[3410-11- P]

DEPARTMENT OF AGRICULTURE

Forest Service

Enoree Ranger District; South Carolina; Chester County Stream and Riparian Restoration/Enhancement Project

AGENCY: Forest Service, USDA.

ACTION: Notice of intent to prepare an environmental impact statement.

SUMMARY: The Chester County Stream and Riparian Restoration/Enhancement Project will involve restoring and enhancing the hydrologic, riparian and aquatic functions within four watersheds located on National Forest System (NFS) lands in Chester County, S.C., and help meet the stream restoration goals outlined in the 2004 Revised Land and Resource Management Plan, *Sumter National Forest* (Forest Plan). More specifically, the Project Area is located along the western most portion of Chester County, approximately two miles south of Lockhart, and is bounded by the Broad River to the west and Hwy. SC 49 to the east. It includes four watersheds: Clarks Creek, Little Turkey Creek, McCluney Branch and an unnamed tributary to Clarks Creek. Restoration work will be accomplished through the use of the following stream restoration design approaches: floodplain reconnection (FR) (also known as a Rosgen Priority 1), floodplain excavation (FE) (also known as a Rosgen Priority 2), and floodplain benches (FB) (also known as a Rosgen Priority 3). Selection of a restoration approach is made for each stream segment based on individual stream and floodplain conditions, and a combination of approaches is typically employed within an

individual watershed to meet site conditions. Approximately 18 miles of streams are proposed for restoration.

DATES: Comments concerning the scope of the analysis must be received by [insert date 30 days from date of publication in the **Federal Register**]. The draft environmental impact statement is expected July 2014 and the final environmental impact statement is expected November 2014.

ADDRESSES: Send written comments to USDA Forest Service, 4931 Broad River Road, Columbia, SC 29212. Comments may also be sent via e-mail to comments-southern-francismarion-sumter@fs.fed.us, or via facsimile to 803-561-4004.

FOR FURTHER INFORMATION CONTACT: Chris Evans (chrisevans@fs.fed.us), 864-427-9858.

Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday.

SUPPLEMENTARY INFORMATION:

Purpose and Need for Action

The purpose and need for this Project is to restore and enhance the hydrologic and aquatic functions within four watersheds (Project Area) located upon lands of the Sumter National Forest in Chester County, SC. Hereinafter in this Environmental Impact Statement (EIS), “restore” is used synonymously with “rehabilitate”. This change in condition would restore riparian functions and help move the current stream systems toward stability and reestablishment of natural stream and related habitat forming processes. This may include, but not be limited to, restoring the hydrologic regime

including reconnecting streams to their respective floodplains, reducing sedimentation and stabilizing banks, improving in-stream and riparian habitats, and improving water quality.

In 2010, the United States Army Corps of Engineers (the Corps) approached the Forest Service about the potential for completing compensatory mitigation projects upon National Forest System lands. The Corps' Final Mitigation Rule (the Rule) requires that compensatory mitigation be completed within or immediately adjacent to the watershed where the impacts are occurring. The Enoree Ranger District is geographically located within the Lower Broad, Enoree and Tyger sub-basins (8-digit Hydrologic Unit Codes (HUC)), making it within the primary service area for projects in Greenville, Spartanburg and possibly the greater Charlotte metro area. There is high demand for compensatory mitigation in these HUCs, while currently no private mitigation banks are serving them. The Rule also clarifies that public lands are appropriate for use in completion of compensatory mitigation projects, provided a land management plan is in place to enable long-term protection and management of the mitigation property.

Stream restoration is a primary goal of the Forest Service's 2004 Revised Land and Resource Management Plan (Plan) and the Plan includes multiple objectives designed to restore and enhance stream habitat and aquatic communities within the Project Area streams. The Forest Service and Corps have entered into a regional Conservation Land Use Agreement that sets forth the policies, undertakings, and responsibilities governing the use of Sumter National Forest lands for compensatory mitigation projects required or authorized under the Corp's permit program.
In May 2011, the Forest Service began discussions with the Corps and Duke Energy

Carolinas, LLC (Duke Energy) regarding the potential for a compensatory mitigation project to be completed on the Enoree Ranger District. The project would be used to offset the impacts associated with Duke Energy's construction of a drought contingency reservoir for the proposed Lee Nuclear Station in Cherokee County, SC.

It is the intent of this EIS to identify those watersheds within the analysis area that may benefit from restoration and enhancement, and to provide the required documentation so that they may be considered for future use as compensatory mitigation properties.

Background

The Project Area is located along the western most portion of Chester County, South Carolina, approximately 2 miles south of Lockhart. The Project Area is bounded by the Broad River to the west and Highway SC-49 to the east. The potential restoration work to be completed within the Project Area includes approximately 18 miles of streams within four watersheds: Clarks Creek, Little Turkey Creek, McCluney Branch, and an unnamed tributary to Clarks Creek.

