



ENVIRONMENTAL SERVICES, INC.

Climate Action Reserve Forest Project Protocol Version 3.1 Verification Report – Version 1, 27 March 2013

Blue Source – Francis Beidler Improved Forest Management Project (CAR683)
Project Design Document
PDD Version: 7 February 2013

Project Developer/Forest Owner:
National Audubon Society, Inc.

Verification Conducted by:
Environmental Services, Inc.
Forestry, Carbon, and GHG Services Division
Corporate Office at:
7220 Financial Way, Suite 100
Jacksonville, Florida 32256
Phone: 904-470-2200; Fax: 904-470-2112

Project Number VO12009.00



ANSI ACCREDITED PROGRAM
GREENHOUSE GAS
VALIDATION AND VERIFICATION
0800

Table of Contents

1 EXECUTIVE SUMMARY	3
2 INTRODUCTION	4
2.1 Project Developer Contact Information	4
2.2 Verification Team Contact Information, Including Roles and Responsibilities	4
2.3 Project Description	5
3 VERIFICATION DETAILS	6
3.1 Verification Objective	6
3.2 Verification Scope	6
3.3 Verification Criteria:	7
3.4 Verification Level of Assurance:	7
3.5 Verification Materiality Threshold:	7
4 VERIFICATION PROCESS	8
4.1 Desktop Assessment	9
4.2 Site Visit	10
4.3 Quantitative Review	11
4.4 Meetings/Interviews	11
4.5 Verification Milestones	13
5 CLIMATE ACTION RESERVE FOREST PROJECT REQUIREMENTS (IFM)	13
5.1 Project Definition/Type	13
5.2 Project Start Date and Reporting Period	13
5.4 Additionality	14
5.5 Permanence	14
5.6 Included Carbon Pools	15
5.7 Leakage Assessment	15
5.8 Ownership	15
5.9 Regulatory Compliance	15
5.10 Voluntary Implementation	16
5.12 Quantifying Net GHG Reductions and Removals	17
6 VERIFICATION FINDINGS	20
7 VERIFICATION STATEMENT	20
8 VERIFICATION RESULTS / CONCLUSION	20
APPENDIX A – Documents Received/Reviewed	22
APPENDIX B – Stand and Plot Locations	268



1 EXECUTIVE SUMMARY

Environmental Services, Inc., (ESI) was contracted by Blue Source on behalf of the Project Developer/Forest Owner (National Audubon Society, Inc.) to perform the Climate Action Reserve (Reserve) project verification of the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*. Our verification process closely followed the Reserve's Forest Project Protocol Version 3.1 (22 October 2009), ISO14064-3:2006, and ISO 14065:2007.

Specifically, the project verification included the review of the requirements outlined in the Reserve's Forest Project Protocol Version 3.1 (22 October 2009). The assessment included the following items: Greenhouse Gas (GHG) project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG assessment boundary (sources, sinks and/or reservoirs); types of GHG's; and time periods covered. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

After review of all project information, procedures, calculations, and supporting documentation, and after conducting the site visit, ESI confirms that *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* is accurate and consistent with all aforementioned Reserve criteria and requirements. ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation adherence to the Reserve's Forest Project Protocol, v3.1, as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* dated 07 February 2013 meets the requirements of the Reserve.

The GHG assertion provided by National Audubon Society, Inc., and verified by ESI, has resulted in the net GHG emission reduction or removal of 474,735 tCO₂ equivalents by the project during the verification period/reporting period (17 July 2007 – 31 October 2012).

2 INTRODUCTION

This verification report is prepared in accordance with the outlined requirements of the Climate Action Reserve (Reserve) Forest Project Protocol (FPP) Version 3.1 (22 October 2009). Environmental Services, Inc., (ESI) presents project verification findings of the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*, developed by the National Audubon Society, Inc., (Audubon). The Forest Owner is also Audubon, a private organization whose mission is to “conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity.”¹ Blue Source was contracted by Audubon to serve as technical consultants for the carbon project.

The project verification was conducted as part of the Reserve’s program requirements for Greenhouse Gas (GHG) offset projects. ESI is accredited by the American National Standards Institute under ISO14065:2007 for greenhouse gas validation and verification bodies, including ISO 14064-3:2006, ISO 14065:2007, and validation/verification of assertions at the project level for Land Use and Forestry (Group 3). ESI is approved to verify for the Reserve.

2.1 Project Developer

Project Developer/Forest Owner: National Audubon Society, Inc.
Technical Consultant: Blue Source

2.2 Verification Team Contact Information, Including Roles and Responsibilities

Accredited Verification Entity: Environmental Services, Inc.	Shawn McMahon – Lead Verifier (smcmahon@esinc.cc / 330-833-9941) Caitlin Sellers – Verification Team Member (csellers@esinc.cc / 904-361-8227) Stewart McMorrow – Verification Team Member (smcmorrow@esinc.cc / 530-412-1221) Richard Scharf – Verification Team Member (rscharf@esinc.cc / 252-402-7354) Terese Walters – Forest Biometrician/Verification Trainee (twalters@esinc.cc / 541-221-2649) Janice McMahon – QA/QC (jmcmahon@esinc.cc / 330-833-9941) Steve Ruddell – Senior Internal Reviewer (steve@carbonverde.com / 970-403-3430)
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¹ National Audubon Society, *About Us*, <http://www.audubon.org/about-us>, Date accessed: 16 October 2012.



2.3 Project Description

ESI was contracted by Blue Source on behalf of Audubon to conduct the Reserve's project verification of the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*, which falls under the Climate Action Reserve Forest Project Protocol Version 3.1 (22 October 2009).

As stated in the Project Design Document (PDD) (Section 1), the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* is intended to “avoid the release of carbon emissions from biomass and soil stocks, and results in the ongoing sequestration of carbon in future biomass growth.” Audubon (the Forest Owner)’s strategy is to maintain and increase additional forest carbon stock by employing no active forest management and permanently conserving the Project Area as forest. The project was initiated in July of 2007 when the Forest Owner conveyed a permanent Conservation Easement (CE) on the property to the Natural Resources Conservation Service (NRCS). “Under the terms of the easement, the following activities and uses are among those prohibited, unless authorized by the NRCS.

- Altering of grassland, woodland, wildlife habitat or other natural features by burning, digging, plowing...or otherwise destroying vegetative cover
- Harvesting wood products
- Draining, dredging, channeling, filling, leveling, pumping, diking, impounding...as well as altering or tampering with water control devices
- Planting or harvesting any crop
- Development or conversion to non-forest uses” (PDD, Section 1)

The Forest Owner has engaged Blue Source as the technical consultant.

The project consists of 5,548 acres² located the tidewater region of South Carolina within Berkeley, Dorchester, and Orangeburg Counties. “It is dominated by naturally occurring native hardwood species, [including red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), bald cypress (*Taxodium distichum*), tupelo gum or blackgum (*Nyssa sylvatica*)] in uneven-aged stands, with a smaller component of stands of naturally generated native softwoods [loblolly pine (*Pinus taeda*), spruce (*Picea spp.*), longleaf pine (*Pinus palustris*) and a small area of planted loblolly pine].”

The Project Area as a whole is situated in the Atlantic Coastal Plain & Flatwoods CAR Supersection. The Atlantic Coastal Plain Swamp Hardwood & Cypress Assessment Area was used for the project calculations.

ESI confirmed the project was located in the above-referenced Supersections and Assessment Areas by reviewing project maps, satellite imagery and by spot-checking locations while on the site visit.

² Note: The project area does not include areas protected by pre-existing deed restrictions (approximately 589 acres) that were in place when the easement was established (total property and easement acreage is equal to 6,127 acres).

3 VERIFICATION DETAILS

3.1 Verification Objective

The verification objective was to ensure the project was in compliance with Reserve's criteria (FPP, Version 3.1; 22 October 2009). ESI assessed the GHG emissions removal assertions for this Improved Forest Management (IFM) project.

