper aquifer and seeing no drawdown in observation wells in the water-table aquifer (or indeed, any shallower aquifer) and concluding a lack of effective interconnection. If one does see a concurrent drawdown, that then is very strong evidence for an effective interconnection. But when one does not detect any drawdown in the shallower aquifer that typically does not indicate or strongly suggest that there is no effective interconnection that could prove troublesome (up to disastrous) under future widespread, prolonged heavy pumping of the deeper aquifer. Judged by pumping test and wellfield experience worldwide those wellfield conditions (wide, pronounced,

prolonged pumping) are the ones that eventually exhibit the clear interconnections where they exist. You may not see any effects in a medium-length pumping test (say, 72 hours) and far less likely in a short one (say 12-24 hours) but that does not mean that interconnection may not be ecologically substantial after a few years of heavy pumping. And wellfields are usually permanent. One main reason that such pumping tests are insensitive to actual interconnection and effective downward leakage and drainage of the surface environment is because shallow aquifers can readily replace leaked water by lateral flow under small hydraulic gradients. The critical item is long-term effect. The USFS should have expert technical advice in evaluating the acceptability of any proposed heavy prolonged pumping (short-term heavy pumping, say for temporary excavation dewatering in construction, may be perfectly acceptable and there one would be concerned more with where the pumped water was discharged, especially if muddy). Another factor in any future groundwater use involves water chemistry (quality). If deep aquifers are demonstrated to be safely pumped for use by distant users, any salts-reduction treatments (e.g., reverse osmosis) should be done nearer the distant users (even if this is less efficient in terms of pumping) to avoid discharge of locally atypical saltier wastewater in FMNF itself. The likely tight interconnection between biotic communities or ecosystems and the prevailing water-table regime (e.g., depth to water table or depth of water, and typical variation, both seasonal and among years) makes it very likely that small hydrologic changes, if persistent, will have appreciable ecological effects. A lowering of average watertable elevation may be more visually apparent by, say, pines colonizing into cypress forests than by any other observation save detailed water-level measurements and data analysis. Subtle changes in hydrology have the ready potential for significant to substantial changes in local biology in an ecosystem where the water table lies close to the surface, whether above or below, and small shifts in water levels can have large shifts in ecological forces, say especially from flooding. [20-3]

There has been some concern among groundwater hydrologists and others that South Carolina may be susceptible to pumping-induced aquifer compression and ground-surface subsidence. In such a case, oddly, heavy pumping of a deep aquifer could cause the surface environment to become wetter by becoming physically lower. Thick major sand aquifers with appreciable clay content, say as interlayers, are most susceptible to this problem, and then only if heavily pumped to produce a large (broad and deep) drawdown. Careful attention should be paid to any targeted studies of these same aquifers where pumped heavily in other areas of southeastern United States (e.g., Grand Strand). Precise re-leveling of old monuments can sometimes detect a lowering of ground level. Any major wellfield planning or development of hydraulically low-risk deep aquifers should include rigorous assessment of this wide-acting factor as well, because this forest (vs., say, Sumter NF) would be so much more vulnerable to the effects. [20-4]

Organic sediments (peat, muck, peaty or mucky clays or sands) deserve some special attention not only because of their ecological value (as specialized habitat) and paleoecological-research value, but also because they have special threats. They are combustible and can be lost in severe fires, especially when overdrained, and they can be economically valuable as a mined or extracted product, perhaps especially when misrepresented as a "renewable" material or a "mineral" material. The organic matter is not mineral (it has no regular crystalline structure, nor any set chemical composition). Renewal (replacement) times, if inferred from original emplacement (accretion) times, would be minimally a few thousand years for thicknesses worth the effort of mining. This is not truly renewable in the generally accepted sense. Special caution must be given to evidence for any supposed rapid accretion based on dating of shallow layers. For notable example, shallow samples (say, <0.5 m) of peat may give very young 14C dates by the effect of root intrusion, implying incorrectly that peat deposits can renew relatively quickly. Worse, mined deposits revert to ponds too deep to form peat. The original deposit formed over a long period of rising water table and was never deep. The textbook pond-filling sequence for peat-bog development is incorrect for most southeastern United States situations (it applies mostly to glaciated terrain of the upper Midwest) and should not be allowed to

direct decisions here. The argument that organic-sediment deposits are "renewable" (say, as a timber crop is) is inaccurate but its use has been attempted in the state for Carolina Bays. There have even been more extreme preliminary proposals and true-expert advice should be available to FMNF to evaluate any in the future (flooding a Carolina Bay peat deposit with a lye solution to extract valuable humic acids while supposedly "leaving" the peat after the leaching and collection was one such proposal). [20-6]

Geologic Materials Subsurface materials in addition to groundwater at FMNF are likely to have continued and perhaps increasing pressure for extraction, especially given the continued urban and industrial growth in the wider Charleston metropolitan area and especially if private entities hold any "mineral rights." Additionally, any low-elevation urban or urbanizing coast is going to have enormous eventual demands for fill or raised-pad material under conditions of rising sea level (which also defines freshwater drainage base level). Geological resources definitely include abundant limestone, sands, and some peat or muck deposits (and perhaps some geologically young marine shell deposits), even while common conceptions of "mineral resources" would be for more valuable and localized deposits (e.g., ores) and while peat and muck are not technically made of minerals dominantly. Florida successfully fought attempts to consider and mine the limestone bedrock of Everglades conservation areas as "minerals," which at the very least shows that such attempts will likely come eventually to similar FMNF and should be planned for. Additional South Florida wetland areas once slated for conservation have been extensively mined in recent decades (see NW of Miami on Google Maps or similar photographs). South Carolina has previously faced the threat of mining of peat and muck deposits (in Carolina Bays) on the pretext that these plant-origin geological materials were "renewable" and would "naturally grow or accrete back" in the deeper depressions the mining left behind. As noted above, FMNF officials should be aware (1) that such deposits took a few millennia to accrete, or to "renew," while true renewable are restored on time scales of a growing season up to a few decades. No higher-value (per mass) geologic material is known to be available in commercial abundance or concentration (e.g., phosphate, or titanium minerals in heavy sands). [20-8]

Ch 3 3.2.2 Geology 3.2.2.1 Affected Environment- Minerals- Removal of minerals p. 54- Sand- In this section the only current mention of sand mining is dredging in waterways. Other sources of sand exist within the Forest. For example, in areas outside the FM Nat. Forest, sand from former beach and terrace deposits above sea level is often mined for fill material (upland borrow sites). These deposits are often covered with pine forest since the soil is too poor for other agricultural uses (colloquially know as "pine-barrens"). Examples of these areas are the ridges the Bethera and Cordesville communities sit upon. Unless surface mining is expressly prohibited with the Forest boundaries, this possible surface-mined salable resource should be mentioned or addressed in some form before the limited mention of "upland borrow sites" in the fourth paragraph of this section (p. 57). [22-2]

3.3.2 Geology - Pages 50 to 51 * "...phosphate-rich Oligocene and Miocene-age deposits are found overlying the Santee Formation and underlying the Pleistocene formations....The phosphate industry is no longer active in the state." Comment - In time other phosphate deposits will decline and be worked out. These virgin phosphate-rich deposits could become exploration and mining targets. [36-2]

Draft Francis Marion Forest Plan 3.3.4 Minerals and Energy Suitability * Look good. Mineral develop would also be on a case-by-case basis. [36-6]

draft FMNG Forest Plan Assessment, December 2013. Page 6 - Energy and minerals should continue to be part of the multiple uses in the new forest plan as they were in the current forest plan. Page 405 - 10.1.1.1 (2) Minerals For acquired lands, limestone and sand, as well as phosphate, would be leasable minerals unless congress has made other provisions as they did by providing for quartz

contracts specific to the Ouachita NF in Arkansas. Otherwise, responsibility was placed with the BLM to manage the Federal mineral estate as required by the Mineral Leasing Act (as amended) and other Acts etc. The Forest Service is the surface manager. Page 408 - Locatable Minerals: Are lands of the Francis Marion public domain or acquired? Since south Carolina was an original colony, I expect they are acquired and are not open to mineral claims. Minerals (normally locatable) on lands acquired (purchased or received) under the Acquired Lands Act of 1947 by the United States or found on American Indian reservations are subject to lease only (43 CFR Group 3500). An aspect of acquired lands is that the mineral estate can be split with the minerals, oil and gas in private ownership. The owners have a right to access what they own, but must work with the Forest Service if they must disturb the surface. Page 409 - No Triassic basin in South Carolina. Not entirely true. Wendell M. etc, 1974, Buried Triassic Basin in the Central Savannah River Area, South Carolina and Georgia, Geological Society of America Bulletin, Feb. 1974, v.85, n.2, p.311-320. Also, the Deep River Basin extends slightly into South Carolina. Olsen PE etc, 1998, The oldest Late Triassic footprint assemblage from North America, Southeastern Geology, v.38, n.2, p.77-90. Typically found in the mountains and not in the coastal plains? Most Triassic basins are in the Piedmont region. The Piedmont rocks also underlie the Coastal Plain. As unlikely as it may be, there could be small triassic basins buried under the coastal plain and not yet discovered. Page 410 - Mineral Materials, often referred to as salable minerals, would be leasable on federal acquired lands. This would include limestone. Page 412 - Soil Liquefaction - The earthquake does not force water to seep into the material, it causes a saturated unconsolidated material like sand or fill to briefly act like a liquid. This magnifies the motion of the earthquake and the effect it has on buildings. Another event that earthquakes can cause is sand blows. See draft EIS comments. Page 416 - Map of Francis Marion National Forest: Georgetown Co./Charleston Co. boundary along Santee River mislabeled - Should be Georgetown Co./Berkeley Co. [39-1]

Thank you for the opportunity to review the Francis Marion National Forest Plan and Environmental Impact Statement. The BLM Eastern States Office has reviewed the documents and notes that a major focus of the Plan is to restore native ecological systems in the forest and there is no projected mineral removal, as summarized below: (From the Plan): Minerals. Removal of mineral materials is the only management activity that has the potential to affect the geology of the area, including groundwater supplies. Currently the Francis Marion has no mineral activity for the following reasons: * No known potential for oil, coal or natural gas development exists on the forest, due in part to no Triassic basin, or its associated hydrocarbon resources, being identified; and * No known deposits of gold, silver, or copper occur on the forest; therefore, there are no known outstanding mineral rights. [40-1]

The potential exists for two salable mineral products: limestone and sand: * Limestone. The Santee Formation has high enough quality limestone that mining is occurring on private lands near the northern edge of the Francis Marion. Currently Martin Marietta is mining limestone near Jamestown. The company is producing products for road base and agricultural fertilization, which are considerable salable mineral products. In the past, the forest has received proposals for mining limestone. Each proposal was turned down for various reasons. Since the agency could only give a five-year minerals material contract, and the area of interest contains a variety of rare or at-risk species, the inquirers have not pursued it further. While the Gulliard Lake Scenic Area has limestone, it is protected from mining as a forest-designated scenic area. [40-2]

* Sand. There is questionable potential for dredging sand from rivers, but whether a special use permit from the Forest Service would be needed or not is determined by the actual ownership of the river bed. On larger rivers, the state owns the river bed and the South Carolina Department of Health and Environmental Control (SCDHEC) would process the sand dredging permit, typically with a public notice and comment period. On smaller rivers, where the river bed is national forest land, the permit would have to be approved by the Forest Service. The agency has not received any requests to

develop sand dredging operations. [40-3]

The BLM Eastern States Office has no official comments on the Plan, other than to note that the Francis Marion National Forest, Draft Forest Plan Assessment (referenced on page 8 of the EIS), incorrectly refers to the General Mining Law of 1872, which does not apply to acquired lands (see Section 10, Renewable and Nonrenewable Energy and Mineral Resources). [40-4]

Concern: [Seq#36] The Forest Plan direction in the Coastal RIZ should be able to improve the FRCC by more than 50% , such as 2500 acres (FRCC 1), 1600 acres (FRCC2) and 3700 acres (FRCC3) because the use of Wyden Amendments and "all lands approach" will create new opportunities. [ID#36]

Associated Comments: [Seq#36]

22. Page 72: Table 2-7, Fire Regime Condition Class (by year 2026)-greater opportunity to move more than 50% of the fire/fuel managed acres of the forest in the Coastal RIZ in to FRCC 2 and 1. Although the goal of increase FRCC 1 acres by a factor of 3 (from 780 to 2500), more than 50% of the upland acres could be shifted into FRCC 2 or 1. Given the context of the newly approved Awendaw CWPP, the USFS interest on increasing Wyden Agreements and an "all lands" approach, this seems appropriate. As a suggestion, a challenging, yet achievable FRCC goal for the Coastal RIZ would be by 2026: FRCC 1 2,500 ac.; FRCC 2 1,600 ac; FRCC 3 3,700 ac. [16-21]

Concern: [Seq#37] The Forest Plan direction should clarify the number of existing Wyden Amendments because it is not clear how many agreements are needed to achieve a 10% increase. [ID#37]

Associated Comments: [Seq#37]

11. Page 36: We thoroughly support the increased use of Wyden Agreements to further the ecological objectives of the Plan. However, it is unclear whether a 10% increase is a sufficiently ambitious objective without knowing the current number of Agreements in use. [16-11]

Concern: [Seq#38] The plan should emphasize timber production, including small diameter pine production, because of the significant role the Francis Marion has in supporting the state's economy, shortages of small diameter pine in the region, and the benefits of protection from wildfire and insect infestations [ID#38]

Associated Comments: [Seq#38]

With that in mind, we suggest that timber production be a more deliberate emphasis in the Francis Marion forest management plan and also on the ground. We are encouraging private landowners to be more active forest managers to ensure forest economic and environmental health and their own financial success, and we as government landowners should do likewise. [17-2]