Native Americans moved into the Broad River valley about 12,000 years ago. Their populations remained relatively low throughout their occupation and their impact on the environment was limited. Small groups of European settlers first moved into the project area in the 1750s.They were primarily farmers who cultivated level terrain along the major streams and rivers. An influx of settlement followed the American Revolution with these settlers moving into the uplands. Cotton agriculture started in the early 1800's and continued as the main staple crop in the Piedmont until the early 1900's. Extensive tracts of erosion prone land were cleared for cultivation. Fields that were allowed to lay

fallow after the growing season were soon subjected to sheet erosion which quickly became gullies. When federal acquisition began in the 1930s, the South Carolina Piedmont was one of the most severely eroded regions in the United States (SNF Cultural Resources Overview 2006). Sediment covers Piedmont stream valleys in varying depths up to several feet and has inundated once pristine stream and wetland systems (SNF Component Final Mitigation Plan 2012). Streams within the Project Area reflect past land management practices that have led to the deteriorated conditions and reduced stream function.

Past land abuses as described above within the Project Area have led to deeply incised streambeds that are subject to reduced floodplain interactions and ongoing water quality and aquatic habitat degradation (Forest Service 2004). Streams are incised and disconnected from an active floodplain, which exacerbates in-stream channel erosion and further down-cutting, and substantially limits the hydrologic, physical, chemical, and biological function that would likely occur when a stream has access to its floodplain.

Forest Goals and Objectives

This proposal is consistent with the 2004 Revised Land and Resource Management Plan, Sumter National Forest (Plan) that provides goals and objectives for the Project Area.

Restoring and enhancing the historic hydrologic and aquatic functions in the Project Area would help meet the following goals and objectives in the Plan.

Goal 1 Watersheds are managed (and where necessary restored) to provide resilient and stable conditions to ensure the quality and quantity of water necessary to protect ecological functions and support intended beneficial water uses.

- Objective 1.01 – Improve soil and water conditions on 1,500 acres through stabilization or rehabilitation of actively eroding areas such as gullies, barren areas, abandoned roads or trails, and unstable stream banks over the 10-year planning period.

Goal 2 Manage in-stream flows and water levels, by working with other agencies if possible, to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values.

- Objective 2.01 – The in-stream flows needed to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values will be determined on 50 streams.

Goal 3 Riparian ecosystems, wetlands, and aquatic systems are managed (and where necessary restored) to protect and maintain their physical, chemical, and biological integrity.

Goal 4 Maintain or restore natural aquatic and riparian communities or habitat conditions in amounts, arrangements, and conditions to provide suitable habitats for riparian dependent and migratory species, especially aquatic species including fish, amphibians, and water birds within the planning area. Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris.

- Objective 4.01 – Create and maintain dense understory of native vegetation on 1-5 percent of the total riparian corridor acreage during the 10-year planning period.

Goal 6 Cooperate with landowners and other partners to address watershed needs and participate in efforts to identify stream problems, watershed planning, BMP (Best Management Practice(s)) and Total Maximum Daily Load (TMDL) implementation with

the South Carolina Department of Health and Environmental Control, South Carolina Forestry Commission and other agencies.

Goal 9 Provide habitats to sustain the diversity and distribution of resident reptile and amphibian species as well as breeding, wintering, and migration staging and stopover habitat for migratory birds in ways that contributes to their long-term conservation.

Goal 11

- Objective 2 – Restore and enhance stream habitat and aquatic communities in 50 miles of streams. This includes woody debris, stream bank stabilization, brook trout restoration, and in stream habitat improvement.

Goal 14 Manage forest ecosystems and associated communities to maintain or restore composition, structure, function and productivity over time.

Proposed Action

The Proposed Action is to restore and enhance the hydrologic and aquatic functions on approximately 18 miles of streams within the Project Area's four watersheds, namely McCluney Branch, Little Turkey Creek, Clarks Creek, and an unnamed tributary to Clarks Creek). The Proposed Action represents an effort to restore ecosystem functions across multiple watersheds and at a landscape-scale, which when completed would provide regionally-significant ecological benefits.

To accomplish the restoration work, the following restoration design approaches would be used: floodplain reconnection (FR), floodplain excavation (FE), and floodplain benches (FB). The stream restoration approaches are summarized in Table 1; definitions for the design approaches are provided in Table 2.

Selection of a restoration approach is made for each stream segment based on

individual stream and floodplain conditions, and a combination of approaches is typically employed within an individual watershed to meet site conditions. An understanding of the approach can be used to generally describe the project footprint, the amount of excavation and fill material needed to complete the work, and the ecological outcome of the proposed project. Implementation would ultimately require more detailed designs that identify specific construction details (e.g., channel patterns, longitudinal profiles, cross-sections, in-stream channel structures for aquatic species habitat (e.g., large wood, rock substrate), substrate modifications, planting native vegetation, and restoration of work areas). The proposed stream restoration approaches for the various stream reaches are identified in Table 1.