3.2 Verification Scope

The scope of the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* verification included:

- GHG project and baseline scenarios
- Physical infrastructure, activities, technologies and processes of the GHG project
- GHG assessment boundary (sources, sinks and/or reservoirs);
- Types of GHG's
- Time periods covered

The geographic verification scope was defined by:

- The project boundary
- The carbon reservoir types
- Management activities
- Growth and yield models (Forest Vegetation Simulator (FVS))
- Inventory program
- Contract periods

The scope also defined the primary and secondary effects of the GHG assessment boundary by indicating the forest carbon stock and emission categories as being required or optional. The scope of the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* was defined as follows:

Baseline Scenario	The baseline carbon stock model resulted in an average weighted (by strata acreage) baseline aboveground live carbon stock of 76.95 mt CO₂e/acre. The Project Area includes previously private and commercial forestlands and was actively managed for timber production. The baseline scenario is harvesting approximately 100% of growth over the life of the project, leaving stands in degraded states.
Activities/Technologies/Processes	Improved Forest Management – owner conveyed a permanent conservation easement to the NRCS; no active management of the Project Area will occur and the property will be permanently conserved as forest.
GHG Assessment Boundary (Sources/sinks/Reservoirs)	Based on the PDD, the following is an outline of the GHG Assessment Boundary for the project: Primary Effect: IFM-1 Standing live carbon IFM-3 Standing dead carbon IFM-7 Carbon in in-use products



	IFM-8 Forest product carbon in landfills Secondary Effect: IFM-9 Biological emissions from site prep activities IFM-14 Biological emissions/removals from changes in harvesting on forestland outside Project Area IFM-17 Biological emission from decomposition of forest products
GHG Type	CO ₂ , CH ₄ , and N ₂ O
Time Period	Start date: 17 July 2007 Verification Period: 17 July 2007 – 31 October 2012
Project Boundary	5,548 acres owned by the National Audubon Society, Inc. Tidewater Region of South Carolina Berkeley, Dorchester, and Orangeburg Counties

3.3 Verification Criteria:

The criteria followed the verification guidance documents provided by the Reserve located at <http://www.climateactionreserve.org/how/program/program-manual/> and <http://www.climateactionreserve.org/how/protocols/forest/>. These documents include:

- a) *Climate Action Reserve Forest Project Protocol, Version 3.1, 22 October 2009*
- b) *Forest Project Verification Protocol, Version 3, 01 September 2009*
- b) *Protocol Resources, such as Biomass Equations, Assessment Area Data, Forest Project Forms, and Forest Project Baseline Determination, as updated on the Reserve website*
- c) *Climate Action Reserve Verification Program Manual, Version 2.0, 20 December 2010*
- d) *Climate Action Reserve Program Manual, 26 October 2011*
- e) *Policy Memos, as updated on the Reserve website*
- f) *Announcement Regarding Optional Carbon Pools, 4 March 2011*
- g) *Climate Action Reserve Software*
- h) *ISO 14064-3:2006 Principles and Requirements for Verifying GHG Inventories and Projects*

3.4 Verification Level of Assurance:

The level of assurance was used to determine the depth of detail that the verifier placed in the verification plan to determine if there were any errors, omissions, or misrepresentations (ISO 14064-3:2006). ESI selected samples of data and information to be verified to provide *reasonable* assurance (not *absolute* assurance) to meet the materiality requirements of the specific project (*Climate Action Reserve Verification Program Manual, Version 2.0, 20 December 2010*). Sample size was determined based upon the guidance provided in the *Reserve FPP Version 3.1 (22 October 2009)* and project parameters.

3.5 Verification Materiality Threshold:

Materiality is a concept that errors, omissions and misrepresentations could affect the GHG emissions reduction assertion and influence the intended users (ISO 14064-3:2006). Based on the Reserve's Verification Program Manual, verification bodies must form a view on the materiality of all identified issues, errors, or uncertainties. ESI classified each issue as material (significant) or immaterial (insignificant). Throughout the verification process, Blue Source addressed all non-conformity reports and clarifications that were requested by ESI to the satisfaction of the ESI verification team.

The Reserve's Verification Program Manual establishes a quantitative materiality threshold, which sets a numeric cap [1% for all projects where the carbon removals exceed 100,000 Climate Reserve Tonnes (CRTs) annually] on the magnitude of cumulative error in stated reductions permissible under the Reserve, as a percent of the verifier's recalculated emission reductions. In determining whether a material misstatement has occurred, the verification body must compare the aggregate total of misstatements against the materiality threshold for the total CRTs reported to the Reserve.

Additionally, there can also be qualitative issues identified by the verification body as non-conformances with the project protocols that relate to the requirements laid out in the protocols (e.g., the metering, monitoring, management systems, record-keeping, etc.). Any non-conformance related to a prescriptive requirement outlined in the protocol would be considered material and must be corrected in order for the project to receive a positive Verification Statement. A prescriptive requirement relates to any specific guidance or requirement mandated by the protocol itself that does not allow for deviation, or for verifier professional judgment. All potential non-conformances identified were sufficiently addressed by the project developer.

4 VERIFICATION PROCESS

The verification process closely followed the guidance provided by the Climate Action Reserve, FPP (v3.1), Verification Program Manual, ISO14064-3 and ISO 14065, and the ESI Management System and Management System Manual (v12), Section V.3.

As defined by ISO 14064-3:2006 (E), "verification is the systematic, independent and documented process for the evaluation of a greenhouse gas assertion in a GHG project plan against agreed verification criteria." Specifically the project verification (assessment) included the review of the requirements outlined in the Climate Action Reserve, FPP Version 3.1 (22 October 2009). The assessment included the following items:

- Eligibility criteria
- Baseline approach
- Additionality
- Project boundary
- Emissions
- Leakage
- Quantification of GHG reductions/removals
- Monitoring
- Data and parameters
- Adherence to the project-level principles
 - Relevance
 - Completeness
 - Consistency
 - Accuracy
 - Transparency
 - Conservativeness

In general, ESI's verification was broken down into four components:

1. Desktop assessment
2. Site visit
3. Quantitative review
4. Meetings/interviews

4.1 Desktop Assessment

ESI received and reviewed the submittals to the Reserve to assess conformance with the requirements of the Reserve's FPP. Key factors that impacted the reported emissions reductions were identified, and a Verification and Sampling Plan was created to focus on the critical elements presenting potential risk for errors in reported data. These elements included:

- Appropriate and adequate documentation of IFM project type
- Implementation of appropriate and adequate eligibility criteria
 - Documentation and field conditions relevant to additionality
 - Voluntary implementation attestation and implementation agreement
 - Project start date, crediting period, and minimum time commitment
 - Project location and CEs/deeds/titles
 - Regulatory compliance, sustainable harvesting, and Natural Forest Management.
- Completeness and accuracy of the *Blue Source – Francis Beidler Improved Forest Management Project Design Document*
- Implementation of appropriate and adequate approach/tools for additionality (i.e., legal requirements and performance tests)
 - Documentation and field conditions which reflect the most-likely without-project scenario, as it deviates from the with-project scenario.
- Implementation of appropriate and adequate approach to project boundary/Project Area definitions
 - Documentation of project boundaries/ownership status and field conditions relative to clearly delineated ownership extents and control over management activities within the Project Area
- Implementation of appropriate and adequate approach to GHG assessment boundary for IFM projects [i.e., define all sources, sinks and reservoirs that must be accounted for in quantifying IFM projects reductions and removals (Table 5.1 of the FPP, Version 3.1)]
- Implementation of appropriate and adequate approach to the inventory methodology
- Appropriate and adequate approach for quantifying and modeling net GHG reductions and removals (baseline/actual onsite carbon stocks, baseline/actual carbon in harvested wood products, project's primary and secondary effects, total GHG reductions/removals) - confirmed through documentation review, re-calculations/sampling, and field condition assessment.
- Appropriate and adequate monitoring of onsite carbon stocks
 - Application of approved/acceptable monitoring practices in the field
 - Appropriate handling and analysis of field data once collected
- Appropriate and adequate approach to data and parameters
 - Data handling practices
 - Reviewing documentation at each step of the data analysis procedure
- Implementation and adherence to project-level principles
 - Reviewing documentation and discussing the application of project-level principles with core staff.