Increased timber harvesting on the Forest will not only help support South Carolina's forest industry, but it will also provide other benefits. The South Carolina Forestry Commission and the USDA Forest Service are partners in wildfire prevention and control, so we are keenly aware of the high fire danger

that results from over-stocked forests. The work that is planned on the Francis Marion to reduce fuel loadings will help mitigate this risk and is extremely important to citizens who live in this area as well as adjacent landowners. [17-4]

What is only briefly recognized in this section however, is the critical importance of timber harvest and active forest management in maintaining these economic and environmental services. Across the South, the pace of active management on National Forest System lands has declined over the course of the past 30 years, which can be attributed to many factors from decreases in funding to an abundance of appeals and litigation on timber projects. [26-3]

This decline has had a variety of detrimental impacts on forests and private forestland owners in the South. Fewer harvests, especially reduced small diameter thinning, as well as a reduction in prescribed burning has made the southern national forests more prone to wildland fire and more susceptible to devastating insect infestations. This has in turn elevated those risks on adjacent state and private lands, as these threats do not recognize ownership boundaries [26-4]

The reduction in management has also led to a decline in quality wildlife habitat, especially a reduction in early successional habitat. Our southern national forests no longer have the diversity of age classes and densities that adequately support healthy populations of wildlife species. Finally, a reduction in NFS active management across the South has played a role in job losses, mill closures, and decline in economic prosperity in our rural communities. The level of active management needs to increase for all these and other reasons, and the forest planning process is a crucial place to start. [26-6]

Concern: [Seq#39] The Francis Marion National Forest should post prescribed burn schedule because it will improve public safety [ID#39]

Associated Comments: [Seq#39]

First, let me say that I am glad to see that you plan to increase control burns in the Francis Marion Nat'l Forest (FMNF). It will bring many benefits to its ecosystem. I would like to see a posting of the burn schedule posted online, so that people can avoid making plans for an area to be burned. This is a safety issue. [8-1]

Concern: [Seq#40] The forest plan should address the frequency of prescribed burning in hardwood forests, because it can impact rare plants within those communities. [ID#40]

Associated Comments: [Seq#40]

Based on feedback from our forester, we are concerned that a 5-8 year burn intervals in solid hardwood sites seems a bit on the aggressive side. From reading the stand by stand ecological data it seems that they are referring to using natural streams and wet areas as firebreaks (typical forest service practice). This practice would mean the fires would be creeping into the solid hardwood stands on days with enough fuel moisture. He has no qualms about this practice (assuming it is the plan) as it would very closely mimic the way fire would have historically entered these stands. An added benefit of this practice is the benefit that less firebreaks would need to be plowed/rehabbed and therefore less chance of negative ecological impact. However, we would be slightly concerned if they were going to use aerial ignition in large hardwood blocks every 5 years [23-6]

P 100 - the calcareous slopes above Wambaw Creek on FR 204 are apparently included in the burning regime of the adjacent pine stands, and are burned too often to sustain this unique plant community [24-25]

Concern: [Seq#43] The burden of infrastructure development should be addressed by counties that border the Forest because this growth is degrading our ecosystems. [ID#43]

Associated Comments: [Seq#43]

DC-F-3(e). Respond to Population Growth and Development. ? The Francis Marion continues to yield too much to increasing area population explosion. As a direct result ecosystems throughout are degraded and more and more land loses its national forest character. It's past time to reverse that degradation and put the burden of infrastructure development on the population centers who welcome it. The intrusion is neither in harmony with the natural setting nor fragile ecosystems. I have already noted the recent extirpation of American chafseed on Witherby. I could easily list dozens of other infractions. [25-20]

Concern: [Seq#44] The Forest Plan should identify, protect and manage roadless areas because of their ecological and environmental value. [ID#44]

Associated Comments: [Seq#44]

** The EPA supports efforts to implement the nonpoint source (NPS) total maximum daily load (TMDL) program. Nonpoint source TMDLs and watershed-based plans designed to implement the NPS TMDLs, provide the necessary link between actions on the ground and the water quality results to be achieved. * The EPA continues to support planning at the landscape level to address broader ecological concerns such as biodiversity, watershed maintenance and restoration, and forest fragmentation. * The EPA recommends that ecological and other environmental values should be the primary driving factors in the identification, protection, and management of roadless areas in Francis Marion. [38-6]*

Concern: [Seq#45] Current SC Department of Natural Resources should allow for hunting of feral hogs at night, year-round, and with any weapon because of the ecological degradation caused by these invasive species. [ID#45]

Associated Comments: [Seq#45]

I would also like to see that hunters have the ability (via permit?) to hunt feral hogs at night, year-round, and with any weapon. The USFS needs to press this issue with SCDNR. Current regulations have created an oasis for feral hogs. [8-3]

Concern: [Seq#47] The FEIS should address the direct and indirect effects on private property and the associated private property rights because this is necessary to be in compliance with NFMA and

Associated Comments: [Seq#47]

The Draft Plan recognizes that the majority of the property within the resource zones and National Forest boundaries are private property, yet fails to differentiate how the proposed actions do not, and cannot, apply to private property. The Forest plan fails to consider how the proposed action may effect the private lands or the associated property rights. The failure of the Draft Plan to delineate how the plan can only applies to National Forest lands establishes an illegal Forest Plan that is in excess of the US Forest Service's delegated statutory authority. The Failure to disregard the direct and indirect effects to private property and the associated private property rights would violate both the National Forest Management act and NEPA. [9-1]

Concern: [Seq#48] The sustainability concepts of "green buildings", green parking, rain water harvesting, rain gardens, solar lighting and renewable energy should be included in the forest plan because they would enhance and protect diversity and ecosystems; improve air and water quality; and conserve and restore natural resources. [ID#48]

Associated Comments: [Seq#48]

The EPA recommends some sustainability concepts which could be considered by the USFS in the final management plan and Final EIS: 'Green Building' 'Green building' is the practice of creating structures and using processes that are environmentally-responsible and resource-efficient throughout a building's life-cycle from design to construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also potentially known as a sustainable or high performance building. Green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by: - Efficiently using energy, water, and other resources - Protecting occupant health and improving employee productivity - Reducing waste, pollution, and environmental degradation For example, green buildings may incorporate sustainable materials in their construction (e.g., reused, recycled-content, or made from renewable resources); create healthy indoor environments with minimal pollutants (e.g., reduced product emissions); and/or feature landscaping that reduces water usage (e.g., by using native plants that survive without extra watering). In the United States, buildings account for: - 39 percent of total energy use - 12 percent of the total water consumption - 68 percent of total electricity consumption - 38 percent of the carbon dioxide emissions Potential benefits of green building can include: Environmental benefits Enhance and protect biodiversity and ecosystems Improve air and water quality Reduce waste streams · Conserve and restore natural resources [38-8]

Green Parking Green parking refers to several techniques that when applied together reduce the contribution of parking lots to total impervious surfaces. From a storm water perspective, green parking techniques applied in the right combination can dramatically reduce impervious cover and, consequently, reduce the amount of storm water runoff. Green parking lot techniques include: setting minimums of permanent parking spaces; minimizing the dimensions of parking lot spaces; utilizing alternative pavers in overflow parking areas; using bioretention areas to treat storm water; and encouraging shared parking, wherever feasible. Green parking lots can dramatically reduce the creation of new impervious cover. How much is reduced depends on the combination of techniques used to achieve the 'greenest parking'. While the pollutant removal rates of bioretention areas have not been directly measured, their capability is considered comparable to a dry swale, which removes approximately 91 percent of total suspended solids, 67 percent of total phosphorous, 92 percent of

total nitrogen, and 80-90 percent of metals (Claytor and Schueler, 1996). The North Carolina's Fort Bragg vehicle maintenance facility parking lot is an excellent example of the benefits of re-thinking parking lot design (NRDC, 1999). The redesign incorporated storm water management features, such as detention basins located within grassed islands, and an onsite drainage system that exploited existing sandy soils. The redesign reduced impervious surfaces by approximately 40 percent, increased parking by 20 percent, and saved 20 percent or \$1.6 million on construction costs over the original, conventional parking lot design. [38-9]

Briefly, three other sustainable activities which may be applicable to the USPS' general management plan are as follows: o Green Detention Ponds o Rain Water Harvesting o Rain Gardens o Solar lighting or other renewable energy sources for buildings and facilities The EPA asks that the USPS consider these recommendations in its development of its final land management plan and Final EIS. [38-10]

Concern: [Seq#49] In the Wambaw Resource Integration Zone S-5 Gulliard Lake Scenic Area should be preserved because it has outstanding features, such as levees. [ID#49]

Associated Comments: [Seq#49]

P 98 - the fern is gone from the bluff, and the most outstanding feature of this area may well be the incredible levees that are likely the result of 18th and 19th century Piedmont erosion. This area should definitely be preserved! [24-23]

Concern: [Seq#50] DC-F-2(n) under supporting information, any assessment of wind turbines should evaluate the effects on birds because of the potential for significant adverse effects. [ID#50]

Associated Comments: [Seq#50]

P 32 - bird kills must be included in any assessment of developing wind power on the Francis Marion. [24-7]

Concern: [Seq#51] Chapter 1 of the forest plan should be shorter because: 1. Language about what a plan should do could be removed; 2. The six themes could be shorter since there are overlaps and redundancies; 3. Management strategies need to be identified as not being plan components and cannot be used to meet species diversity requirements. [ID#51]

Associated Comments: [Seq#51]

Plan structure Chapter 1 seems to be more about what the plan should do than what it actually does. This kind of language should be removed. Organization around the six themes may have been beneficial to the planning process, but it makes the plan more difficult to follow, including considerable overlap and redundancy. The plan should be designed for the intended user. On the other hand there appears to be good integration of plan components for wildlife with fire management and recreation. [29-4]

Concern: [Seq#52] The plan should clearly identify all areas with the same set of plan components because this information is not easily found. [ID#52]

Associated Comments: [Seq#52]

Highlighting the different fire use opportunities by designating management areas based on this makes sense. However, there are other land units that have unique plan components and meet the definition of management area, but this information is not easily found. All areas with the same set of applicable plan components should be clearly identified. [29-11]

Concern: [Seq#53] Planners should correct the prescribed fire acres to 55K rather than 50k (p62) but also evaluate the feasibility of shifting burning to later in the season because winds and atmospheric conditions are less stable during that time of the year. [ID#53]

Associated Comments: [Seq#53]

Pg 62 - Prescribed Fire Increase. A) 35K acres base level plus 20K acres increase = 55K acres not 50K acres. B) Are you suggesting you will increase your growing season rx acres by 400%? If so, this suggests you will shift much more of your burning to the later season when winds and atmospheric conditions are less reliable or you will greatly increase the size and scale of your burn units/compartments. Efforts are laudable but considering the modest goals proposed elsewhere, this particular strategy seems ambitious, but again is much needed for ecosystem health. Pg 65 - Within RCW Foraging Habitat - Define minimum rotation age [21-15]

Concern: [Seq#54] The plan should include the following guideline " Herbicides will not generally be applied to roadside corridors to prevent invasive plant spread. Instead herbicide use will be targeted to know invasive plant infestations." because of the need to protect diverse plant species. [ID#54]

Associated Comments: [Seq#54]

25. On pg 118 under Standards for Roads and Special Uses. S22 is a great bullet to help reduce future problems with invasive plants and increased habitat management concerns. Consider adding a bullet to this section. "Herbicide will not be generally applied to roadside corridors to prevent invasive plant spread. Instead herbicide use will be targeted to known invasive plant infestations." Roadside edges in the FMNF often contain incredibly diverse plant species. [16-24]

Concern: [Seq#55] The forest plan should include an additional guideline "Discourage the movement or use of offsite firewood on the Francis Marion because ecosystem sustainability will be enhanced. [ID#55]

Associated Comments: [Seq#55]

23. Page 115-116 In section 3.2.2 Guidelines for Ecosystem Sustainability, possibly include an additional bullet: a. G42. Discourage the movement or use of offsite firewood on the FMNF. [16-22]

Concern: [Seq#56] The guidelines for vegetation management should be changed because these guidelines will result in overstocking. [ID#56]

Associated Comments: [Seq#56]

3.2.1 Guidelines - Guidelines for Vegetation Management- Proposed tree restocking will result in overstocking. [25-35]

Concern: [Seq#57] Guidelines for RCW should be standards and desired conditions should be based on natural range of variation and the RCW recovery plan. RCW habitat should be its own management area because then managers would know where applicable plan components for RCW would apply. [ID#57]

Associated Comments: [Seq#57]

The draft plan includes the following guideline: "Supply trees for future cavity trees and clusters in abundance. Manage for large diameter, old longleaf pines throughout the landscape managed for red-cockaded woodpeckers." This should not be a guideline; it is really a goal for the landscape managed for red-cockaded woodpeckers. Desired conditions for this vegetation should then be more specific, and based on NRV and the Recovery Plan. The forest plan also needs to clearly identify the "landscape managed for red-cockaded woodpeckers" as a management area so that everyone knows where these desired conditions would apply. [29-28]

Concern: [Seq#58] Guideline G44 should be increased beyond the 5-meter buffer around historic properties because this seems inadequate. [ID#58]

Associated Comments: [Seq#58]

Pg 116 - G44 - Consider increasing 5 meter buffer around historic properties. Seems inadequate. [21-3]

Concern: [Seq#59] The plan should delete "desirable non-native" because using these exotics are not desirable, not necessary and pollutes the environment. [ID#59]

Associated Comments: [Seq#59]

DC-F-1(u). Forest Opening Associates. ? Delete desirable non-native. Target game species did well prior to the introduction. Using those exotics on the Francis Marion only pollutes that environment. [25-15]

Concern: [Seq#60] The plan should explain the difference between standards and guidelines because a purpose statement and criteria needs to drive whether a standard or guideline should be used. [ID#60]