Table 1: Summary of the proposed restoration

Stream	**Restoration Length***	**Restoration Approach**
McCluney Branch	3.1	Floodplain Reconnection Floodplain Excavation
Little Turkey Creek	4.6	Floodplain Reconnection Floodplain Excavation
Clarks Creek	7.0	Floodplain Reconnection Floodplain Excavation Floodplain Benches
Unnamed Tributary to Clarks Creek	3.1	Floodplain Benches Floodplain Excavation
Total Length	17.9	

*approximate lengths

For the four watersheds, the restoration would include a variety of methods to return natural channel form, floodplain function and habitat conditions. Restoration would involve some earthmoving and shaping of the channel and floodplain and to the extent possible, soil borrow and disposal areas would occur within these small watersheds. Activities would include some temporary roads and repair or replacement of facilities such as roads, culverts and bridges. Other restoration activities would involve some removal of trees and vegetation to accommodate the restoration work. Stream restoration would include planting native tree, shrub, and herbaceous vegetation to help stabilize the stream banks and adjacent areas, provide habitat improvements and to speed

recovery within the areas temporarily disturbed by construction activities. Mitigation measures would be chosen to accelerate stabilization rates to limit erosion and restore native forest and vegetation types.

- McCluney Branch: Proposed activities for restoration within McCluney Branch include floodplain reconnection and floodplain excavation. A hybrid restoration approach would be used in smaller drainage areas to create a wetland/intermittent stream complex with little or no defined stream channels, similar to what was historically present in these areas. Restoration would involve some earthmoving and shaping of the floodplain, including the use of soil borrowed from areas both within and potentially outside of the watershed. In the lower portion of McCluney Branch, floodplain excavation would be used to transition the stream bed to the existing elevation of the stream near Broad River.
- Little Turkey Creek: The floodplain excavation approach would be used in the upstream part of the watershed, and then the floodplain reconnection approach would be used in the middle part of the watershed. Floodplain excavation would be used to transition the restored channel back into the existing stream channel in the lower portion of the watershed. Restoration would involve some earthmoving and shaping of the floodplain, including the use of soil borrowed from areas both within and potentially outside of the watershed. Also, some additional structural diversity such as boulders and cobble rock may be added to a portion of the newly created stream channel.
- Clarks Creek: All three restoration approaches (i.e., floodplain reconnection, floodplain excavation, and floodplain benches) would be used to restore Clarks

Creek. The upstream portions of Clarks North Fork tributary would begin with the floodplain excavation, transitioning quickly to the floodplain reconnection approach below the first tributary stream; this tributary stream would have a short section of floodplain reconnection in its headwaters. Downstream of this area, the floodplain reconnection approach would be used before reaching a short segment where no restoration is proposed. The approach for the middle sections of Clark Creek would transition from floodplain excavation down into floodplain reconnection along the mainstem of Clarks Creek, where the approach would have a final transition back to floodplain excavation so that the stream can tie into the existing stream bed. Within the Clarks South Fork tributary, the stream would transition from floodplain reconnection to floodplain excavation, and then through a short segment adjacent to the Project Area boundary that would be restored using the floodplain bench approach. The downstream area would then transition from floodplain excavation back to floodplain reconnection, as it joins the mainstem at the confluence with Clarks North Fork. Restoration would involve extensive earthmoving and shaping of the floodplain, including both the use of borrowed soil and disposal of excess soil to areas outside of the floodplain.

- Unnamed Tributary to Clarks Creek: The Unnamed Tributary to Clarks Creek would be restored using the floodplain benches approach as well as floodplain excavation in localized sections. Restoration activities proposed on this stream would be targeted to key problem areas to help augment natural channel changes the stream is undergoing as it moves toward greater stability. Restoration would involve moderate to extensive earthmoving and shaping of the floodplain in key

areas, including both the use of borrowed soil and disposal of excess soil to areas outside of the floodplain. To the extent possible, soil borrow and disposal areas would occur within watershed.

Forest Service Plan Amendment

The proposed action includes a non-significant forest plan amendment to the *Revised Land and Resource Management Plan, Sumter National Forest* (Forest Plan). The amendment would change current Forest Plan management direction to allow for implementation (construction, reconstruction and maintenance) of the Chester County Stream and Riparian Restoration/Enhancement Project (stream restoration project) in project streams only.