Prior to the field visit, the verification team conducted a desk review of project documents. This included examination of the PDD, the Reserve listing submittal, and supporting project documentation/reports. ESI found the documentation submitted by Blue Source to be adequate to proceed with the site visit.

Refer to Appendix A for a listing of all documents ESI received and reviewed during project verification.

4.2 Site Visit

Following the initial desk review, ESI conducted an on-site assessment of the Project Area on 18-22 June 2012 and 15-16 October 2012. The site visits were used to review project records with a representative of Blue Source, discuss the calculation of carbon pools and sinks, and visit random portions of the ownership for reconnaissance to ground-truth the assertions of the PDD and submitted data.

During the site visits, the verifier reviewed the inventory procedures with representatives of the project developer. The verifier collected and recorded species, Diameter at Breast Height (DBH), and height data as described in the inventory methodology (Section 3 of the PDD), while confirming the Project's adherence to its inventory methodology. The required Standing Live and Standing Dead pools were inventoried in accordance with Appendix A of the FPP.

Processes described by the FPP (Version 3.1, Section 10), the Forest Project Verification Protocol (FPVP) v3.0, and ISO 14064-3 were followed in order to verify the sampling data. Sample size and techniques are based on the project parameters relative to the minimum plot sampling requirements outlined by the Reserve. On the first day of the site visit, ESI confirmed the answers to the five questions in Table 1 of checklist 5.5 of the FPVP v3.0 and finalized the Verification Field Intensity (VFI) calculations.

All questions/items received a score of one (1) and, given a verification multiplier of 1.5, the final VFI was determined to equal 1.5; thus, six plots were required for re-measurement. All plots were located within the highest stocking level of the Project Area, as dictated in Table 4 of checklist 5.5 of the FPVP v3.0.

Microsoft Excel was used to generate random numbers in order to randomly select the six re-measurement plots based on the stratification of the Project Area and the areas of highest stocking levels. Those plots that were randomly selected are listed below:

- 2169
- 2177
- 2199
- 21146
- 21153
- 21160

Because of heavy rains immediately preceding the site visit, access to the plots was very difficult, as most of the plots were located in knee to waist deep water. The verifier was unable to access plot 21160, as it was located beyond an impassable depth of water. However, the verifier did observe from a distance that the plot was located at specified location. Therefore, plots 2175 and 2194 (2175 because of proximity and accessibility, and 2194 because it was next in the random number sequence) were re-sampled in its place.

The results of the plot data collected by ESI was compared to the project proponent's reported inventory for the same location. The results were analyzed using a paired T-test at the 80 percent confidence interval. Mean carbon stocking calculated from ESI's measurements was not found to be significantly different from those reported by the inventory at $\alpha = 0.2$. Thus, no further data collection was required.

The inventory update process, as outlined in Section 3f of the PDD, had not yet been utilized, as no new data needed to be updated at the time of verification, and no harvests had occurred after the inventory was taken.

Additionally, project boundaries were visited in several areas of the *Blue Source – Francis Beidler Improved Forest Management Project* to compare to the Global Positioning System (GPS) files and maps provided. All areas visited were consistent with the provided data.

4.3 Quantitative Review

ESI conducted an intensive review of all input data, parameters, formulas, connections, conversions, statistics and resulting uncertainties, as well as output data, to ensure consistency with the Reserve's FPP (v3.1). Please refer to Section 5.12 of this report (*Quantifying Net GHG Reductions and Removals*) for specific information about the quantitative review.

4.4 Meetings/Interviews

During the course of the project verification, ESI and Blue Source held multiple meetings on-site, via phone conference, or with Skype™. All other correspondence occurred via email. The details of the meetings are briefly described in the table below:

Date	Attendees	Topics Discussed
07 June 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Janice McMahon (ESI)	Overall Verification Opening Meeting - preliminary review of verification and sampling plan - review of travel logistics - review of project timeframes and deadlines
18 June 2012	Jeff Cole (Blue Source) Bobby Sarvis (American Forest Management, Inc.) Sam Carlton (AFM) Norman Brunswig (Audubon) Caitlin Sellers (ESI)	Field Verification Opening Meeting - review of site visit agenda - discussion of goals of the site visit - review schedule for the site visit
22 June 2012	Jeff Cole (Blue Source) Caitlin Sellers (ESI)	Field Verification Closing Meeting - review of findings with project developer/delivery of corrective action requests/clarifications - discussion of next steps and scheduling, request feedback on process, etc.
16 July 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Janice McMahon (ESI)	Calculation and modeling review meeting to discuss and have client demonstrate the legal requirements are fully integrated into the model as well as to show the entire procedure used for modeling growth projections.
27 August 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Conference call to discuss: - adding Terese Walters (Forest Biometrician) to the verification team - biomass equations - site index calculations
29 August 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source)	Meeting to discuss NCRs



	Caitlin Sellers (ESI) Shawn McMahon (ESI)	
04 September 2012	Ben Parkhurst (Blue Source) Caitlin Sellers (ESI)	Meeting to discuss Harvested Wood Products calculations
27 September 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Meeting to review NCRs
08 September 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Meeting to discuss site index issues
09 October 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Terese Walters (ESI) Shawn McMahon (ESI)	Meeting to discuss: - site index quantification - timing of second site visit
10 October 2012	Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Follow-up meeting on site index
17 October 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Terese Walters (ESI) Shawn McMahon (ESI)	Meeting to discuss site index findings
19 October 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Meeting to discuss site index conclusions
31 October 2012	Roger Williams (Blue Source) Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Shawn McMahon (ESI)	Meeting to discuss draft NCR responses
27 November 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Steve Ruddell (CarbonVerde, LLC)	Meeting to discuss the findings of the Senior Internal Reviewer
28 November 2012	Jeff Cole (Blue Source) Ben Parkhurst (Blue Source) Caitlin Sellers (ESI) Steve Ruddell (CarbonVerde, LLC)	Meeting to discuss the baseline calculation and status of verification
26 March 2013	Jeff Cole (Blue Source) Janice McMahon (ESI)	Overall Closing Meeting - Review of final verification report and findings lists - Next steps and project upload - Request feedback on process

4.5 Verification Milestones

The following table documents the main verification activities that occurred during the project verification process:

Project/Verification Activity	Date
ESI Internal Conflict of Interest (COI) process completed and approved (no issues). Blue Source Notification.	17 May 2012
Reserve approval of NOVA/COI	23 May 2012
Opening meeting with Finite Carbon	07 June 2012
Submission of Verification and Sampling Plan to Blue Source for approval	07 June 2012
Receipt of Signed Verification and Sampling Plan from Blue Source	18 June 2012
Field Verification	18-22 June 2012
Site Index Field Verification	15-16 October 2012
ESI completes Review	09 November 2012
Draft report and project information sent to Senior Independent Reviewer	12-14 November 2012
Draft verification report submitted to Blue Source for review	30 November 2012
Draft verification report submitted to the Reserve for review	11 December 2012
ESI completed review of Project Implementation Agreement (PIA) execution and recording	26 March 2013
Closing Meeting with Blue Source	26 March 2013
ESI uploads final report and files to Reserve website	27 March 2013

5 CLIMATE ACTION RESERVE FOREST PROJECT REQUIREMENTS (IFM)

5.1 Project Definition/Type

The *Blue Source – Francis Beidler Improved Forest Management Project* has demonstrated it occurs on land with canopy cover exceeding 10%. The site visit and review of aerial imagery confirmed canopy cover well exceeded the 10% canopy threshold across the entire Project Area. In addition, no broadcast fertilizer utilization occurs in the Project Area, as confirmed in the PDD (Section 2a) and observed during the site visit.

The *Blue Source – Francis Beidler Improved Forest Management Project* is an IFM project where the Forest Owner's strategy is to maintain and increase additional forest carbon stock by employing no active forest management and permanently conserving the Project Area as forest. The *Blue Source – Francis Beidler Improved Forest Management Project* is not part of any previously registered Forest Project and is in compliance with the Reserve's project eligibility requirements set forth in the Reserve's FPP 3.1.