Associated Comments: [Seq#60]

There appears to be an effort to include a purpose statement for guidelines so that consistency with

them may be determined. The plan introduction should include an explanation of the difference between standards and guidelines, the role of the purpose statement for guidelines, and criteria used to decide whether standards or guidelines would be used. [29-10]

Concern: [Seq#61] In Standard S11 page 117. Better define what "within active red-cockaded woodpecker clusters" means. What distance is this from nest or root trees? [ID#61]

Associated Comments: [Seq#61]

24. S11 page 117. Better define what "within active red-cockaded woodpecker clusters" means. What distance is this from nest or root trees? [16-23]

Concern: [Seq#62] At least 10 focal species should be listed for each plant habitat, because the existing list is not adequate. [ID#62]

Associated Comments: [Seq#62]

*Appendix F, page 153: The list of focal species is not adequate. For each plant habitat define at least ten focal/management indicator species. Trends should be positive or stable for each of these species. In addition trends for all TES species should be positive. Focal species should be common or dominant species indicative of high quality groundcover, e.g. *Ctenium aromaticum*, *Aristida lanosa*, *Aristida palustris*, *Sporobolus curtisii*, *Liatris elegans*, *Rhexia alifanus*, *Polygala cymosa*, etc. [18-10]*

Concern: [Seq#63] Water Quality in Dutart Creek should monitored because past disturbance in this drainage may have an effect on pH. [ID#63]

Associated Comments: [Seq#63]

P 62 - Dutart Creek should be monitored for effects on pH by the drainage from the limestone mines upstream, a major current source of water for this creek. Is any pre-mine data on Dutart Creek pH available??? [24-16]

Concern: [Seq#64] The conversion of loblolly pine to longleaf pine should not occur because it will result in reduced air quality from increased burning regiments. [ID#64]

Associated Comments: [Seq#64]

Reduced air quality from increase burning regiments. [14-9]

Reduced air quality from increase burning regiments. [15-9]

Concern: [Seq#65] The Fire Emissions Production Simulator (FEPS) model should be further evaluated because the projected emissions due to prescribed fire may be higher from this model than they actually are. [ID#65]

Associated Comments: [Seq#65]

Notes, prescribed fire: Fire must be initiated on restoration sites as often as the site will burn, usually once/year. A two year burn cycle is required to maintain quality longleaf communities throughout the Francis Marion. That fire frequency for this area has been well established on Dale Wade's Tiger Corner fire plots. To date, burn plans on the Forest have not been met. Safeguards must be put in place, and prescriptions must be modified, so that burn goals are achieved. It is my understanding that Forest Service Fire Emissions Production Simulator (FEPS) used for prescribed burns is a western states model. Additionally, a critical base number included in the formula is hypothetical, may be too high, and may skew projected emissions to be higher than they are. Can something be done to increase the confidence in this projected number? [25-41]

Concern: [Seq#66] The analysis in the DEIS should disclose the effects in changes in the water table because forest ecosystems are affected by small to moderate changes in the water table. [ID#66]

Associated Comments: [Seq#66]

Summary for Hydrologic/Ecological Aspects The FMNF ecosystem is almost undoubtedly very sensitive to even minor shifts in the water-table regime, including shallow surface flooding, and several obvious sources of such minor (or greater) shifting are apparent for this large and valuable area (e.g., wellfield development, climate change). Understanding and confident prediction are clearly needed for effective planning and management. One can hardly overestimate the importance of understanding the controls on, and ecological functions of, the water table (i.e., the water-table aquifer and its upward extension into surface flooding) for a high-watertable and wetland ecosystem. In addition, the water-table system feeds most or nearly all of the streamflow (but with some deeper-origin springs at least possible) and all or nearly all of the innumerable wetland depressions. Understanding both the hydrology and ecological effects of the water table are critically important for at least several main reasons. In a high-watertable ecosystem the near-surface position (whether below or above the ground) of the top of saturation exerts both favorable conditions (mainly water availability, but also dispersion route and aquatic habitat if flooded) and also stresses (including, anoxic soil conditions and outright drowning). It is obvious that an ecosystem with the water table near the ground surface is much more sensitive to small fluctuations in level than, say, ecosystems with the water table two meters above (a lake) or below the surface (e.g., a mesic forest). Small to moderate changes in surface hydrology can easily arise from human activities (e.g., wellfields, adjacent development drainage, mining dewatering) and of course any future climate changes in SE United States are as likely to be expressed in rainfall changes as in temperature. Understanding hydrology allows far better predictions of future ecosystem conditions under changes in hydrological factors. To that last point, it would be worthwhile to make some initial estimates as to how sensitive FMNF's surface hydrology is to rising drainage baselevel, that is, sea level. And of course, the critical other side of the "impact" equation is the biological or ecological linkages between watertable regime (position and short term, say seasonal to decadal return-frequency shifting). No attempt is made here to review what is known at present about water-table hydrology at FMNF or the related ecology. Extensive studies for the former (hydrology) are listed and briefly reviewed in Amatya et al. (2015). USDA Forest Service and local university hydrology and hydrogeology researchers have been extensively involved. These and other existing studies should be closely evaluated for the significance

of their hydrologic findings in application to a high-water table resident ecosystem, particularly its management and its vulnerabilities to future hydrologic changes that may be proposed or imposed. An understanding of the "ecohydrology" is the needed ultimate goal (Amatya et al., 2015), though very basic hydrologic information is required as part (e.g., Callahan et al., 2012, on estimating recharge rates). [20-10]

The water table itself and controls on its position (depth below or height above ground, seasonal fluctuations, extremes at different timescales, etc.). For technical reasons, a water-table aquifer often is mathematically more complex than a deeper confined aquifer (the saturated thickness of the water-table aquifer often changes through short times) and less hydrogeologic emphasis seemingly has been paid to these types. Considerable attention has come instead from agronomy and forestry hydrologist researchers. Expertise and findings from both main disciplines (hydrogeology and agricultural/forestry hydrology) will be necessary to understand the main controls on water-table behavior (position and fluctuations) at FMNF. Amatya et al. (and references)(2015) show examples of the types of relevant research that can yield the needed hydrologic-regime understanding and how they can be built upon. Research often leads to answers that would not have been assumed without it. A potential example lies with the sinkholes. Are we sure that shallow ground water generally flows down in them, as we might be tempted to assume from many sinks elsewhere? It need not though, especially seasonally, and this would be straightforward to answer regarding these unique patchy wetlands. [20-11]

On the ecosystem level and emphasizing now the biota, the effects of a high-watertable regime (mainly acting directly, presumably, on the autecology of individual taxa, but with a cumulative ecosystem influence), a critical overall question is "How sensitive, and in what ways, is the FMNF ecosystem susceptible to small to moderate changes in water-table hydrology?" This resolves itself into many individual questions, of course. The ecologies (for main examples, flooding or drying tolerances) of principal taxa are obvious examples, while shifts in habitat or prey taxa have repercussions farther in the ecosystem. USDA, Forest Service (2012) explores and shows ways to proceed with these basic and critical assessments. "Forensic ecology" via a host of historical records to determine vegetational-landscape and surface-water conditions in early historical times, times unimpacted by modern technology, can yield important and unanticipated information and is an effort well worth considering (for outstanding example, McVoy et al., 2011). [20-12]

Concern: [Seq#67] Springs should be evaluated and protected because they are vulnerable to water-table lowering. [ID#67]

Associated Comments: [Seq#67]

Substantial springs have special ecological functions of fairly wide recognition, but they also possibly existed and functioned as focuses of animal and human activity in the drier era before the widespread development of wetlands and perhaps streams (in southeastern United States generally before 5000-7000 BP, when the pineland also arrived). Ill-advised development (e.g., clearing, leveling, etc.) could readily destroy important deposits adjacent to (or even in) larger springs. Ill-advised groundwater pumping could eliminate springs of all sizes. Blue Spring on Echaw Creek is well known. Others likely exist (Tabor, 1939, mentioned their apparently common existence in the related limestone terrain of the nearby Santee-Cooper project). Blue Springs' likely high vulnerability to water-table lowering (i.e., by its not discharging from a separate and appreciably deeper aquifer) is suggested by its young groundwater age (apparent post-WWII recharging, based on ¹⁴C in dissolved inorganic carbon). Streams and immediate stream corridors probably have similar values and vulnerabilities as the

springs, and for similar hydrologic reasons. [20-7]

Concern: [Seq#68] In DC-F-2(m). Clean Air and Public Drinking Water. The supporting information should disclose the value of buffering area residents from runoff during high rain events and serving as a reservoir to recharge area aquifers. [ID#68]

Associated Comments: [Seq#68]

DC-F-2(m). Clean Air and Public Drinking Water. ? The value of buffering area residents from runoff during high rain events and serving as a reservoir to recharge area aquifers is not appropriately emphasized here. The phenomenon should be in particular brought to the attention of area leaders and administrators. [25-18]

Concern: [Seq#69] The Affected Environment discussion in the DEIS should incorporate information related to phosphate, fossils, earthquakes, in the suitability determination and geologic hazards because this is presently missing. [ID#69]

Associated Comments: [Seq#69]

*3.2.2.1 Affected Environment * Page 53 - Minerals - Phosphate potential not discussed, yet it was noted that "...phosphate-rich Oligocene and Miocene-age deposits are found..." to the south in the forest. * Fossils - are there rules for collecting fossils? Should personal collecting be discussed here.? * Earthquakes - Is there any evident of sand blows as have occurred in the Charleston area and southeast Missouri? Could they cause significant damage? ? Holocene And Late Pleistocene?) Earthquake-Induced Sand Blows In Coastal South Carolina. Obermeier SF etc. "...discovered throughout coastal South Carolina..." <http://pubs.er.usgs.gov/publication/70015116> ? Sand Blows and the New Madrid Earthquakes of 1811-1812, Tuttle, M. etc. http://www.iris.edu/hq/files/programs/education_and_outreach/aotm/20/SandBlow_ES_NESTA.pdf * Suitability determination for mineral development - Is there documentation or guidance on making suitability determinations? * Page 56 - Word Missing? Effects of Alternatives on Geologic Hazards. Implementation of Alternatives 1, 2 or 3 would be unlikely to directly or indirectly ?????? geological hazards on the forest. * Overall a good discussion on Mineral Operations. [36-3]*

Concern: [Seq#70] The plan should incorporate the research needs related to geology, paleoecological information and the relationship of natural communities to the water table regime because planning predictions and management decisions are highly dependent on a good understanding of these relationships. [ID#70]

Associated Comments: [Seq#70]

Some Useful Initial Research Research goals in the realm of geology include some that can be directly useful in the short terms, and those that need attention now mainly in terms of protecting their potential now for their future exploration. It might be useful to have a survey sampling of basal organic sediments 14C dated to document about how long it would take to "renew" an organic sediment deposit under FMNF conditions, if it could be renewed at all. It might also be useful to examine a few of the probable "data caches" of paleoecological information, including archaeological information, to (1) demonstrate their value in several sciences, and (2) obtain initial information of

more-nearterm use to forest managers themselves, especially apparent fire-frequency (but including such items as mercury deposition) in the pre-modern and pre-historic past, plus other aspects of natural-era (or at least pre-European) forest ecology. Documenting the relationship of the principal or notably important or present natural communities to the water-table regime (USDA, Forest Service, 2012) would go a long way toward being able to predict any negative impacts of proposed future modifications or activities, including ones that might be naively thought of as minor. It is assumed that an ecosystem above a high water table (i.e., shallow, to above-ground) is highly attuned to it, and that small changes in the annual procession of level will have a profound effect (even though a forest above a deep water table may not "feel" or respond at all to a similar or larger change). A tight interconnection would, of course, be far stronger evidence in future decision making regarding water resources if it is documented rather than inferred or assumed. Ultimately, confident planning predictions and management decisions are also highly dependent upon a good understanding of the surface and shallow-zone physical (and to an extent, geochemical including pollutant) hydrology of the FMNF ecosystem. Continuing, and appropriately focusing and integrating, the growing body of information on the overall water budget of FMNF is essential here. [20-9]

Concern: [Seq#71] The analysis related to ground water should disclose information about the existence of small caves, underwater caves, and repositories of archeological and environmental history because they could be affected by plan implementation. [ID#71]

Associated Comments: [Seq#71]

The same Santee Limestone near the town of Santee (to the NW of FMNF) has small caves in it. These are known because parts lie above the water table and were noticed and explored. Underwater caves may exist in FMNF (Amataya n.d.)(springs and sinkholes also hint at this). Carbonate cave flowstone formed in former times of lower sea level and lower water table can possess important isotopic evidence of climate in these previous times. Underwater caves can possess endemic fauna as well. [20-2]