Proposed Forest Plan changes would:

1. Allow heavy equipment within project stream channels during implementation and maintenance activities.
2. Allow removal of trees and other vegetation on project stream banks during implementation and maintenance activities.
3. Allow removal of hardwood inclusions (1/2 acre in size or larger) in pine stands dominated by hard and soft mast species where needed during implementation activities.
4. Allow removal of trees in areas with old growth characteristics where necessary during implementation of the steam restoration project.
5. Allow removal of healthy shortleaf pine in areas where necessary during implementation of the steam restoration project.

6. Allow stream restoration project work to take place on plastic soils with approval of the forest soil scientist on a case-by-case basis.
7. In the short term, change the scenic integrity objective for stream restoration work to moderate in management prescriptions 6.C, 7.D, 7.E.1, 7.E.2, 9.A.3, 9F, and 11 in the project area to allow the restoration work to be completed.
8. Allow temporary removal of large woody material during restoration and maintenance work.
9. Allow minimal impacts to rare communities during stream restoration and maintenance work.

Connected Actions

The following activities would be conducted in connection with stream restoration and enhancement activities.

- **Road Reconstruction and Maintenance:** Road maintenance and/or reconstruction would be needed on existing Forest Service system roads. Reconstruction work would consist of but not be limited to graveling road surfaces, replacing culverts – including replacements for aquatic organism passage, ditch cleaning, removing brush and trees along road rights-of-way, installing, repairing or replacing gates and correcting road safety hazards. Bridge replacements may be necessary on some roads to accommodate the restored stream. Road maintenance would consist of spot gravel replacement, blading, cleaning culverts, light brushing and mowing.

- **Temporary Roads:** Stream restoration work would require the construction of temporary roads during project implementation work. Upon completion of

restoration activities, temporary roads would be closed, obliterated and adequate erosion and stormwater control measures completed. Road surfaces would be replanted with native and desirable non-native vegetation.

- **Soil Borrow and Soil Deposition Areas:** Implementation of the project would generate the need for soil borrow to fill in and shape the new channels and adjacent areas. Likewise, sediment deposited by past land erosion would be removed in some locations, generating soil that would need to be deposited elsewhere. Soil borrow and deposition areas would be established on national forest system lands within the project area and transported to the stream restoration areas as needed.

- **Merchantable Timber:** The project would result in the removal of trees within the stream restoration areas and from the soil borrow and deposition areas. Merchantable timber would likely be sold. Some of the woody material would be utilized in the restoration work. Trees would be cut down and skidded to landings where it would be transported off site or used in the restoration work. All landings and skid trails would be closed, water-barred and reseeded.

Table 2: Stream Restoration Methods –Definitions

Restoration Approach (based on Rosgen, 1997)	**Terms and Definitions for EIS**
Floodplain Reconnection (FR)	• Raise the streambed and use the existing valley elevation as the floodplain. • Create a meandering stable channel on existing forest bottom with alternating riffle and pool bed forms. • Small headwater streams may have a small step-pool channel or swale. • Fill/plug sections of old stream channel and create oxbow ponds and wetlands; may include the use of groundwater dams.
Floodplain Excavation (FE)	• Excavate, at the stream's existing bankfull elevation, a new floodplain that is wide enough to support a meandering channel. The stream bed elevation remains nearly the same. • Create or allow for the natural development of a meandering channel with alternating riffle and pool bed forms.
Floodplain Benches (FB)	• Constraints in the stream corridor will not support a meandering channel. • Excavate relatively narrow, floodplain benches at the stream's existing bankfull elevation. • Create a relatively straight channel that dissipates energy through a step-pool bed form rather than a meandering stream.

Rosgen. D.L. 1997. A Geomorphological Approach to Restoration of Incised Rivers. In: Proceedings of the Conference on Management of Landscapes Disturbed by Channel Incision, S.S.Y Wang, E.J. Langendoen, & F.D. Shields (Editors). University of Mississippi. Oxford.

To view project vicinity, location map and more detailed information about proposed treatments go to: http://www.fs.fed.us/nepa/nepa_project_exp.php?project=44310

Lead and Cooperating Agencies

The United States Army, Corps of Engineers - Regulatory Division, Charleston District,

Charleston, South Carolina will be a cooperating agency on this project.

Responsible Official

The Forest Supervisior for the Francis Marion/Sumter National Forests

Nature of Decision To Be Made

Whether or not to implement the action as proposed or an alternative way to achieve the desired outcome.

Scoping Process

This notice of intent initiates the scoping process, which guides the development of the environmental impact statement. A public scoping meeting will be held in Chester County at the West Chester Community Center, located at 2684 West Chester School Road, Chester, SC 29706 on April 28, 2014 from 4:30 p.m. to 6:30 p.m.

It is important that reviewers provide their comments at such times and in such manner that they are useful to the agency's preparation of the environmental impact statement. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions.

Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will also be accepted and considered, however.

Dated: April 17, 2014

Robin Mackie

Acting Forest Supervisor

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