5.2 Project Start Date and Reporting Period

The start date of the *Blue Source – Francis Beidler Improved Forest Management Project* is 17 July 2007. The Forest Owner has submitted documentation denoting the start date action as conveying a permanent CE on the property to the NRCS (see *Francis Beidler Forest 1 Project Start Date Documentation.pdf* as published on the Reserve website). Accordingly, the date reflects an initiation of a commitment to employ practices and technologies that will maintain or increase net carbon stocks for the duration of the FPP's commitment period.

The reporting period is 17 July 2007 to 31 October 2012.

5.3 Project Area and Location

The *Blue Source – Francis Beidler Improved Forest Management Project* consists of 5,548 acres of mostly native, naturally occurring mixed swamp, upland, and riverine hardwood and softwood forests (a small area of planted loblolly pine is also included) in the Tidewater Region of South Carolina. It is within Berkeley, Dorchester, and Orangeburg Counties. The Project Area as a whole is situated in the Atlantic Coastal Plain & Flatwoods CAR Supersection. The Atlantic Coastal Plain Swamp Hardwood & Cypress Assessment Area occurs on the project.

The verifier confirmed the species located within the Project Area were consistent with the Assessment Areas chosen for the project during the site visit and by reviewing the species in the inventory data.

5.4 Additionality

Legal Requirement Test – Blue Source has signed the Reserve’s Attestation of Voluntary Implementation form indicating that the project’s improved forest management activities are not legally required and were not legally required at the time of the project’s start date. In addition, the verifier conducted a risk-based review of applicable laws by visiting the South Carolina Forestry Commission’s website. Additionally, there is a CE held on the property by the NRCS. Both the easement and the South Carolina Forestry Commission rules were reviewed, and all aspects of this project were found to be in compliance.

Performance Test – The *Blue Source – Francis Beidler Improved Forest Management Project* is an IFM project eligible for registration under the Climate Action Reserve because it will increase carbon stocks through longer rotations, which is different from the Business As Usual approach of shorter rotations and high-grading. Therefore, the project activities have been deemed to pass the additionality test.

5.5 Permanence

This requirement states that GHGs must be permanently reduced or removed from the atmosphere to be credited as carbon offsets. For Forest Projects, this requirement is met by ensuring that the carbon associated with credited GHG reductions and removals remains stored for at least 100 years.

The Forest Owner ensures the permanence of GHG reductions and removals from the *Blue Source – Francis Beidler Improved Forest Management Project* through three mechanisms:

1. The Forest Owner understands and has agreed to monitor onsite carbon stocks, submit regular monitoring reports, and submit to regular third-party verification of those reports along with periodic verification site visits (as detailed in Sections 8 through 10 of the FPP) for the duration of the Project life.
2. The Forest Owner has (21 March 2013) signed a Project Implementation Agreement with the Reserve, as described in Section 3.5 of the FPP, which obligates Forest Owners to retire CRTs to compensate for reversals of GHG reductions and removals.
3. The Forest Owner understands that a percentage (20.9%) of their carbon credits will be reserved for a Buffer Pool to provide insurance against reversals of GHG reductions and removals due to unavoidable causes.



The verifier confirmed the reversal risk rating of 20.9% was appropriate by conducting a review of the project's risk assessment. Each of the four risk categories (i.e., Financial, Management, Social, and Natural Disturbance) mentioned in Appendix D of the FPP were separately reviewed and calculated. In addition, the risk category not mentioned in the FPP – the PIA risk category – was appropriately included and calculated in the PDD.

5.6 Included Carbon Pools

The *Blue Source – Francis Beidler Improved Forest Management Project* includes the following carbon pools:

- Primary effects
 - IFM-1 Standing live carbon
 - IFM-3 Standing dead carbon
 - IFM-7 Carbon in in-use products
 - IFM-8 Forest product carbon in landfills
- Secondary effects
 - IFM-9 Biological emissions from site prep activities
 - IFM-14 Biological emissions/removals from changes in harvesting on forestland outside Project Area
 - IFM-17 Biological emissions from decomposition of forest products. No optional pools are included

5.7 Leakage Assessment

The Reserve's FPP requires an assessment of leakage (secondary effects) on an annual basis. Blue Source applied all default "leakage" factors for secondary effects appropriately.

5.8 Ownership

National Audubon Society, Inc., signed the Reserve's Attestation of Title form (3 December 2012), thereby affirming that National Audubon Society, Inc., has an exclusive ownership claim to the GHG reductions and removals achieved by the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*. The verifier has confirmed that the Attestation of Title was signed on 3 December 2012 and uploaded to the Reserve website. In addition, ESI reviewed/confirmed Project Area ownership by reviewing the CE deed for ownership details. The CE shows the Forest Owner as granting the easement to the NRCS on 17 July 2007.

5.9 Regulatory Compliance

National Audubon Society, Inc., signed the Attestation of Regulatory Compliance (3 December 2012), thereby affirming the project's compliance status throughout the project reporting period. During the site reconnaissance and desk review verification activities, ESI sought to confirm that the *Blue Source – Francis Beidler Improved Forest Management Project* is in compliance with all laws related to the scope of the IFM project under the Reserve's FPP.

The PDD stated (Section 2c) that "there have not been any violations, environmental notices, non-compliance events, or any other legal requirements that would prevent the project from meeting the eligibility criteria."

ESI's own risk-based internal review of any applicable federal, state, and local laws did not yield additional results. The verifier conducted a risk-based search of relevant websites to determine regulatory compliance. The State of South Carolina appears to have generous silvicultural allowances for harvesting in wetlands. Best Management Practices (BMPs) are non-binding, and no



other laws were noted. The BMPs are allowable by the governing legal authorities and current easement.

Also, ESI observed a clearcut on a swamp directly abutting the southern portion of the property that had occurred approximately 10 years ago. Based on on-site conversations with local foresters, this type of harvesting in the wetlands was allowable and feasible.

Finally, the local foresters active in the surrounding area provided inventory services, characterized the baseline management practices, and confirmed the legality of both baseline and project management activities.

Thus, ESI concludes that there is no basis to question the Attestation of Regulatory Compliance for this project.

5.10 Voluntary Implementation

National Audubon Society, Inc., signed the Attestation of Voluntary Implementation (3 December 2012), which affirmed that the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* was established and implemented voluntarily and continues to operate as such.

The PDD (Section 2c) states that “planned management activities that will increase carbon stocks over baseline were not legally required by any federal, state, or local regulations at the time the easement was conveyed on the start date.”

The risk-based internal review mentioned in Section 5.9 above confirmed this statement.

As a result, ESI concludes that the Attestation for Voluntary Implementation is accurate and that the project was not legally required by any federal, state, or local laws at the time of the project’s start date.

5.11 Sustainable Harvesting and Natural Forest Management Practices

There are no sustainable harvesting requirements for the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*. No commercial harvesting is planned in the Project Area, nor is it allowed under the terms of the CE. ESI submitted an official Request for Project Guidance to the Reserve on this item on 22 August 2012. The Reserve provided the following response on 29 August 2012:

“The requirement that all forest landholdings owned or controlled by the Forest Owner must currently meet one of the criteria listed in table 3.2 under “Distribution of Age Classes/Sustainable Management” is only applicable to projects when the first regeneration harvest occurs. Since this project will not engage in any harvesting activities (as evidenced by the conservation easement), then the above mentioned requirements do not apply to this project. However, this is contingent on the verifier confirming that there is no evidence of any regeneration harvest that takes place throughout the lifetime of the project. The project is still expected to meet all other aspects of the Natural Forest Management requirements.”