Environmental history FMNF has several types of sites that can have special, up to unique, value as localized concentrated repositories of archeological and environmental-history (paleoecological and paleontological) evidence. Sinkholes (solution holes), substantial springs, peat- or muck-filled wetlands, and stream corridors are of obvious potential value here. Isolated drier sites that were former high-water-times focuses of animal and human (including historical) activity are also important in wetland environments. While streams are found throughout the state, the other mentioned features are not common elsewhere in the state but are found in important occurrences in FMNF. Sedimentary charcoal evidencing past fire regimes and their possible shifting; pollen, spores, and other plant remains evidencing past flora directly and thus past ecology and climate and their shifts and changes; paleontological remains (bones, teeth, scales, and other remains) similarly evidencing past fauna and environments; and undoubtedly archaeological remains in or focused adjacent to these types of sites are invaluable scientifically and increasingly are valuable in assessing modern forest management practices (perhaps especially fire regime) and others under possible future shifts in rainfall and water table. Sinkholes (solution holes) are unique repositories of remains from the sinkhole itself and surrounding former environments. Where peat or muck filled, as some (many?) are in FMNF, and thus with a stratigraphic sequence, the past changes or shifts can be shown and the stages or boundaries more easily dated (by 14C, 210Pb, optical luminescence). Wet sites in an unfloded general environment also attract animal and human activity and thus are still more important because they concentrate remains: they are focuses of activity. FMNF recognizes the special importance of sinks by official recognition of the Honey Hill Lime Sinks area of significant

concentration. There are other elsewhere in FMNF, however, also deserving of recognition of their existence and importance. Not all are as conspicuous as at Honey Hill, where high-slope uppermost walls can protrude conspicuously above the level sediment and where surface water may be conspicuous most of the year. Limesinks just as valuable elsewhere can have infilled peaty sediment nearly to the level of the surrounding forest and thus appear similar to the common shallow sand-bottomed cypress "ponds" of far-lesser paleoenvironmental significance. One infilled sink, now for all appearances simply a shallow cypress "pond," was cored decades ago to almost 7-meter depth and 14C dated about half way down to ~11,000 BP (14C years "before present"): an infilled sinkhole of some sort. Sand/muck interlayering found at depth might evidence severe storms, severe fires, or conceivably even repeated earthquake shaking. There is much paleoenvironmental evidence, including paleoclimatic information, stored in infilled sinkholes and their importance should be recognized. Initial investigation of a representative few could help reinforce recognition of their importance. Shallower but much larger depressions in the mineral (sand/limestone) general ground surface (and of yet unclear geologic origin) similarly can contain at least some organic sediment (peat or muck) of wetland origin, also having considerable usefulness in paleoecologic (e.g., paleohydrologic) reconstructions. Wambaw Swamp and Hell Hole Swamp are obvious examples. There are undoubtedly smaller less familiar ones. [20-5]

Concern: [Seq#72] The forest plan should have a table showing the current FRCC and the 2026 acreage goals for the RIZs because it would be useful to compare these conditions among the zones. [ID#72]

Associated Comments: [Seq#72]

27. *General Comment: It would be useful to have a table broken down by RIZs, showing current FRCC in terms of acres and the 2026 goal (the change).* [16-26]

Concern: [Seq#73] The plan should address the scale of prescribed burning on recreationally important species, such as Eastern wild turkey because of the potential negative impacts on these species from prescribed burning during the growing season. [ID#73]

Associated Comments: [Seq#73]

We do have some concerns related to the scale of prescribed burning (thousands of acres at any one time) proposed to occur in Management Area 1. The Forest Service acknowledges that burns of this magnitude may negatively impact wildlife, especially ground nesting birds such as the wild turkey, yet the overall benefit is habitat improvement in the long run. SCDNR agrees that prescribed burning, including growing season burns, is essential for creation and maintenance of habitat for many species, including economically and recreationally important species like Eastern wild turkey and Northern bobwhite quail. We believe that by reducing the scale of individual prescribed burns, especially during the growing season, negative impacts to certain vulnerable species can be avoided or mitigated. [37-2]

Concern: [Seq#74] Planners should check the feasibility of conversion of loblolly plantations to longleaf which requires more burning and creates more smoke than encroaching urban and

associated housing developments will allow because of the undesirable effects to human health. [ID#74]

Associated Comments: [Seq#74]

The encroaching urban and associated housing developments simply will not allow smoke to be a continuing part of their environment. [15-6]

Concern: [Seq#75] The analysis should disclose the feasibility of using grazing animals to control vegetation because the benefits could be useful for a number of practitioners. [ID#75]

Response: [Seq#75]

Associated Comments: [Seq#75]

20. Page 66: 2.3.4, OBJ-MA2(a) Hazardous Fuels, Management Strategy-bullet point listing domestic animal use for vegetation control and fuel reduction. There is some interest in identifying benefits of using grazing animals to control vegetation. A small-scale experiment (feasibility study) may prove educational for a number of practitioners in the range of longleaf pine. TNC would like to encourage such a study, in areas without sensitive ground cover species, even if the experiment goes no further than a NEPA analysis. [16-19]

Concern: [Seq#76] Maritime Forest-Planners should clarify in the plan (p59) whether painted bunting is a species of conservation concern because this and other neotropical migratory birds play an important role in maritime and salt marsh ecosystems. [ID#76]

Associated Comments: [Seq#76]

Pg 59 - DC-MA 1-8 - first paragraph - Painted bunting is an important species. Do you mean species of concern or one of the most visible species? There are lots of species (neotropical migrants, shorebirds, terrapins, and many many more) which play an important role(s) in these habitats. [21-14]

Concern: [Seq#77] Maritime Forest-the forest plan should include sable palmetto in the desired conditions for maritime communities because it is a defining species for those communities. [ID#77]

Associated Comments: [Seq#77]

P 59 - forest composition in maritime communities must include sabal palmetto - it's generally a defining species. [24-13]

Concern: [Seq#78] The forest plan should emphasize the need for fire within and along the edges of ponds because many of the savanna edges have been lost to shrub conversion and can only be restored using intensive fire; for example Morgan Creek Seepage bog needs drastic restoration. [ID#78]

Associated Comments: [Seq#78]

3.3.1 both .3, .4, .5, and .6- Alternative 2 for restoration and preservation of Carolina Bays and

Pocosins is a critical goal to allow ecosystem survival during climate changes. These areas, when not ditched for drainage by man, trap surface water and make it available for both ecosystem use and as a groundwater recharge location. [22-3]

P 53 - I'm not sure I'm interpreting the plans correctly, but the natural ponds on the Francis Marion include many lovely forested ponds - forested with pond cypress and pond gum. These need fire for control of "pocosin shrubs" both within the ponds and along the edges of the ponds, but herbaceous meadows should not be the sole goal for the depression wetlands on the Francis Marion. [24-11]

P 64 - I feel like I'm losing my focus on the plan, but I want to reiterate that many of our ponds are forested and require fire maintenance to keep the understories and edges shrub-free. Many savanna edges have been lost to shrub conversion, and will only return with intensive fire management. [24-17]

P 99 - the Morgan Creek Seepage Bog is largely lost to insufficient fire. It needs drastic restoration. [24-24]

Concern: [Seq#79] In the forest plan, the description of pocosin ecosystems (p55) should change "structure" to canopy because it implies that these systems have an open structure which they do not. [ID#79]

Associated Comments: [Seq#79]

Pg 55 - Composition - Structure - "The ecosystems are dominated by open grassland or savanna canopy structure. Consider changing structure to Canopy. Reads awkward and implies that Pocosins have an open structure, which they do not. Pg 56- Stressors - Mentions shortleaf pine is encouraged on existing sites. Not much mention of shortleaf elsewhere in document. Consider reviewing Shortleaf Pine Initiative Draft Restoration Plan. www.shortleafpine.net [21-13]

Concern: [Seq#80] Landscape structure and connectivity should address the current problem of tree encroachment by hand thinning without chemicals and use of prescribed fire because this needs to be maintained [ID#80]

Associated Comments: [Seq#80]

DC-MA1-3. Depressional Wetlands and Carolina Bay Ecosystems - Landscape Structure and Connectivity does not address tree encroachment which in many cases is loblolly. Most depressional wetlands are so overgrown with moisture and light robbing woodies that fire alone will not restore them. Hand thinning w/o chemicals is required. [25-26]

Concern: [Seq#81] Planners should check the description of mesic hardwoods because shortleaf pine is found primarily on dry sites while spruce pine is a component of mesic hardwoods. [ID#81]

Associated Comments: [Seq#81]

P 56 - again, I'm puzzled, but shortleaf pine is found primarily on dry sites in the Francis Marion; spruce pine is a component of mesic hardwood forests. [24-12]

Concern: [Seq#82] The plan should incorporate Wadboo Swamp drainage to known areas of marl forest in DC-F-1(m) Wet Marl Hardwood and Calcareous Mesic Forests Associates forest because there are documented evidence of this in recent surveys of Cane Gully area. [ID#82]

Associated Comments: [Seq#82]

DC-F-1(m). Wet Marl Hardwood and Calcareous Mesic Forests Associates: Please add Wadboo Swamp drainage to known areas of marl forest as I have documented in recent surveys of Cane Gully area. This includes especially areas in or near compartments 54, 29, 28, 22, and 21. [18-5]

Concern: [Seq#83] Rivers and Stream- the description of rivers and streams should include cypress because these trees are not always considered as hardwoods. [ID#83]

Associated Comments: [Seq#83]

P 61 - again, possible confusion on my part, but river and stream systems include lots of cypress - not always considered "hardwoods" though their woods are hard. [24-14]

Concern: [Seq#84] The plan should address the importance of rare plants and rare habitats in MA2 and not abandon them due to the lack of fire because fire surrogates including canopy thinning, mulching and herbicides can be used to maintain these plant communities. [ID#84]

Associated Comments: [Seq#84]

However, I do not want to see important rare plant and rare habitat areas in MA2 abandoned. This evidently would include (1) pondberry and Litsea sites south of Hoover/Brickchurch Rd in compartments 114/115 as well as very nice upland pine areas and historic chaffseed, (2) Shulerville area Sporobolus pinetorum, and (3) Awendaw Savanna, among others. If these important sites cannot be maintained with fire they should be maintained with fire surrogates including canopy thinning, mulching and judicious use of herbicides. [18-3]

Concern: [Seq#85] OBJ-F-1(g) Threatened and Endangered Plant Species should be improved by explaining how cooperating agencies, including SCDOT, will manage appropriately so as to preserve and enhance chaffseed and other TES roadside populations because this will help to achieve the recovery goals. [ID#85]

Associated Comments: [Seq#85]

OBJ-F-1(g). Threatened and Endangered Plant Species. Restored ecosystems provide ecological conditions to support and enhance existing populations of T&E plants within Management Area 1: 9 populations for the federally endangered American chaffseed, 5 populations for the federally endangered pondberry and 1 population for the federally endangered Canby's dropwort within 10 years of plan approval. Management Strategy: The Francis Marion National Forest supports 4 of 9 previously documented geographically distinct American chaffseed populations. Recovery criteria include, "[B]iennial monitoring shows that 50 protected populations are viable as well as stable or

increasing over a 10-year period" and "[L]ong-term protection is achieved for 50 geographically distinct, self-sustaining populations." The Francis Marion National Forest supports 5 geographically distinct populations for pondberry. According to the Recovery Plan, Pondberry, (Lindera melissifolia) (1993), pondberry may be downlisted to threatened when 15 self-sustaining populations are protected, and delisted with the permanent protection of 25 self-sustaining populations. The Francis Marion National Forest supports 1 population of Canby's dropwort, which contained 10 plants in 2000. The species recovery plan goal Canby's Dropwort Recovery Plan (1990) is that at least 14 sites are currently extant self-sustaining populations and that necessary management actions are being undertaken by landowners to ensure their continued survival. This is not a restoration/management strategy. Please explain in detail how management and recovery targets will be achieved. Among other things, explain how cooperating agencies, including SCDOT, will manage appropriately so as to preserve and enhance chaffseed and other TES roadside populations, for example Plantago sparsiflora. Also please provide restoration targets and management/recovery strategies for all of the sensitive species on the FMNF rare list, not just the federally endangered ones. Since we have now seen chaffseed emerge from the seed bank in plow lines I would like to see some experimentation with soil disturbance in the vicinity of known chaffseed without disturbing any established plants. I strongly support propagation and outplanting of chaffseed and other TES plants so as to reduce the risk to the species as a whole in FMNF if any one population is damaged or destroyed. This will also help to achieve the recovery goals. [18-7]

Concern: [Seq#86] The plan (Table 2-5. Historic and desired average fire return interval by ecosystem.) should change the fire return interval of 2 yearsto 3-5 years because both Lindera and Litsea would be eliminated due to their habitat needs. [ID#86]

Associated Comments: [Seq#86]

Table 2-5. Historic and desired average fire return interval by ecosystem. A fire return interval of 2 yrs will likely wipe out both Lindera and Litsea. There needs to be a differentiation of fire management for wetlands with TES herbs versus wetlands with TES shrubs. Lindera has declined precipitously in wetlands with repeated hot fires. A fire return interval of 3-5 yrs might be appropriate. This could be accomplished by burning under appropriate conditions so the surrounding uplands burn every 2 yrs but fires only penetrate into Lindera and Litsea at 3-5 yr intervals. [18-8]

Concern: [Seq#87] The analysis in the DEIS should include "acres managed for at risk species" because it is needed to properly evaluate how each alternative addresses Issue 1.c). [ID#87]

Associated Comments: [Seq#87]

Issue 1.c. includes this as a significant public issue. The DEIS states that it will be evaluated in terms of the "acres managed for at-risk species." That would be important to know, but it is not included anywhere in the DEIS. [29-13]

Concern: [Seq#88] Tables 2-1 and Table 2-2 in the plan should clarify the plan components needed for SCC species and how the components are accounted for in the effects analysis because it is not clear whether the plan is sufficient to support these species. [ID#88]

Associated Comments: [Seq#88]

Table 2-1 is useful for showing which plan components are relevant to effects on threatened or endangered species, and also for showing how other plan components are needed to promote achievement of desired conditions. What it obscures is the relevance of other plan components that promote activities that could adversely affect these species. It is not clear that the effects of these 5 components are accounted for in the effects analysis. Table 2-2 for SCC species groups is less helpful because there are few plan components listed, which may indicate the plan is deficient for these species. [29-21]

Concern: [Seq#89] Plan components and the range of alternatives should be expanded because the discussion of effects common to all alternatives states: "Additional management may be needed for extremely rare species such as the frosted Flatwoods salamander, Carolina gopher frog, pondberry and American chaffseed.", which invalidates the range of alternatives with regard to these species and requires (per the Planning Rule) additional measures needed to provide necessary ecological conditions for these at-risk species, [ID#89]

Associated Comments: [Seq#89]

The discussion of effects common to all alternatives states: "Additional management may be needed for extremely rare species such as the frosted Flatwoods salamander, Carolina gopher frog, pondberry and American chaffseed." This invalidates the range of alternatives with regard to these species. If additional measures are needed to provide necessary ecological conditions for these at-risk species, the Planning Rule requires that they be plan components, and included in the revised plan. [29-23]

Concern: [Seq#90] The Draft Environmental Impact Statement should have included additional information as follows: 1) the basis for determining individual species of conservation concern; 2) the ecological sustainability analysis, including determinations of group weight; and 3) the relationship between plan components and timber yields because the absence of this information limited our ability to effectively analyze and comment on the draft plan and DEIS. [ID#90]

Associated Comments: [Seq#90]

*Request for more information Our ability to effectively analyze and comment on the draft plan and DEIS was limited in certain circumstances by the absence of information. In particular we request the following information, along with a recommendation from the agency on how best to incorporate comments pertaining to that information into the planning process: * Documentation of basis for determining individual species of conservation concern (SCC) * Documentation of the ecological sustainability evaluation (ESE) analysis, including related determinations like "group weight" * Documentation of relationship between plan components and projected timber yields [29-2]*

Concern: [Seq#91] The plan or DEIS should describe the ecological conditions needed by Species of Conservation Concern because it is not clear how or if they are actually used to develop plan components or in the effects analysis. [ID#91]

Associated Comments: [Seq#91]

One of the strong points of the Francis Marion approach is its identification of at-risk species early in

the planning process and explicit recognition that the ecological needs of these species are important to developing ecosystem components. However, the ecological conditions needed by SCC are not described anywhere, and it is not clear how or if they were actually used to develop plan components or in the effects analysis. [29-15]

Concern: [Seq#92] Appendix E of the DEIS should have disclosed the rationale for identifying individual SCC because it is not possible to comment on why 32 of the potential 45 animal species were not carried forward without disclosure of the rationale. [ID#92]

Associated Comments: [Seq#92]

Species evaluation The rationale for identifying individual SCC is not disclosed. While it looks like the Forest initially cast an appropriately wide net to identify potential SCC, there is no explanation for why 32 of the 45 potential SCC (animals only) were not carried forward into the DEIS. (DEIS Appendix E explains the process, but is not species-specific and includes no rationales.) It is therefore not possible to comment on SCC as part of this DEIS review process. That is inconsistent with the requirements for public participation in the planning process. [29-18]

Concern: [Seq#93] The plan (page 88 and 92) concerning chaffseed should be checked because it seems contradictory. [ID#93]

Associated Comments: [Seq#93]

P 88 and 92 - the information on chaffseed seems contradictory. [24-19]

Concern: [Seq#94] The plan should not convert loblolly plantations to longleaf and continue managing for loblolly, hardwood and mixed stands because of the growth, composition and health of the forest they provide, the increased cost of herbicides' and prescribed burning needed to convert to longleaf pine. [ID#94]

Associated Comments: [Seq#94]

Silviculture is the practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values. Our forest is what it is today because of the efforts and planning of Forest Service personnel; you have done a great job. The fact that you have now selected an arbitrary point in time to revert this management plan to a long ago era, baffles my knowledge of silviculture. The 60% (+/-) acre increase in longleaf (LL) ecosystem to restore a perceived pre-Columbian fire dependent timber type is simply not in the best interest of the forest, a few folks yes, but not the forest. The existing 55,000 acres of Longleaf is currently a constant struggle to maintain with burning restrictions, air quality and urban interface. I hear the references to the diverse ecosystem of LL but fail to see this as any justification given that loblolly, hardwood and mixed stands are equally diverse. [14-3]

I hear the references to the diverse ecosystem of LL but fail to see this as any justification given that loblolly, hardwood and mixed stands are equally diverse [15-4]

Concern: [Seq#95] Restoration of longleaf pine should be stated as a goal because no part of the Francis Marion has been truly restored [ID#95]

Associated Comments: [Seq#95]

One overall concern are the multiple statements that areas "are" restored to longleaf. There is no part of the Francis Marion that can be considered truly restored. The goal to restore is a desirable goal, but a goal. [24-3]

Concern: [Seq#96] Upland Longleaf-. the forest plan (pp 49-50) should describe live herbaceous biomass are restored in months rather than weeks because a few weeks is a short time for recovery. [ID#96]

Associated Comments: [Seq#96]

Pg 49 - Understory -no mention of wiregrass (Aristida stricta)? Pg 50 - Ecological processes- "Vegetation recovers very quickly from fire, with live herbaceous biomass restored in just a few weeks..perhaps consider changing to months..or qualify by adding when burned in the growing season, after March 15. [21-11]

Concern: [Seq#97] Wet Pine/savanna- Planners should consider a growing season burn every other burn because this treatment would be effective to restore the understory. [ID#97]

Associated Comments: [Seq#97]

Pg 51 - Understory - With frequent burning.....including a growing season burn every third burn...I would hope you would consider a growing season burn every other burn. I know the FS Handbook and/or Manual has language stating it is prohibited to conduct consecutive growing season burns, but several districts in R8 bend these antiquated rules. Pg 52 - Stressors. "Few ruts are present" - consider including language addressing alteration resulting from dozer disturbance resulting from wildland fire suppression. Dozer scars last many decades in flatwoods and savannas. [21-12]

Concern: [Seq#98] The ground cover statement (pg 50) in the plan should be changed because the conversion of open loblolly pine stands to longleaf pine stands will not result in this ground cover. [ID#98]

Associated Comments: [Seq#98]

2.3.1 Desired Conditions for Management Area 1, Ecosystems DC-MA1-1. Upland Longleaf Ecosystems and Loblolly Pine Woodlands ? I agree with the conservation of open loblolly pine stands in the short term. It is important, however, to note that loblolly and longleaf are two very different trees. Loblolly has comparatively dense and wide compared to longleaf. Loblolly needles are rapidly decomposing soil builders and do not carry fire as rapidly as the silicon laden longleaf. One would not expect a high quality longleaf groundcover under a loblolly. [25-25]

Concern: [Seq#99] Forest Plan OBJ-F-2(b) should be increased from 50% to 100% control of non-native invasive species in recreational areas and OBJ-F-3(c) should increase to more than 2,000 acres each year because the present objectives will result in re-infestations. [ID#99]

Associated Comments: [Seq#99]

I see nothing in the plan specifically about invasive species, either terrestrial or aquatic. I'm sure you well know that invasive species can decimate an ecosystem in many ways. Species like cogon grass and phragmites as well as some injurious diseases can move quite fast in and through areas and have devastating effects especially on threatened and endangered species. The estimate number one cause of species extinction may just be invasive species. Those species which may currently exist within the boundaries and those which may be future invaders need an early detection and response system that could be built into the plan itself or in an accompanying document. [12-1]

Pg 39 - OBJ-F-2(b) - Consider increasing % control of invasive plant populations, given the high volume of staff and guest visitors visiting the site on a weekly basis. Every effort should be made to eradicate invasive plant populations immediately to prevent further spreading and establishment of additional populations throughout the forest [21-5]

P 39 - recreational and other sites should be 100% controlled for non-native invasive species. To settle for 50% simply ensures immediate re-infestations. [24-9]

2.2.6 Objectives that Apply to Desired Conditions for Social and Economic Sustainability OBJ-F-2(b) Sustainable Recreation. ? Management of exotic invasive species in recreational areas is difficult. The repeated introduction of undesirable species is one of a list of reasons the limit other than passive recreational facilities. Those are one of a very few sites where I could support chemical control as a management tool. My comment on the proposed Steed Creek Road Forest Office cautioned that the introduction of invasive exotics would result was reputed by the reviewing forester. Subsequently exotics now dominate the site. ? I consider 675 acres a blight on the landscape and a conduit to the introduction of undesirable exotic species. They seem to be working very well for wild hogs. ? Not mentioned here are "temporary" openings disked throughout the forest by a SC DNR operator who seems to operate at will. A few years back the operator disked a mature native grass and forb savanna in a SCE&G ROW through the forest near my home. After approximately a decade the site is still recovering. [25-22]

The Division agrees that nonnative invasive species represent a threat to the forest. The draft plan calls for the treatment of up to 2,000 acres each year (OBJ-F-3(c)) using various means to control nonnative invasive species. Since the forest contains 260,000 acres, a goal to treat 2,000 acres each year seems inadequate at best. The US Forest Service should substantially increase the acres treated and implement an aggressive plan to identify new nonnative invasive species as they occur. The Division encourages the use of all accepted methods available to control nonnative invasive species. [44-4]

Concern: [Seq#100] The Forest Plan should clarify how composition will be improved in maritime forests, especially clarify priority #4 [ID#100]

Associated Comments: [Seq#100]

Pg 42 - Timber harvest priorities #4 - How do you propose to improve composition of maritime forest [21-8]

Concern: [Seq#101] OBJ-F-3 (c) should clarify if invasive plant treatments will only occur in areas where at-risk species occur and how does increasing pond depth, limit invasive plant species because currently it is not clear what the rationale is for these statements [ID#101]

Associated Comments: [Seq#101]

Pg 42 - OBJ-F-3 (c) - Are you suggesting that invasive plant treatments will only occur in areas where at-risk species occur. It reads that way. Also, how does increasing pond depth, limit invasive plant species. Please elucidate. [21-9]

Concern: [Seq#102] The plan should prohibit the mowing or burning of bahia grass along roadsides during the growing season because this will favor desirable native grasses. [ID#102]

Associated Comments: [Seq#102]

DC-F-3(b). Non-Native Invasive Species Management. ? Bahia grass is an exotic invasive of special concern. It seems to persist as a desirable roadside groundcover by DOT. Frequent growing season roadside mowing favors Bahia grass so that it dominates the natural native ground cover. Desirable native grasses will outcompete and extirpate Bahia grass in the absence of mowing and annual burning. I can demonstrate that on my property. [25-19]

Concern: [Seq#103] The plan should increase the desired condition (DC-F-1(d) and objective (Obj-F-1(b)) for old growth to more than 10% because old growth is needed to protect and maintain the longleaf and cypress tupelo systems. [ID#103]

Associated Comments: [Seq#103]

I did read the overall intentions plan and responded in a way you probably don't want to hear. In order to get "old growth" the trees have to grow old. I don't think 30 percent of maintained but uncut forest is an unreasonable request in light of these modern "save what we can" times. So I wrote: Maintaining 10 percent Old Growth doesn't seem like very much at all. At the meeting I attended and in the follow up reading much was being made of expanding the Wilderness Areas and using other methods of preservation. Was I attending one of those "fake" input meetings that government bodies make such skillful use of? [2-1]

6. Page 15-16: We strongly support goals for old growth ecosystem retention, and suggest that 20-30% retention may be appropriate particularly for longleaf and cypress tupelo systems. The 10% criterion is repeated in other places of the document. The Plan is unclear on where the 10% goal originates from. We suggest some supporting narrative for this goal. [16-6]

OBJ-F-1(b). Future Old Growth. Designate and manage as future old growth at least 10% of stands over 100 years old in each ecosystem (Section 2.3) within 10 years of plan approval. Why only 10%? The National Forests in the south contain some of the last strongholds of high quality longleaf pine

habitats including diverse groundcover. Why not designate all high quality stands as future old growth? [18-6]

Concern: [Seq#104] High quality longleaf stands should be designated as future old growth because these are some of the last strongholds in the south. [ID#104]

Associated Comments: [Seq#104]

High quality trees, in particular loblolly and longleaf 100+ yrs. are important to the forest ecosystem and should be available for harvest only after careful review and special circumstances [25-17]

2.2.4 Objectives that Apply to Desired Conditions at the Forestwide Scale OBJ-F-1(b). Future Old Growth. ? I admit to confusion over this item. I argue that all 100+ pines should be retained. RCW would nest over whatever range provides suitable food, cover, and nesting trees. [25-21]

Concern: [Seq#105] The plan should include plan components that are necessary for ecological integrity, Until areas are designated for old growth [ID#105]

Associated Comments: [Seq#105]

The draft plan also defers designation of areas to manage for old growth. Until that designation is made, the plan will not include plan components that are necessary for ecological integrity. (If that designation were to be made in the future it would require a plan amendment.) [29-9]

Concern: [Seq#106] Planners should consider that planting for old growth today will not be successful in the future because of climate change. [ID#106]

Associated Comments: [Seq#106]

OLD GROWTH PLANTED WILL NOT GROW IN THE NEW HOT CLIMATE SO THAT IS A COMPLETE WASTE OF TAX DOLLRS. AND A STUPID IDEA. [4-1]

Concern: [Seq#107] Chemicals, including herbicides as well as drum chopping should be prohibited as a vegetation management tool in Management Area 1 or 2 because of the potential environmental effects on waterways [ID#107]

Associated Comments: [Seq#107]

2.3 Desired Conditions of Management Areas - I agree in concept to the Management Area 1 and 2 strategies. There are, however, a number of important and unique to the forest ecosystems, a number of which are fire dependent. Those should be identified and placed under indicated management plans. It should also be noted that a number of property owners who manage their property with prescribed are severely handicapped and pay extraordinary burn fees because of dangerous fuel accumulations on adjacent USDAFS land. I happen to be among those. ? Chemicals, including herbicides, should not be used as a vegetation management tool anywhere on the Francis Marion.