The project also currently employs Natural Forest Management practices as defined in Section 3 of the FPP. The project complies with the Natural Forest Management Practices by the following:



- Based on the 2011 and 2012 combined inventories, native tree species constitute > 99 percent of standing live carbon (Table 2, page 9 of PDD). This falls above the 95% minimum set by the Reserve.
- The Assessment Area Data File (part of FPP Appendix F.) requires that no single species in the Atlantic Coastal Plain constitute more than 65 percent of prevalence (percent Basal Areas (BA) of all live trees in the Project Area). In this case, no species constitutes over 29 percent of the BA, considerably less than 65 percent (Table 2).
- There is no commercial harvesting on either the project lands or other non-Project Area forestlands under control of the Forest Owner; thus, the requirements for uneven age silvicultural practices and canopy retention exceeding 40% across the forest are met.
- Given the lack of commercial harvesting, all stands are expected to mature without anthropogenic disturbance and undergo natural forest stand dynamics. As individual stems are excluded over time due to competition and natural mortality, natural regeneration is expected to fill the gaps left by the deceased individuals. Thus, it is not expected that the Project Area will maintain more than 40% of its forested acres in ages less than 20 years at any time during the life of the project. Note that the last commercial harvests on the Project Area occurred in the mid-1980s on <40% of the acreage (PDD, Section 2.h.iii).
- Based on inventory data, the actual onsite carbon for standing dead wood was 1.4 metric tonnes of carbon per acre (equivalent to 2.42% of standing live carbon). The level of both the standing dead and lying dead wood pools is expected to remain stable throughout the life of the project; the Forest Owner does not actively remove dead wood, nor is it permitted under the terms of the CE. This requirement will be continuously monitored and confirmed during future verification events.
- The project is designed for on-site standing live carbon stocks to be maintained and/or increase throughout the lifetime of the project. Carbon stocks will be monitored through new inventories to ensure this requirement is achieved.

5.12 Quantifying Net GHG Reductions and Removals

ESI conducted an intensive review of all input data, parameters, formulas, connections, conversions, statistics, resulting uncertainties, and output data to ensure consistency with the Reserve's FPP (v3.1). Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. All data, conversion factors, formulas, and calculations were provided by the project proponent in spreadsheet format to ensure all formulas were accessible for review. The project proponent also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with the FPP. ESI confirms that the project employed the correct Component Ratio Method (CRM) process to determine above- and below-ground biomass from measured tree data in all cases. Specific items related to quantifying net GHG reductions and removals are detailed below.

Modeling

FVS was used for modeling of both the baseline and project scenarios. Calibration occurred in the following way: the variant ("SN") and project location code (indicating the closest National Forest – in this case, Francis Marion) were input to the model along with the inventory design parameters for proper calibration. The Site Index (SI) values used for the modeling were derived from an analysis of height and age samples of dominant and co-dominant sweetgums and blackgums sampled along transects across the Project Area (PDD Section 3.e.v). Sweetgum values were converted to blackgum SI values based on a conversion factor developed by the project proponent (process described in detail in PDD Section 3.e.v and the supplemental document *Beidler Site Index Final Issues_10_17_12.docx*).



ESI confirmed the validity of these methods and that the SIs resulting from the analysis were averaged for each stratum and used appropriately for model calibration. The SIs (blackgum, base age = 50) resulting from the analysis and used for model calibration are presented for each stratum below:

- Compartment 2, Stand 1 = 60.5
- Compartment 2, Other Stands = 69.0
- Compartment 3, Stand 1 = 68.3
- Compartment 3, Other Stands = 68.0

The site index for other species was adjusted (based on the input SIs) automatically within FVS using a transformation methodology based on species-specific factors.³ For all other parameters, the SN variant default values were used (Table 6, page 18 of PDD).

The baseline growth and harvest regime was designed to maximize revenue and included clearcuts and thinnings representing the financially viable acreage to be harvested in a given year. A “no management regime” (i.e., no harvesting) was modeled for the project scenario. All legal and financial considerations were applied in the baseline model through treatment types and output constraints. The project incorporated the appropriate legal restraints in both the baseline and project calculations. In modeling the baseline for standing live carbon stocks, the Forest Owner has incorporated financial constraints that affect baseline growth and harvesting scenarios. As per FPP section 6.2.1.2, the Forest Owner has provided evidence which demonstrates similar harvest activities by another forest landowner have taken place on at least one other comparable site within the past 15 years.

Modeling occurred in accordance with Section 6.2 of the FPP, and outputs demonstrated the required periodic harvest, inventory, and growth estimates. The verifier confirmed the project’s modeling process (PDD, Sections 3 and 4) contained the verification items listed in Table 10.1 of the FPP. In addition to being described in the PDD, modeling scenarios were demonstrated in associated spreadsheets. Since much of the calculations and modeling for this project are automated, the client has provided personal navigation through the various software programs consisting of the growth forecasting used to generate the baseline and project scenarios. The client and verifier used online meeting venues to demonstrate the various keyword limitations and programming language that illustrated the specific prescriptions.

Representative Verification Plot

The client was provided with a representative plot consisting of all the tree species encountered in the original inventory with varying DBH’s and heights for the purpose of checking the CRM calculation’s process and accuracy. This plot was recalculated by verifiers and found to be within an acceptable range for the purposes of assessing accuracy and correctness. Additionally, mean carbon stocking calculated from ESI’s on-site plot measurements was not found to be significantly different from those reported by the inventory at $\alpha = 0.2$.

Applying a Confidence Deduction

The combined statistical uncertainty (with stratification) associated with the forest carbon inventory for this project was found to equal +/- 5.5% at a confidence level of 90%. Because the uncertainty

³ Keyser, Chad E., comp. 2008 (revised May 8, 2012). Southern (SN) Variant Overview – Forest Vegetation Simulator. Internal Rep. Fort Collins, CO: U. S. Department of Agriculture, Forest Service, Forest Management Service Center. 70p.

is greater than 5%, a confidence deduction is required. As per the FPP Appendix A.4, this project applied the appropriate confidence deduction (0.4%) when calculating GHG reductions and removals.

Harvested Wood Products

ESI confirmed that the baseline Harvested Wood Products calculations were in accordance with the guidelines of Table 10.1 and Appendix C of the FPP. The verifier reviewed the spreadsheet associated with Harvested Wood Products (*BeidlerWoodProducts_10_25.xlsx*) and compared to the standards and factors of the FPP. The verifier confirmed the appropriate factors were used and that the Standard Wood Products Generated by the Reserve were appropriate for accounting of Harvested Wood Products in the baseline. Additionally, the client held a meeting on 04 September 2012 where the Harvested Wood Products calculations were discussed in detail with the verifiers, and the entire process was outlined and demonstrated. Because there is no harvesting planned for the Project Area, there are no *ex ante* estimates of harvested wood products in the project scenario. The annual difference between the project and the baseline (a negative value) was accounted for accordingly, resulting in a reduction in CRTs issued.

ESI reviewed the calculations associated with Primary and Secondary Effects to ensure consistency with Sections 6 and 6.2.6 of the FPP, respectively. For project emissions, the default leakage factor of 20% was applied to the difference in harvest volume relative to baseline harvest volume, which the verifier confirmed in the project's calculations. Biological emissions from site preparation are not quantified separately but rather are captured by measuring changes in activities in included carbon reservoirs. For other carbon reservoirs, changes are unlikely to have a significant effect on total quantified GHG reductions/removals since natural regeneration is the method of site preparation. Secondary effects were calculated automatically by the project CRT form.

Risk rating & Buffer Pool Contribution

In addition, the Project's risk analysis and Buffer Pool contribution were reviewed in detail. All relevant risk assessments were included, and the resulting risk rating was 20.9% to be contributed to the Buffer Pool. All risk values were derived from defaults, except the PIA factor. The client provided a Type 1 Subordination clause in the PIA, thus a 2% PIA risk factor was included in the calculation of the project's reversal risk rating. The results were deemed appropriate and acceptable by the verifier.

Data Management & Analytical Systems

ESI also conducted a comprehensive assessment of all data collection and storage procedures to ensure all opportunities for error in transposition of data between data were minimized. ESI recalculated the statistics independently to confirm the accuracy of the reported precision and the results correlated. Field data collection utilized appropriate principles of forestry data collection, including appropriate tools and methods. Collected data was handled appropriately, including a structured process for quality check. Analysis of collected data used appropriate formulas, conversions, and parameters, supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

During ESI's verification, the evidence provided by the project proponent was more than sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project.