[25-24]

OBJ-MA2 (a). Hazardous Fuels - Drum chopping and the use of chemicals here is not acceptable. Much of Management Area 2 quickly drains into waterways. [25-30]

3.2.2 Standards Standards for Pesticide Use - The use of chemicals, including pesticides, should not be permitted on the Francis Marion. [25-39]

Concern: [Seq#108] Lands managed for ecological integrity should not be suitable for timber production because lands that have been designated as suitable for timber production where a “regulated crop of trees” is not likely to be compatible with desired conditions for the ecosystems or species [ID#108]

Associated Comments: [Seq#108]

Timber production Lands have been designated as suitable for timber production where a "regulated crop of trees" is not likely to be compatible with desired conditions for the ecosystems or species (for example, critical habitat for the frosted flatwoods salamander). There is no information about the timber volume that will be counted on from these lands that should be managed for wildlife. The calculation of Projected Timber Sale Quantity (PTSQ) does assign an expected volume of zero to lands that are not suitable for timber production (Table B-2). The lack of a range of suitable acres in alternatives (68% to 75%) indicates a cursory consideration of this question. The effects of management for timber production in several areas needs to be considered, and if those effects are not compatible with the management purpose the suitability designation must be changed. For example, the management emphasis in MA1 is restoring and maintaining: 1. Fire-adapted ecosystems and associated plant and animal communities; and 2. Habitat for fire-adapted, at-risk species such as the red-cockaded woodpecker. The emphasis is not "growing regulated crops of trees." Therefore this management area should not be classified as suitable for timber production. (It may nevertheless be appropriate to harvest timber from these unsuitable lands as needed to help achieve these other resource goals.) The Assessment states that the Wando area has the greatest density of at-risk species, supports one of the last remaining frosted flatwoods salamander populations in South Carolina, and some of the highest concentrations of Carolina gopher frog breeding wetlands in the state. Growing "regulated crops of trees" cannot be justified as compatible with ensuring desired conditions for these species, [29-36]

and their habitat should not be responsible for meeting timber production targets. Similarly, the riparian management areas that have been designated as not suitable for timber production appear (Appendix B) to be limited to rivers and streams, whereas the Planning Rule requires them to also encompass "open water wetlands." These additional riparian management areas should not be suitable for timber production [29-37]

Since the RCW Recovery Plan generally calls for "growing large old trees in abundance," RCW habitat should not be considered suitable for management driven by timber volume. The priority for managing red-cockaded woodpecker foraging habitat should not be timber production on a short rotation (modeled at 120 years, the age at which old growth conditions have just been reached), but rather maintaining mature and older trees that support their food source. A plan with much less suitable acreage is needed so that timber harvest levels are driven by ecological needs rather than by timber production. [29-38]

Concern: [Seq#109] The plan should not allow timber harvest on the Wambaw because timber harvest will not benefit wildlife. ([ID#109]

Associated Comments: [Seq#109]

Wood Products. I object to timber harvest proposed on the Wambaw. I do not agree with statements here that the harvest benefits wildlife. [25-32]

Concern: [Seq#110] The forest plan should increase timber efficiency to sustain the same income but on fewer acres suitable for timber production because these stands could be located in areas of lowest biological significance. (25-14)

The forest plan should reallocate the location of ATV trails away from sensitive areas and closer to population centers of the users because uses of ATV trails is not suitable in sensitive areas. (25-14) [ID#110]

Associated Comments: [Seq#110]

Theme 6: Integrate and coordinate resource management. 6b) Determine suitability of land for various resource use. Suitability determinations for mineral operations, timber production, outdoor recreation, special uses, etc. are made in the forest plan. ? A number of resources uses should be addressed now. Specifically: Motorcycle and ATV trails should be relocated away from the sensitive area they now traverse to property closer to the population centers from which the users come. The trails should be located on land problematical for best forest management practices, i.e., fire. ? Timber efficiency should be increased so that fewer acres are required to produce the same income. 194,023 acres of timber at the minimal 6% rate of comparable private timber production should net \$22,500,000/year. Ideally, all loblolly would be eliminated, but, if not, those and other harvestable stands would be relocated to sites of lowest biological signifance and most problematical for best forest management practices, i.e., fire. ? Mature longleaf are so scarce over the range that none should be harvested. In the short term the same should apply to 100 yr + loblolly. 2.2.2 Species Diversity (also known as Diversity of Plant and [25-14]

Concern: [Seq#111] The plan should not convert loblolly pine plantations to longleaf pine which results in loss of productive acres, growth and revenue because managing existing loblolly pine plantations for loblolly pine is more prudent silviculture in the long term. (14-6, 14-10, 15-7, 15-10) [ID#111]

Associated Comments: [Seq#111]

Your efforts will be stymied and the loss of previously productive acres and growth can never be recovered. This will be a constant loss of revenue and potentially a reduction of your budget, jeopardizing decades of prudent silviculture. [14-6]

*Loss of growth (income) from converting, i.e. destroying, established productive stands of other pine species. * Slower growth rate (lower productivity) of long leaf. [14-10]*

Your efforts will be stymied and the loss of previously productive acres and growth can never be recovered. This will be a constant loss of revenue and potentially a reduction of your budget,

jeopardizing decades of prudent silviculture. [15-7]

** Loss of growth (income) from converting, i.e. destroying, established productive stands of other pine species. * Slower growth rate (lower productivity) of long leaf. [15-10]*

Concern: [Seq#112] The forest plan should emphasize a strategy to delay conversion of loblolly to longleaf pine until the end of the rotation because this would maximize the benefits to the public and provide a sustainable income to the FMNF. [ID#112]

Associated Comments: [Seq#112]

Rather than conversion, I personally recommend the continued use of intensive forest management, with no conversion of suitable sites until the end of rotation of already established loblolly stands. This would insure a sustainable forest to maximize the benefits to the public, including sustainable income to the FMNF. The Francis Marion National Forest is not a National Park nor is it purely an experimental forest - it exists to meet the needs of a widely diverse group of people. With kind regards, I am [14-11]

Rather than conversion, I personally recommend the continued use of intensive forest management, with no conversion of suitable sites until the end of rotation of already established loblolly stands. This would insure a sustainable forest to maximize the benefits to the public, including sustainable income to the FMNF. [15-11]

Concern: [Seq#113] Permanent wildlife openings should be considered suitable for timber production. [ID#113]

Associated Comments: [Seq#113]

On the other hand, the permanent wildlife openings are being treated as not suitable for timber production. These do not qualify as "land developed for nonforest uses" that should be excluded. Rather they should be considered to be available for multiple uses, which should be determined for each alternative. [29-39]

Concern: [Seq#114] DC-F-3(c). Climate Change in the Forest plan should identify the refugia that will be promoted to the extent feasible for climate sensitive species because this will further clarify this desired condition. (29-44) [ID#114]

Associated Comments: [Seq#114]

Other issues There is a substantial amount of attention devoted to climate change in the planning process, and in the plan itself. It is more fully integrated into the plan than seen in other efforts. There is a specific reference in a desired condition to providing "refuge conditions," but the plan should go farther and identify the refugia that it will manage this way. [29-44]

Concern: [Seq#115] The DEIS should use the terminology “stable and not increasing” for turkey populations because statewide turkey population and harvest data do not support an increasing population. (37-1) [ID#115]

Associated Comments: [Seq#115]

In the Environmental Impact Statement under Hunttable and Fishable Species {3.4.13} under the heading "Environmental Consequences," the plan states that the wild turkey population on the Francis Marion is "currently stable to increasing." We suggest using the terminology of "stable" and not "increasing" as statewide turkey population and harvest data do not support the idea of an increasing wild turkey population on the Forest or in surrounding areas. [37-1]

Concern: [Seq#116] The forest service should allow private individuals and organizations to plant wildlife plots because the SCDNR and USGS budget is inadequate to plant the many fields that are needed. (8-4) [ID#116]

Associated Comments: [Seq#116]

I would also like to request that the USFS consider allowing private individuals & organizations to contribute to the planting of wildlife plots in the FMNF. SCDNR/USFS' budget is inadequate to plant the many fields in the FMNF. And to have only one man to do all the planting is insane. Please consider allowing a farmer to plow & plant a field(s) under the supervision of the SCDNR/USFS. Or allow individuals & organizations contribute funds to the planting program. It would enhance wildlife populations as well as the outdoor experience for its users. [8-4]

Concern: [Seq#117] The plan should emphasize timber harvests because early successional habitat will benefit numerous wildlife species and increase diversity across the Forest (17-5). [ID#117]

Associated Comments: [Seq#117]

Timber sales, especially final harvests, help to break up an otherwise homogeneous forest. Additional early successional habitat in a mosaic pattern will be a positive result from harvesting and tree planting and is being promoted as a need by organizations like the Quality Deer Management Association and the National Wild Turkey Federation. This variety of habitat will benefit numerous wildlife species and will increase diversity across the Forest. [17-5]

Concern: [Seq#118] DC –F-1(u) should clarify if the forest openings are for bats, wildlife or both. 24-4. [ID#118]

Associated Comments: [Seq#118]

P 25 - are these bat plots or wildlife (deer, turkey, and quail) food plots? [24-4]

Concern: [Seq#119] Top predator species including the red wolf should be reintroduced on the Francis Marion because they are necessary to have a healthy ecosystem and sustainable species of plants and animals. (7-1) [ID#119]

Associated Comments: [Seq#119]

As you are well aware, the health of any ecosystem is contingent upon the presence of a viable population of predators. The predator - prey functional unit reverberates throughout the ecosystem resulting in healthy and sustainable species of plants and animals. As such, I believe that the reintroduction of the top predator species including the red wolf is essential to the restoration of the Francis Marion Forest. Gerald Haram [7-1]

Concern: [Seq#120] The plan should address control of feral hogs with plan components because they are an important stressor for many at-risk species as stated in the DEIS. (29-26) [ID#120]

Associated Comments: [Seq#120]

Feral hogs were identified as an important stressor for many at-risk species. The DEIS states that control activities would be the same regardless of the alternative. However, the draft plan fails to address control of feral hogs with any plan components. [29-26]

Concern: [Seq#121] The forest plan should include the recommendations for Bird-Friendly Forest Management Practices in bottomland hardwoods because these practices have been proven to work at our demonstration sites. (Need the attachment?) (23-4) [ID#121]

Associated Comments: [Seq#121]

Audubon South Carolina has also developed Bird-Friendly Forest Management practices in bottomland hardwood forest systems that we would like to suggest be incorporated. Our recommendations are based on an extensive literature search and proven demonstration sites at our 3,450 acre Silver Bluff Audubon Center in Aiken. We are attaching our research and recommendations and again, would appreciate you incorporating them into your management in several sections of the Plan. [23-4]

Concern: [Seq#122] The forest plan should add a designation for “Continental Important Bird BCR27 Biome as part of Environmental Benefits (1.5.1) and a section for interior forest birds as part of Species Diversity (2.2.2) because the FMNF has been ranked in the top 10 percent for bird conservation within the Atlantic flyway (23-2). [ID#122]

Associated Comments: [Seq#122]

National Audubon Society, working through our state program Audubon South Carolina, is very pleased to support the Francis Marion Forest Plan Revisions with some minor modifications and additions. Audubon has recently prioritized all the large forest blocks in the entire Atlantic Flyway, based on an assessment of intactness of forest, richness and relative abundance of Biome restricted and BCR (Bird Conservation Region) priority birds. The Francis Marion Forest, was ranked in the top 10% and has been designed an Continental (B3) Important Bird for BCR 27 Biome, as 30% of the population of the BCR 27 priority birds are concentrated. The Francis Marion Forest is part of the identified network of the best 10-25% of the forest in the Flyway. (See attached summary). We would suggest that this additional designation be identified as part of the Environmental Benefits, 1.5.1 and add a section for Species Diversity 2.2.2 to reflect the suite of interior forest birds that are dependent

on sustainable management and fire dependent practices. [23-2]

Concern: [Seq#123] Appendix D of the Forest Plan should be improved by adding birds that have greater than 5% of their global population in the Carolina because of the need to protect these species. (23-5) [ID#123]

Associated Comments: [Seq#123]

We support the listing of list American Swallow-tailed Kite, Bachman's Sparrow, Bachman's Warbler, Bald Eagle and Wood Stork in Appendix D: Species of Conservation Concern by Habitat or Species Group- but think it could be made stronger if you added all the responsibility species (birds that have >5% of their global population in the Carolinas) (see attached list) [23-5]

Concern: [Seq#124] The forest plan should include the 5 actions identified in the DEIS to reduce impacts to species sensitive to road mortality as plan components because without these plan components the DEIS understates the effects on these species.29-22. Desired conditions for species sensitive to road use should identify locations where the conditions apply because it is not possible to adequately determine the effects on these species. 29-22 [ID#124]

Associated Comments: [Seq#124]

The grouping of species sensitive to road mortality is helpful. The DEIS states that, "Opportunities to minimize road effects to species in this group would be included under Alternatives 2 and 3 as plan components." However, the only plan component that addresses roads is a desired condition, DC-F-1(k), which states that roads provide for safe passage of at-risk species. Without more there is no reasonable expectation that effects of roads will be reduced. This desired condition focuses on "areas that support at-risk species that are sensitive to disturbance from road use;" it should identify these locations where the desired condition would apply. The DEIS also suggests five actions that "could be implemented under Alternatives 2 and 3 to reduce impacts to these species..." However, these are not plan components. Therefore the DEIS understates the effects if it assumes these measures would occur. The plan should include them as plan components. (This DC also says "integrated resource solutions are used;" this needs to be defined.) Nevertheless, the DEIS concludes that, "the ecological sustainability of this species group is likely to remain poor during the next 10 to 50 years due the anticipated increase in roads and vehicular traffic." This indicates that plan components will not provide ecological conditions needed for viability of at-risk species, which would be a violation of NFMA unless the Forest does everything it can to "contribute to maintaining a viable population of the species within its range," and documents how it has coordinated with other land managers. The draft plan clearly needs additional components to maintain and restore these species in the plan area. [29-22]

Concern: [Seq#125] The plan should add spotted turtle to the supporting information because this species is also sensitive to road use. 25-2. [ID#125]

Associated Comments: [Seq#125]

DC-F-1(k).Wildlife Species Sensitive to Road Use. Supporting Information: ? Add spotted turtle [25-2]

Concern: [Seq#126] Planners should reanalyze the effects of the plan on RCW because: 1) the plan appears to deviate from the RCW Recovery Plan by allowing foraging sized pine trees to be harvested for the sake restoring natural systems; 2) the effects analysis uses the “managed sustainability standard” incorrectly as a point of reference, which is intended for private lands; 3) the effects analysis needs to project the amount of habitat and the number of individuals expected to utilize that habitat; and 4) establish criteria for “silvicultural practices that minimize fragmentation” as called for in the Recovery Plan. 29-31; 29-32, 29-35. [ID#126]

Associated Comments: [Seq#126]

The draft plan is equivocal about contributing to recovery of the RCW. It acknowledges that, "there may be a need to deviate from The Red-cockaded Woodpecker Recovery Plan to provide long term benefits for the red-cockaded woodpecker (RCW) and its habitat." The DEIS adds this rationale: "To restore some of the natural ecosystems on the Francis Marion, the forest would likely need to harvest foraging-size pine trees within RCW clusters that currently do not meet the managed stability standard, or are currently above but would go below the standard post harvesting. However, the effects of such reductions in RCW foraging would be anticipated to be beneficial, insignificant or discountable as long as the ultimate goal is to restore the natural ecosystem. Restoration of the native ecosystems, especially the 2 longleaf pine ecosystems, should benefit the RCW in the long term." This is premised on data that indicates that recovery goals have been met despite lack of foraging habitat. However, it also conflicts with the statement made earlier that forest plan components, "comply with ... the associated recovery plan for each federally listed species." Because of the importance of this assumption the analysis of effects on RCWs is suspect. Moreover, the effects analysis seems to ignore the overriding concern in the Recovery Plan that, "the continued growth and natural stability of red-cockaded woodpecker populations will depend on provision of abundant, good quality foraging habitat." [29-31]

The DEIS analysis also incorrectly uses the "managed sustainability standard" from the Recovery Plan as a point of reference. This standard is intended for non-federal lands; the standard for federal lands is higher, which means that many more areas not meeting the standard would be harvested. [29-32]

The DEIS compares the relative effects of alternatives, but it does not actually determine the magnitude of effects on RCW. For each alternative, it should project the amount of habitat that would be provided in the plan area, and the number of individuals that would be expected to utilize that habitat. According to the Recovery Plan, "the ultimate recovery goal is species viability," and the evaluation of the effects of the forest plan must show that the planned habitat is contributing to that population goal. Another factor identified as important in the Recovery Plan is habitat fragmentation. The desired condition for "landscape structure and connectivity" for pine ecosystems focuses on proportions of age classes. It does not establish criteria for "silvicultural practices that minimize fragmentation" as called for by the Recovery Plan. Plan components should establish spacing requirements for treatments based on RCW dispersal distances. [29-35]

Concern: [Seq#127] The DEIS should address the effects of removing cavity-size pines in suitable habitat for the red-cockaged woodpecker because this is not presently disclosed. (29-27) [ID#127]

Associated Comments: [Seq#127]

Red-cockaded woodpeckers Management of habitat for recovered populations of red-cockaded

woodpeckers is guided by the Recovery Plan for the species, which identifies two primary limiting factors: "Foremost among these are the factors that limit suitable nesting habitat, namely fire suppression and lack of cavity trees." The draft plan strongly emphasizes the need for regular prescribed burning, which is appropriate and necessary. However, the draft plan is equivocal on its approach to providing cavity trees, despite the finding in the Assessment that there will need to be "vast amounts cavity-size pines in suitable habitat for the red-cockaded woodpecker." In particular, it designates all RCW habitat except identified clusters as suitable for timber production, meaning that mature trees will be continuously removed from habitat that requires mature trees. The DEIS does not address the effect of removing these trees. [29-27]

Concern: [Seq#128] The effects of converting loblolly forest types to longleaf pine should be compared to the ecological conditions recommended in the Recovery Plan because it is required to do so to be in compliance with NEPA. (29-29) [ID#128]

Associated Comments: [Seq#128]

Longleaf pine restoration is necessary for long-term viability of RCW. The desired condition to convert loblolly forest types to longleaf pine is appropriate. However, the rate of conversion must consider the short-term impacts on at-risk species, and the need for accelerated restoration must be justified in this context. In MA1, the desired conditions for the pine forest types are reasonably specific. To determine effects in the DEIS, these need to be compared to the ecological conditions recommended in the Recovery Plan. This was not done. [29-29]

Concern: [Seq#129] Lands in MA2, within RCW foraging habitat should be unsuitable for timber production, and harvested only where ecologically beneficial because there is a desired condition that, "Recommended minimum rotation ages apply to all land managed as foraging habitat." Appendix B states that, "desired conditions typically express rotations as a range." However, plan components do not include rotation ages at all, nor do they establish how these rotation ages would be determined or who would recommend them (29-30) [ID#129]

Associated Comments: [Seq#129]

In MA2, within RCW foraging habitat, there is a desired condition that, "Recommended minimum rotation ages apply to all land managed as foraging habitat." Appendix B states that, "desired conditions typically express rotations as a range." However, plan components do not include rotation ages at all, nor do they establish how these rotation ages would be determined or who would recommend them. Rather than have a rotation age based on timber volume considerations, these lands should be unsuitable for timber production, and harvested only where ecologically beneficial. [29-30]

Concern: [Seq#130] The plan (pages 37 and 38) for frosted flatwoods salamander and Carolina gopher frog should clarify whether the 10-20% increase is sufficient to protect these species since without knowing the potential number of these species that could be provided. (16-12) [ID#130]

Associated Comments: [Seq#130]

12. Page 37: We thoroughly support the objective of increasing the amount of frosted flatwoods

salamander breeding wetlands along the Talbot Terrace. However, it is unclear whether a 10-20% increase is a sufficiently ambitious objective without knowing the potential number that could be added. With six breeding wetlands currently extant, a 10-20% increase suggests one additional wetland in 10 years. 13. Page 38: Again, the objective for Carolina Gopher Frog implies one additional breeding wetland in 10 years. This seems insufficient over 10 years, but is difficult to evaluate without knowing the potential number of wetlands that could be provided. [16-12]

Concern: [Seq#131] DC-F-1(g) should be changed to improve connectivity among meta-populations as specified in the management strategy because this would provide the basis for the objective OBJ-F-1(e) (29-25) [ID#131]

Associated Comments: [Seq#131]

The "management strategy" for the frosted flatwoods salamander implies there is a desired condition of improving connectivity among meta-populations. In fact, there is no such desired condition and it needs to be added. Then would provide the basis for OBJ-F-1(e). [29-25]

Concern: [Seq#132] Plan components should be included for wood stork and eastern coral snake because the individual analysis shows that only a "moderate proportion of the species requirements are met by the species group." (29-24) [ID#132]

Associated Comments: [Seq#132]

There are two species for which only a "moderate proportion of the species' requirements are met by the species group:" the wood stork and eastern coral snake. Individual analysis and possible plan components are needed for these species. [29-24]

Concern: [Seq#133] The plan should prohibit logging along Wambaw Creek because there is a significant amount of old growth loblolly pine which is critical nesting habitat for Swallow-tailed Kite. (28-2) [ID#133]

Associated Comments: [Seq#133]

I wanted to make one comment about the area along Wambaw Creek. Although much of this area is wilderness there is a significant amount of old growth loblolly pine, just outside the wilderness boundary, that is historic nesting habitat for swallow-tailed kites. Historic data that the FS has certainly reflects this. I hope these old growth areas will be given some level of protection from logging as they really are critical nesting habitat. [28-2]

Concern: [Seq#134] The plan (p 25) should clarify why a single species is discussed here because the desired condition for swallow-tailed kite is not consistent with other ecosystem and habitat use desired conditions (16-9). [ID#134]

Associated Comments: [Seq#134]

9. Page 25: The use of swallow-tailed kite as a desired condition statement is somewhat incongruent

with the other ecosystem- and habitat use-based statements. We do recognize, however, that swallow-tailed kites are an important conservation target and are also an umbrella species for a variety of neotropical migrant songbirds, many of which are species of concern. A supporting statement of this umbrella concept would clarify why a single species is called out here. [16-9]

Concern: [Seq#135] The DEIS should address the potential effects utilities right-of-way, towers and windmills will have on the view (i.e. scenery) because this is an important effect not disclosed in the DEIS. (36-4) [ID#135]

Associated Comments: [Seq#135]

3.4.4 Special Uses, Energy, Minerals - Utilities right-of-way, towers, windmills - What would be the effect on the view? Viewscape, is that the word used now? [36-4]

Concern: [Seq#136] The forest plan should emphasize conditions for visually stimulating scenery and a restored native forest along the Highway 17 corridor because the opportunity exists to use these zones as a living billboard of what South Carolina's native forest should look like. (16-20) [ID#136]

Associated Comments: [Seq#136]

21. Pages 71 and 93: DC-Z Coastal-0/DC-Z Wambaw-0, Desired Conditions for the Coastal and Wambaw RIZs, Scenery-An opportunity exists within each of these RIZs to use the Highway 17 corridor as a living billboard of what South Carolina's native forest should look like. The Awendaw CWPP is now in place and approved, so a uniform approach to managing the forests on private and non-federal lands is entirely practical, as well as an opportunity to employ the "all lands" approach. Managing the area directly adjacent to Highway 17 is complex and challenging, but there are rewards to the public driving through miles of well-managed, open pine forests. Public that drive Highways 41 and 45 and Steed Creek Rd see the potential, but a large number of people (tourists and others) drive Highway 17. A statement should be inserted into the Scenery section on pages 71 and 93 that places an "emphasis on visually stimulating scenery along the Highway 17 Corridor". [16-20]

Concern: [Seq#137] The management plan should consider relocating the Wambaw Cycle Trail because this reduces user conflicts and better protect the ecosystems. (25-31) [ID#137]

Associated Comments: [Seq#137]

2.4.3 Wambaw Zone Sustainable Recreation Opportunities. ? As originally laid out decades ago by the Family Riders Cycle Club the Wambaw Cycle Trail was reasonably compatible. As management standards have risen, and far larger cycling groups with significantly different interest and behavior have emerged, conflict has resulted. The fragile ecosystems cannot relocate. The cyclists need more room for longer trails. This management plan should address relocating the cycle trail, ideally onto the fringe area of the forest where management is more challenging and there is room for a longer trails. [25-31]

Concern: [Seq#138] Planners (p93) should modify the statement that the Wambaw Cycle Trail coexists with the diverse ecosystems through strong partnerships because there has been severe damage to adjacent ecosystems. (24-20) [ID#138]

Associated Comments: [Seq#138]

P 93 - the statement that "The forest's only OHV trail, the Wambaw Cycle Trail, coexists with the diverse ecosystems through strong partnerships," is largely false. The users of this trail have demolished or severely damaged many of the adjacent ecosystems, and only through persistent complaints have some of the fragile wetlands near this trail been partially protected by incomplete fencing. I would speak the truth on this issue and work to develop real partnerships between trail users and ecologists and/or Forest managers that could educate and work to prevent senseless damage. [24-20]

Concern: [Seq#139] The Environmental Justice (EJ) analysis in the EIS should indicate the efforts made to identify or quantify the amount of subsistence consumption within the planning area that involve low-income and minority populations. (38-7) The Final EIS should summarize any EJ concerns raised during the public engagement process. (38-7) Planners should consider incorporating the EJ section as a subsection of the Social Demographics section in the Final EIS because understanding EJ issues is very heavily dependent on social demographics data. (38-7) [ID#139]

Associated Comments: [Seq#139]

3.4.14 Social Demographics (pages 275-298) & Environmental Justice (pages 299-301): The EPA notes that the Environmental Justice (EJ) section is separate from the Social Demographic section regarding low-income and minority populations. The DEIS also indicates that the potential benefits of the proposed forest plan would accrue to all segments of the population and no disproportionate negative environmental or health impacts are anticipated under all of the alternatives. However, it is also noted that Gullah Geechee are working hard to pass on their traditions and values, but that rapid coastal development and soaring land costs will threaten the passing on of these traditions to future generations. Additionally, the DEIS also indicates in the EJ section that there is subsistence consumption of fish, wildlife, and/or vegetation within the planning area. Recommendation: The EJ analysis should indicate the efforts made to identify or quantify the amount of subsistence consumption within the planning area that involve low-income and minority populations. The Final EIS should summarize any EJ concerns raised during the public engagement process. The EPA further suggests to the USFS consider incorporating the EJ section as a subsection of the Social Demographics section in the Final EIS because understanding EJ issues is very heavily dependent on social demographics data. [38-7]

Concern: [Seq#140] The amount of herbicides needed to manage for longleaf pine will have negative impacts to the environment [ID#140]

Associated Comments: [Seq#140]

The conversion to longleaf would be contingent on the heavy use of carcinogenic herbicides and many more acres to burn than any past budget could possibly sustain. [14-4]

Environmental impacts of increase herbicide use. [14-8]

The conversion to longleaf would be contingent on the heavy use of carcinogenic herbicides and many more acres to burn than any past budget could possibly sustain. [15-5]

Concern: [Seq#141] The forest plan should consider the costs of conversion and the resulting loss of timber productivity because when these are considered restoration of longleaf pine is not economically feasible. [ID#141]

Associated Comments: [Seq#141]

*In addition, without detailed financial analysis of this draft plan it is almost impossible to objectively determine an appropriate course of action. And for this I offer a "shame on you". The direction, goals and implementation of the plan are dependent on the costs of conversion and how they would impact your future budgets. The actual cost of the reduced productivity and associated additional cost needs to be explored and defined in order to make valid decision. Some of the associated cost that has not been defined at least partially includes: * Cost of increasing FS staffing just to conduct the 60% increase in prescribed burning. * Cost of herbicides that must be used for conversion. * Cost of herbicides and other alternative methods to maintain LL stands where urban interface will not allow any sort of smoke management. * Cost of planting each longleaf seedling. (Artificial regeneration) [14-7]*