6 VERIFICATION FINDINGS

The List of Findings has been compiled and is available under separate cover. The List of Findings is a confidential document between ESI (verifiers) and Blue Source/National Audubon Society, Inc., (Project Developer/Forest Owner) and is not publicly available.

After review of all project information, procedures, calculations, supporting documentation and site visit, ESI confirms that the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* (as provided 07 February 2013) is accurate and consistent with all aforementioned Reserve criteria and requirements. ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation adherence to the Reserve's Forest Project Protocol, v3.1, as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *Blue Source – Francis Beidler Improved Forest Management Project* meets the requirements of the Reserve.

The GHG assertion provided by National Audubon Society, Inc., and verified by ESI has resulted in the GHG emission reduction or removal of 474,735 tCO₂ equivalents (after buffer withholding) by the project during the verification period/reporting period (17 July 2007 – 31 October 2012).

7 VERIFICATION STATEMENT

This verification statement confirms that Environmental Services, Inc., has evaluated the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*, and its Project Design Document dated 07 February 2013, developed by National Audubon Society, Inc., (Forest Owner) according to the criteria outlined by the Climate Action Reserve and that this verification statement is consistent with ISO 14064-3:2006 and ISO 14065:2007. The dates of the period evaluated for this verification are 17 July 2007 to 31 October 2012.

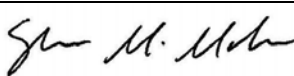
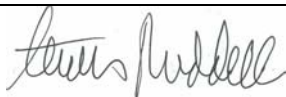
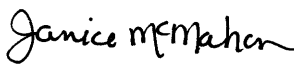
Environmental Services, Inc. confirms all verification activities including objectives, scope and criteria, level of assurance, project design documentations and project implementation adherence to the Climate Action Reserve Forest Project Protocol, Version 3.1, 22 October 2009 as documented in this verification report for the project entitled *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)*, dated 07 February 2013 are complete. ESI concludes without any qualifications or limiting conditions that the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* is without material discrepancy; the verification activities provide a reasonable level of assurance; the project meets the requirements of Climate Action Reserve; and the project produces 600,172 total net CRTs before the 20.9 % buffer withholding. Total cumulative CRTs are 474,735, as 125,437 CRTs will be contributed to the Buffer Pool.

8 VERIFICATION RESULTS / CONCLUSION

ESI confirms all verification activities including objectives, scope and criteria, level of assurance and the PDD adherence to the Climate Action Reserve Forest Project Protocol, Version 3.1 as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *Blue Source – Francis Beidler Improved Forest Management Project (CAR683)* meets the requirements of the Climate Action Reserve Forest Project Protocol, Version 3.1.

Report Submitted to:	National Audubon Society, Inc. Climate Action Reserve
Report Submitted by:	Environmental Services, Inc. Corporate Office



	7220 Financial Way, Suite 100 Jacksonville, Florida 32256
ESI Lead Verifier Name and Signature:	 Shawn McMahon Lead Verifier
Senior Internal Reviewer Name and Signature:	 Steve Ruddell Senior Internal Reviewer
ESI Regional Technical Manager Name and Signature:	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	27 March 2013

CLS/SM/JAP/JPMVO12009.00 Beidler_Verif_Report_FINAL.doc
K PF 03/27/13f



APPENDIX A – Documents Received/Reviewed

During the project verification, ESI received and reviewed the following documents provided by Blue Source and the Reserve:

Project Listing Documents (downloaded from CAR website)

- Francis Beidler Forest 1 Project Start Date Documentation.pdf
- 2010-Submittal3-CAR683.pdf
- Francis Beidler Forest 1 Ownership Interests Documentation.pdf
- Francis Beidler Forest 1 Project Boundary Map.pdf
- Blue Source - Audubon Beidler CAR 683 Attestation of Voluntary Implementation.pdf
- Blue Source - Audubon Beidler CAR 683 Attestation of Regulatory Compliance.pdf
- Blue Source - Audubon Beidler CAR 683 Attestation of Title.pdf
- Beidler_Map_8_9_2012.pdf
- NOVA-COI-05-24-2010.pdf

The following documents were provided to the verifier via email, FTP or Dropbox on the following dates:

Submitted 06 June 2012

- Beidler Plots
 - o Beidler_Plots.shx
 - o Beidler_Plots.dbf
 - o Beidler_Plots.prj
 - o Beidler_Plots.sbn
 - o Beidler_Plots.sbx
 - o Beidler_Plots.shp
 - o Beidler_Plots.shp.OWNER-PC.1292.5236.sr.lock
 - o Beidler_Plots.shp.xml
 - o Beidler_Plots.shx
- Map
 - o BeidlerMap_6_5_2012.pdf
- Beidler PDD
 - o Beidler PDD_0606_ESI.docx
- Beidler Boundaries
 - o Beidler_Boundaries.dbf
 - o Beidler_Boundaries.prj
 - o Beidler_Boundaries.sbn
 - o Beidler_Boundaries.sbx

- o Beidler_Boundaries.shp
- o Beidler_Boundaries.shp.xml
- o Beidler_Boundaries.shx
- Inventory Methodology
 - o BeidlerPhaseII_Jobspecs_6_5_2012.doc

Submitted 08 June 2012

- Deed_Boundaries
 - o Beidler_Deed_Boundaries.shx
 - o Beidler_Deed_Boundaries.dbf
 - o Beidler_Deed_Boundaries.prj
 - o Beidler_Deed_Boundaries.sbn
 - o Beidler_Deed_Boundaries.sbx
 - o Beidler_Deed_Boundaries.shp
 - o Beidler_Deed_Boundaries.shp.OWNER-PC.1292.5236.sr.lock
 - o Beidler_Deed_Boundaries.shp.xml
- Deeds
 - o TNC 340 Acres 1978.pdf"
 - o TNC pg 310 Deed.pdf
 - o Beidlers to TNC 1970 Deed.pdf
 - o Deed and GP514 Deed Title Insurance - 03 30 1987 - 514 35 acres.pdf
 - o EM Reeve Deed 1993.pdf
 - o GP5 and GP148 Deed and Title Insurance - 11 19 1986-5.63 and 149 75 acres.pdf
 - o GP283 Deed and Title Insurance - 11 25 1986 - 283 72 acres.pdf
 - o GP821 Deed - 12 10 1987 - 821 acres.pdf
 - o Jane Mims 137 Deed 06 20 1988 138.11 acres.pdf
 - o SC Beidler Closing Binder 6,127 acre USA conservation easement (01791834).pdf
 - o T H Mims, Mims5, Mims43 Deeds.pdf
 - o TH Mims Corrective Deed 09 14 1979.pdf
 - o TNC 10% Interest Deed 1974.pdf



- TNC 50% interest Deed 1971.pdf
- Inventory
- Beidler_Inventory.xlsx"
- Map
- BeidlerMap_6_8_2012.pdf

Submitted 15 June 2012

- StrataPlots.xlsx
- Beidler_Inventory.xlsx
- BeidlerMap_6_15_2012.pdf
- Stands
 - o Beidler_Stands.shx
 - o Beidler_Stands.dbf
 - o Beidler_Stands.prj
 - o Beidler_Stands.sbn
 - o Beidler_Stands.sbx
 - o Beidler_Stands.shp
 - o \Beidler_Stands.shp.OWNER-PC.1292.5236.sr.lock
 - o Beidler_Stands.shp.xml

Submitted 18 June 2012

- VerificationSecondaryTreeList_6_18.pdf
- VerificationTreeList_6_18.xlsx
- BeidlerPlotCO2eRanking.xlsx
- SC Beidler Closing Binder 6,127 acre USA conservation easement (01791834).pdf
- VerificationPrimaryTreeList_6_18.pdf

Submitted 21 June 2012

- BeidlerSpeciesCodes.xlsx
- Beidler_Inventory (3).xlsx

Submitted 27 June 2012

- BeidlerSpeciesCodes.xlsx

Submitted 29 June 2012

- Baseline FVS Modeling
 - o DatabaseChecks.xlsx
 - o BaselineFVSModeling\BeidlerBaselineHarvestSchedule.xlsx
- Baseline Cmp2
 - o Treelist_Cmp2.xlsx
 - o Baseline60YrSMZ_Cmp2_1_20.xls
 - o Baseline60YrSMZ_Cmp2_21_38_87.xls

- o Baseline60YrSMZ_Cmp2_822.xls
- o BaselineCmp2.mdb
- o BaselineCmp2_1_20_60SMZ.bat
- o BaselineCmp2_1_20_60SMZ.chp
- o BaselineCmp2_1_20_60SMZ.key
- o BaselineCmp2_1_20_60SMZ.out
- o BaselineCmp2_1_20_60SMZ.sum
- o BaselineCmp2_1_20_60SMZ.tre
- o BaselineCmp2_1_20_60SMZ.trl
- o BaselineCmp2_1_20_75yr.key
- o BaselineCmp2_21_38_87_60SMZ.bat
- o BaselineCmp2_21_38_87_60SMZ.chp
- o BaselineCmp2_21_38_87_60SMZ.key
- o BaselineCmp2_21_38_87_60SMZ.out
- o BaselineCmp2_21_38_87_60SMZ.sum
- o BaselineCmp2_21_38_87_60SMZ.tre
- o BaselineCmp2_21_38_87_60SMZ.trl
- o BaselineCmp2_21_38_87_V1.key
- o BaselineCmp2_822_60SMZ.bat
- o BaselineCmp2_822_60SMZ.chp
- o BaselineCmp2_822_60SMZ.key
- o BaselineCmp2_822_60SMZ.out
- o BaselineCmp2_822_60SMZ.sum
- o BaselineCmp2_822_60SMZ.tre
- o BaselineCmp2_822_60SMZ.trl
- o BaselineCmp2_822_V1.key
- o Plot_Cmp2.xlsx
- o Stand_Cmp2.xlsx
- o Suppose.loc

- Baseline Carbon Calculations
 - o BeidlerBaselineHarvestSchedule_6_29_2012.xlsx
 - o Beidler_Baseline_Table_6_29_2012.xlsx
 - o BeidlerBaselineCalcs_6_29_2012.xlsx
- CAR_CalculationWorksheet
 - o Beidler-Forest-Project-Calculation-Worksheet_6_29_2012_V2.xlsx
- Project Carbon Calculations
 - o BeidlerProjectCalcs_6_29_2012.xlsx



- o Beidler_Project_Table_6_29_2012.xlsx
- Wood Products
 - o BeidlerWoodProducts_6_29_2012.xlsx

Submitted 16 July 2012

- BeidlerBaselineHarvestSchedule_6_29_2012.xlsx

Submitted 19 July 2012

- Beidler PDD_7-18_rdl_ESI.docx
- 009-Beidler Round 1 NCRs Final_Blue Source notes.xlsx
- Hydro
 - o hydro-clip.shx
 - o hydro_buffer.dbf
 - o hydro_buffer.prj
 - o hydro_buffer.sbn
 - o hydro_buffer.sbx
 - o hydro_buffer.shp
 - o hydro_buffer.shp.xml
 - o hydro_buffer.shx
 - o hydro-clip.dbf
 - o hydro-clip.prj
 - o hydro-clip.sbn
 - o hydro-clip.sbx
 - o hydro-clip.shp

Submitted 26 July 2012

- BeidlerVerificationPlot_7_26_2012.xlsx

Submitted 04 August 2012

- Beidler PDD_08_03_ESI_rdl.docx
- 009-Beidler Round 2 NCRs_8-3_ESI.xlsx
- Beidler Nearby Harvest Example_8-3_ESI.docx

Submitted 20 August 2012

- Beidler Site Index Sampling Methodology_8_14.docx

Submitted 23 August 2012

- SiteIndexCurvesForSE.pdf
- Beidler Site Index Sampling Methodology_8_23.docx

Submitted 24 August 2012

- Beidler Site Index Sampling Methodology_8_24.docx

Submitted 28 August 2012

- BeidlerWoodProducts_8_28_2012.xlsx

Submitted 27 September 2012

- Call with ESI 9_27.docx

Submitted 02 October 2012

- BeidlerSiteIndexSamplingDataMap.pdf
- Beidler Site Index Analysis Methodology_10_2.docx
- Beidler Site Index_10_2.xlsx

Submitted 08 October 2012

- Beidler Site Index_10_2.xlsx
- Beidler Site Index Analysis Methodology_10_2.docx
- Beidler Site Index Sampling Methodology_8_23.docx
- Beidler Site Index Sampling Methodology_8_24.docx
- Beidler Site Index Sampling Methodology_8_27.docx
- Beidler Site Index Sampling Methodology_8_28.docx
- SiteIndexCurvesForSE.pdf
- BeidlerSiteIndexSamplingDataMap.pdf
- FVS_sn_Overview.pdf
- Beidler Site Index Plots
 - o BeidlerSiteIndexPlots.shx
 - o BeidlerSiteIndexPlots.dbf
 - o BeidlerSiteIndexPlots.prj
 - o BeidlerSiteIndexPlots.sbn
 - o BeidlerSiteIndexPlots.sbx
 - o BeidlerSiteIndexPlots.shp
 - o BeidlerSiteIndexPlots.shp.ed.lock
 - o BeidlerSiteIndexPlots.shp.OWNER-PC.4660.4656.sr.lock
 - o BeidlerSiteIndexPlots.shp.xml
- NRCS Soils Reports
 - o Berkeley Forestland Productivity.pdf
 - o Dorchester Forestland Productivity.pdf
 - o Orangeburg Forestland Productivity.pdf



Submitted 29 October 2012

- Beidler_DRAFT_PDD_10_28_12_ESI.docx
- 009-Beidler Round 3 DRAFT NCRs_10_25_12.xlsx

Submitted 5 November 2012

- BeidlerElmExample_11_2_2012.xlsx
- 009-Beidler Round 3 DRAFT NCRs_11_4_12.xlsx
- AFM Support Letter - Beidler Carbon Project.doc
- Beidler_DRAFT_PDD_11_4_12_ESI.docx
- BeidlerDeedAcreage_9_18.xlsx

Submitted 9 November 2012

- Beidler_DRAFT_PDD_11_9_12_ESI.docx
- AFM Support Letter - Beidler Carbon Project_11_9_12.doc

Submitted 12 November 2012

- Beidler_DRAFT_PDD_11_12_12_ESI.docx

Submitted 28 November 2012

- BeidlerWoodProducts_11_28_12.xlsx
- Beidler_DRAFT_PDD_11_28_12_ESI.docx
- Beidler_FINAL_PDD_11_28_12_ESI.docx
- Beidler_Project_Table_11_28_12.xlsx
- Beidler-Forest-Project-Calculation-Worksheet_11_28_2012.xlsx
- BeidlerBaselineHarvestSchedule_11_28_12.xlsx
- Beidler_Baseline_Table_11_28_12.xlsx
- Beidler_C2_Baseline Calcs_11_27_12.xlsx
- Beidler_C3_Baseline Calcs_11_28_12.xlsx
- Beidler_Baseline_Table_11_27_2012_b.xlsx
- Beidler_Baseline_Table_10_25_2012.xlsx
- Beidler_Baseline_Table_11_27_12.xlsx
- Beidler_Baseline_Table_11_27_2012.xlsx
- Beidler_Baseline_Table_11_27_2012_71_76_hvst15.xlsx
- Beidler_Baseline_Table_11_27_2012_71_76_hvst18.xlsx
- Beidler_Baseline_Table_11_27_2012_71_76_hvst20.xlsx
- Beidler_Baseline_Table_11_27_2012_71_76_hvst21.xlsx