*In addition, without detailed financial analysis of this draft plan it is almost impossible to objectively determine an appropriate course of action. And for this I offer a "shame on you". The direction, goals and implementation of the plan are dependent on the costs of conversion and how they would impact your future budgets. The actual cost of the reduced productivity and associated additional cost needs to be explored and defined in order to make valid decision. Some of the associated cost that has not been defined at least partially includes: * Cost of increasing FS staffing just to conduct the 60% increase in prescribed burning. * Cost of herbicides that must be used for conversion. * Cost of herbicides and other alternative methods to maintain LL stands where urban interface will not allow any sort of smoke management. * Cost of planting each longleaf seedling. (Artificial regeneration) [15-8]*

While it may be helpful to include supporting information or "management strategies" in a plan, it is important to clearly distinguish these from the plan components (in particular, it is confusing when both use present tense verbs). There are many places where information sounds like a plan component or vice versa. For example, "Lands that consolidate national forest and connect ecosystems are a priority for acquisition" should be plan component that will help the Forest develop a land ownership adjustment strategy (instead of being "supporting information"). Similarly, "improved connectivity" is part of the "management strategy" for Carolina gopher frogs, but is not a plan component. Plan content that is not a plan component is not mandatory and cannot be used to meet diversity requirements. In other places the plan components are simply obscured by the amount of information. The plan could be much shorter. [29-5]

The \$22.5 million figure came from a highly respected local professional who deals w/large land transactions and land earnings for both public and private sectors. He has been involved w/a number of transfers to USDAFS in the recent past. The figure was arrived at through approximation of value of the 259,625 acre Francis Marion, \$500,000,000 to \$1,000,000,000, based on best comparables. Minimal annual incomes generated by those lands is 6 to 7%. At 75% of the FM being impacted by some degree of forest product mgt., \$22,500,000/yr is what the owner should expect [41-1]

Concern: [Seq#142] The Forest Plan should emphasize the production of small diameter pine trees to meet statewide demands in the pulpwood market. [ID#142]

Associated Comments: [Seq#142]

Pine timber production is especially important right now in South Carolina because of a dramatically imbalanced pine age class structure that has created a scarcity of small diameter pine. Unfortunately, this condition will worsen before improving. We can help alleviate this problem by planting as many acres as we are able to on our own properties to increase timber production and by producing as much pulpwood as possible over the next 10 to 20 years. We can also ensure the public knows that we are working hard to help address this challenge and to support our share of the jobs in forestry while serving as responsible stewards of the environment. We should also remind them that our forests provide other values like recreational opportunities, wildlife habitat, clean water, and carbon sequestration while providing valuable fiber for our mills and providing employment. Seeing that timber harvests are now being planned to exceed pre-Hugo levels is good news for the National Forests and for South Carolina. The Francis Marion contains some of the most productive timber growing land in the country, so it can produce significant additional wood volumes on just a portion of the total Forest area through tree planting and active timber management. This national forest also happens to be located in the part of the state with the highest scarcity of small diameter pines. Because of these factors, the Francis Marion National Forest is poised to provide significant relief to this wood supply problem. [17-3]

Concern: [Seq#143] The forest plan should consider the migration of salt marsh and maritime forests further inland because sea-level rise create a need for migration of species as salinity levels increase. [ID#143]

Associated Comments: [Seq#143]

3.3.1 both .11, and .12- Alternative 2 for restoration and preservation of the maritime forest and salt marshes, and allowances for them to inland migrate with a rising sea level, is a critical goal to allow the continued existence of these ecosystems during times of sea-level rise. [22-4]

Concern: [Seq#144] The forest plan should not allow the creation of wildlife openings in the Wambaw semi-primitive, because it does not benefit wildlife. except feral hogs [ID#144]

Associated Comments: [Seq#144]

DC-Z-Wambaw-S-2. Wambaw Semi-Primitive Areas. ? I argue that Wildlife openings here do more to benefit wild hogs than anything else. Rare plant communities are compromised by ground disturbance and the introduction of alien species. Those important natural components do not benefit from the plots. [25-33]

Concern: [Seq#145] The forest plan should not allow any Forest Service system roads to be managed by the state or county unless mitigation measures are in place to protect natural resources and maintain ecosystem integrity. [ID#145]

Associated Comments: [Seq#145]

Pg 41 - OBJ-F-2(n) - Three years seems too long to address the problem. [21-7]

P 30 - I strongly object to the Forest Service giving up ANY control of roads to the SCDOT, any county or any other local authority, unless permanent restrictions on both management and expansion are part of the deal. These other agencies have a destructive history of both management and planning for large "bypass" style roads in the Francis Marion. [24-6]

P 41 - see comments on P 30. Please do not cede road control to local or state entities. [24-10]

Concern: [Seq#146] Standard S31 on requiring a permit for disperse camping should be removed because it does not meet federal guidance. [ID#146]

Associated Comments: [Seq#146]

While skimming your draft forest plan, I noticed Standard 31: "Allow dispersed camping on the forest only with a permit." How is the FM going to implement this standard? I ask because the standard appears to conflict with over-arching federal regulations. The Forest Service's "use and occupancy" rule is found at 36 CFR 251.50. To paraphrase, this rule states that every use of national forests requires a permit, except for noncommercial recreational uses, e.g., camping, which don't require a permit. Line officers do have authority to close an area to certain uses (36 CFR 261.50 et seq.). They exercise this authority by signing an order that is posted in each office and "Displaying each prohibition imposed by an order in such locations and manner as to reasonably bring the prohibition to the attention of the public." 36 CFR 261.51. While it is possible for your forest supervisor to sign an order banning camping on the F-M unless the camper "meet[s] exemption requirements specified in the order," (i.e., has obtained a permit, see 36 CFR 261.50(e)(6)), I have a hard time imagining how the FS will display such an order sufficiently to bring it to the visiting public's attention. The FS would have to post every trail head, every road, every regularly used dispersed camping site, and replace those postings after they've been vandalized, removed, defaced, or just rotted away. Can you help me understand the rationale behind this standard and how the FS will go about implementing it? Note that the land and resource management plan itself regulates only the Forest Service's conduct. Standing alone, the plan has no regulatory force or effect on anyone else, including dispersed campers. [34-1]

Concern: [Seq#147] The forest plan should address permits for personal fossil collecting as fossil collecting could be a family-friendly activity to connect people to the forest. [ID#147]

Associated Comments: [Seq#147]

*3.4.6 Outdoor Recreation * Recreation personal fossil collecting? [36-5]*

*Outdoor recreation - General comment. * Understandably mineral and fossil are not seen as significant items in the Francis Marion Forest. I know of no notable and collectable minerals located in your forest area that mineral collectors would be interested in. However, there would be fossils and*

there are noted sites in Berkeley and Charleston counties given on internet websites. Most fossil collecting is a surface activity with little or no real disturbance. Judging from the forest plan and a couple trips passing through the Francis Marion, there is plentiful ground cover and fossil collecting usually needs open and/or disturbed ground locations. This limits opportunities to see or pick up fossils. However, where possible children/young people (young at heart) should be able to explore nature. Someone with an interest in nature picking up a shell should not be discouraged. I would hate to hear of an overzealous ranger handing out fines because there are no guidelines and he/she wants to discourage looting of the national forest. [36-7]

Concern: [Seq#148] The forest plan should include direction on limiting any new developed recreation sites due to the existing maintenance backlog and declining budgets. [ID#148]

Associated Comments: [Seq#148]

Pg 40 - OBJ-F-2(g) - goals seems inadequate, leaving a tremendous backlog. [21-6]

2.2.3 Social and Economic Sustainability DC-F-2(d). Developed Recreation Sites (Facilities and Infrastructure). ? The focus should be for passive recreational facilities. Development of any active facilities should receive the most exhaustive scrutiny and serve a vital need that cannot be achieved elsewhere. DC-F-2(k). Wood Products. [25-16]

Concern: [Seq#149] The monitoring plan should include monitoring for water quality impacts because even with the implementation of the Best Management Practices there will be erosion and sedimentation impacts. [ID#149]

Associated Comments: [Seq#149]

*3.2.3 Water Quality (pages 72-90): According to the DEIS, under Alternative 2 (i.e., the 'preferred alternative') and Alternative 3, forest management activities are not anticipated to substantially or permanently impair water quality nor result in measurable changes to overall watershed condition ranking. The implementation of mitigation measures, such as the use of BMP 's and adherence to forest standards and guidelines are being proposed by the USFS. Nevertheless, timber harvesting in forests will result in some soil and water impacts associated erosion, increased sedimentation, and potential degradation of water quality. Recommendations: The EPA supports the effective use of BMPs and adherence to forest standards and guideline for water quality. We recommend reducing the nonpoint source pollution of surface and ground waters that can result from forestry activities, recreation, fire management, and roads. These activities include but are not limited to: * Tracking the implementation of BMPs used to control nonpoint source pollution generated by forestry practices, recreation, fire management, and roads. * Fully utilizing the USFS published guidelines for National Best Management Practices (USDA, 2012) to maintain and improve water quality. * Developing water-quality monitoring plans to evaluate the effectiveness of forestry BMPs in meeting water-quality goals or standards. * Design of monitoring projects and the selection of variables and methods to correlate BMP implementation with changes in stream water quality. Providing information on methods for sample site selection, sample size estimation, sampling, and result evaluation and presentation. The focus is to develop statistical approaches needed to collect and analyze data that are accurate and defensible. [38-5]*

Concern: [Seq#150] The forest plan should allow more for OHV trails due to the public interest in riding OHV on trails on national forest land. [ID#150]

Associated Comments: [Seq#150]

*Hello. I read through all your documents as best I could and found very little regarding any changes to the OHV trail systems. SC doesn't have much to start with, so I'd really hate to see less trails, and would LOVE to see more trails for my sons and I (and others of course) to be able to ride motorcycles, OHV's, etc. Can you give more details regarding any changes to the recreational trail systems?
Thanks, Ryan [6-1]*

Concern: [Seq#151] Snags should be left because they benefit the environment [ID#151]

Associated Comments: [Seq#151]

IN FEDERAL REGISTER 2015-20084-I NOTICE THE SNAGS ARE ALL GONE IN COVER PICTURE WHEN SNAGS ARE HOMES FOR BUGS FOR BIRDS TO EAT. WHAT A HORROR TO CLEAN UP SNAGS. LEAVE THE LOBLOLLY PIEN ALONE. SUCH MAULINGS BY THE FS IS ENVIRONMENTALLY HARMFUL AND EXPENSIVE TO TAXPAEYRS. [4-4]

Concern: [Seq#152] The forest plan should protect the slave-built rice fields in the Huger Creek drainage basin and in the tidal portions of Wambaw Creek because they priceless cultural artifacts that speak to much of the early history of the area. [ID#152]

Associated Comments: [Seq#152]

P 29/30 - I think that the old slave-built rice fields on the Huger Creek and Wambaw drainage basins must be included as priority heritage assets. [24-5]

P 61 - does this indicate that the cultural resource of the rice fields will be preserved??? Seems counter to earlier "restoration" descriptions. [24-15]

P 94 - Battery Warren is not the only significant cultural resource in this zone. The slave-built rice fields in the Huger Creek drainage basin and in the tidal portions of Wambaw Creek are priceless cultural artifacts that speak to much of the early history of the area. [24-21]

Concern: [Seq#153] Forest plan direction should encourage the acquisition of inholdings to allow for more efficient management of national forest lands. [ID#153]

Associated Comments: [Seq#153]

I would like to encourage the USFS to acquire most, if not all, inholdings in the FMNF, regardless if they are environmentally valuable. Eliminate as many property lines (land-owners) as possible to aid in management of the Francis Marion. [8-2]

Appendix C – Organizational Affiliation

The CARA database that was used contains public comments organized by subject and then category. Organizational affiliation is tracked for each comment letter. The Table below displays, by organization type and the number of responses.

Organizational type	Number of Responses
Academic	2
Business	1
County	1
Federal	7
Individual	15
NGO	6
State	5
Name/Organization	Organizational Type
Glitzenstein, Jeff	Academic
Everett, Jean, College of Charleston, Botany	Academic
Johnson, Daniel, Wildland Engineering	Business
Carson, Frank, Charleston County Mosquito	County
Fay, Virginia, NOAA, National Marine Fisheries	Federal
Midgett, Patricia, Cape Romain NWR	Federal
McGee, Karen, US Fish and Wildlife Service	Federal
Randall Mills, DOI BLM Southeastern States	Federal
Militscher, Christopher, US Environmental	Federal
Mills, Randall, DOI-BLM-Southeastern States	Federal
Zurawski, Carol, Bureau of Land Management	Federal
Baldwin, William	Individual
Public, Jean	Individual
Alexander, John	Individual
Kelbey, Ryan	Individual
haram, gerald	Individual
White, David	Individual
Bamford, Michael	Individual
Baldwin, Billy	Individual
Public, Jean	Individual
Page, Chris	Individual
Depenbrock, Brian	Individual
Jamison, Lynne	Individual
Jamison, John	Individual
Brubaker, John A.	Individual
Gasper, Grace	Individual
DeGarady, Colette, The Nature Conservancy	NGO
Greene, Matt, Lowcountry Open Land Trust	NGO
Richardson, Sharon, Audubon Society, executive	NGO
Gasper, Grace, Friends of Coastal South Carolina	NGO
Prater, Ben, Defenders Of Wildlife	NGO
Stahl, Andy, Forest Service Employees For	NGO
Stone, Peter, SC DHEC	State
Doar, Will, SC DNR Geologist	State
Foley, Tim, Southern Group of State Foresters	State
Dukes, Billy, SC Dept of Natural Resources	State
Kodama, Gene, SC Forestry Commission, State	State