- Beidler_Baseline_Table_11_27_2012_71_76_hvst22.xlsx
- Beidler_Baseline_Table_11_27_2012_71_76_hvst215.xlsx
- Old_Harvest_Schedule\BeidlerBaselineHarvestSchedule_10_25_2012.xlsx
- Old_Harvest_Schedule\BeidlerBaselineHarvestSchedule_11_27_12.xlsx
- Beidler Financial Modeling Report_11_28.xlsx
- USFS_Road_Cost_Analysis.pdf
- AFM Support Letter - Beidler Carbon Project.doc
- Econ_Analysis_Cons_Forestry_SC.pdf
- Economic_Anal_HW.pdf
- SC_TimberReport_2ndQtr2012.pdf
- South Carolina TMS 2Q2012.pdf
- Treelist_Cmp2.xlsx
- Baseline_Cmp2_1_20_Low1.xls
- Baseline_Cmp2_21_38_87_Low1.xls
- Baseline_Cmp2_822_LowNOCUT.xls
- BaselineCmp2_1_20_60SMZ_Low1.bat
- BaselineCmp2_1_20_60SMZ_Low1.chp
- BaselineCmp2_1_20_60SMZ_Low1.key
- BaselineCmp2_1_20_60SMZ_Low1.out
- BaselineCmp2_1_20_60SMZ_Low1.sum
- BaselineCmp2_1_20_60SMZ_Low1.tre
- BaselineCmp2_1_20_60SMZ_Low1.trl
- BaselineCmp2_21_38_87_60SMZ.key
- BaselineCmp2_21_38_87_60SMZ_Low.bat
- BaselineCmp2_21_38_87_60SMZ_Low.chp
- BaselineCmp2_21_38_87_60SMZ_Low.key
- BaselineCmp2_21_38_87_60SMZ_Low.out
- BaselineCmp2_21_38_87_60SMZ_Low.sum
- BaselineCmp2_21_38_87_60SMZ_Low.tre
- BaselineCmp2_21_38_87_60SMZ_Low.trl
- BaselineCmp2_21_38_87_60SMZ_Low1.bat
- BaselineCmp2_21_38_87_60SMZ_Low1.chp
- BaselineCmp2_21_38_87_60SMZ_Low1.key
- BaselineCmp2_21_38_87_60SMZ_Low1.out
- BaselineCmp2_21_38_87_60SMZ_Low1.sum



- BaselineCmp2_21_38_87_60SMZ_Low1.tr e
- BaselineCmp2_21_38_87_60SMZ_Low1.trl
- BaselineCmp2_822_60SMZ_LowNOCUT.b at
- BaselineCmp2_822_60SMZ_LowNOCUT.c hp
- BaselineCmp2_822_60SMZ_LowNOCUT.k ey
- BaselineCmp2_822_60SMZ_LowNOCUT.o ut
- BaselineCmp2_822_60SMZ_LowNOCUT.s um
- BaselineCmp2_822_60SMZ_LowNOCUT.t re
- BaselineCmp2_822_60SMZ_LowNOCUT.t rl
- BaselineCmp2_Low.mdb
- Plot_Cmp2.xlsx
- Stand_Cmp2.xlsx
- Suppose.loc
- BaselineCmp3_low.mdb
- Baseline_Cmp3_39_70_60SMZ_Low1.bat
- Baseline_Cmp3_39_70_60SMZ_Low1.chp
- Baseline_Cmp3_39_70_60SMZ_Low1.key
- Baseline_Cmp3_39_70_60SMZ_Low1.out
- Baseline_Cmp3_39_70_60SMZ_Low1.sum
- Baseline_Cmp3_39_70_60SMZ_Low1.tre
- Baseline_Cmp3_39_70_60SMZ_Low1.trl
- Baseline_Cmp3_39_70_Low1.xls
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.bat
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.chp
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.key
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.out
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.sum
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.tre
- Baseline_Cmp3_71_76_60SMZ_low_27hvs t22dbh.trl
- Baseline_Cmp3_71_76_low_27Hvst22dbh. xls
- Baseline_Cmp3_74_79_60SMZ_Low1.bat
- Baseline_Cmp3_74_79_60SMZ_Low1.chp
- Baseline_Cmp3_74_79_60SMZ_Low1.key
- Baseline_Cmp3_74_79_60SMZ_Low1.out
- Baseline_Cmp3_74_79_60SMZ_Low1.sum
- Baseline_Cmp3_74_79_60SMZ_Low1.tre
- Baseline_Cmp3_74_79_60SMZ_Low1.trl
- Baseline_Cmp3_74_79_60SMZ_low1.xls
- Baseline_Cmp3_80_89_60SMZlow1.bat
- Baseline_Cmp3_80_89_60SMZlow1.chp
- Baseline_Cmp3_80_89_60SMZlow1.key
- Baseline_Cmp3_80_89_60SMZlow1.out
- Baseline_Cmp3_80_89_60SMZlow1.sum
- Baseline_Cmp3_80_89_60SMZlow1.tre
- Baseline_Cmp3_80_89_60SMZlow1.trl
- Baseline_Cmp3_80_89_60SMZlow1.xls
- Baseline_Cmp3_823_60SMZ_LowNOCUT. bat
- Baseline_Cmp3_823_60SMZ_LowNOCUT. chp
- Baseline_Cmp3_823_60SMZ_LowNOCUT. key
- Baseline_Cmp3_823_60SMZ_LowNOCUT. out
- Baseline_Cmp3_823_60SMZ_LowNOCUT. sum
- Baseline_Cmp3_823_60SMZ_LowNOCUT. tre
- Baseline_Cmp3_823_60SMZ_LowNOCUT. trl
- Baseline_Cmp3_823lowNOCUT.xls

Submitted 29 November 2012

- Beidler-Forest-Project-Calculation-Worksheet_11_28_2012.xlsx
- Beidler_Baseline_Table_11_28_12.xlsx

Submitted 30 November 2012

- Beidler_FINAL_PDD_11_30_12_ESI.docx
- Beidler_DRAFT_PDD_11_30_12_ESI.docx

Submitted 16 January 2013



- CAR_683_Blue
Source_Beidler_IFM_PDD_Final_Redline.docx
- \CAR_683_Blue
Source_Beidler_IFM_PDD_Final.pdf

Submitted 17 January 2013

- CAR_683_Blue
Source_Beidler_IFM_PDD_Final.pdf
- \Beidler_InventoryCalcs_BA_1_10_13.xlsx
- Beidler_InventoryCalcs_BA_1_10_13_withJPChecks.xlsx
- CAR_683_Blue
Source_Beidler_IFM_PDD_Final.docx

Submitted 4 February 2013

- BiedlerEXTENSION_CAR683.pdf

Submitted 5 February 2013

- CAR_683_Blue
Source_Beidler_IFM_PDD_Final_020413.pdf
- CAR_683_Blue
Source_Beidler_IFM_PDD_Final_020413Redline.docx
- Baseline60YrCmp3_LowSite
- Beidler_Baseline_Table_2_4_13.xlsx
- Beidler_C2_Baseline
Calcs_2_3_13.xlsx
- Beidler_C3_Baseline
Calcs_2_4_13.xlsx

- Beidler_InventoryCalcs_2_4_13.xlsx
- \Beidler_InventoryCalcs_2_4_13_WithJPChecks.xlsx
- \Beidler_Project_Table_2_4_13.xlsx
- BeidlerC_2_ProjectCalcs_2_3_13.xlsx
- BeidlerC_3_ProjectCalcs_2_4_13.xlsx
- Beidler-Forest-Project-Calculation-Worksheet_2_4_2013.xlsx
- BeidlerVerificationPlot_2_4_12.xlsx
- BeidlerWoodProducts_2_4_12.xlsx

Submitted 7 February 2013

- Beidler_Baseline_Table_2_7_13.xls
- Beidler-Forest-Project-Calculation-Worksheet_2_7_2013.xlsx
- CAR_683_BlueSource_Beidler_IFM_PDD_Final_020713.docx
- CAR_683_BlueSource_Beidler_IFM_PDD_Final_020713.pdf
- CAR_683_BlueSource_Beidler_IFM_PDD_Final_020713Redline.docx

Submitted 26 March 2013

- Berkeley County Restrictive Covenant and PIA with stamped cover.pdf
- Dorchester County Restrictive Covenant and PIA signed with cover page.pdf
- Orangeburg County Restrictive Covenant and PIA signed with cover sheet.pdf



APPENDIX B – Stand and Plot Locations

