



**Verification Report under the Aegis of the
California Climate Action Registry**

**Of the
Garcia River Conservation-Based Forest Management
Project**

A Property Owned and Managed by:

The Conservation Fund

Prepared for:

**Evan Smith, Vice-President
The Conservation Fund**

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Reporting Period:

January 1, 2008 to December 31, 2008

Date: March 12, 2009

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1 Summary

This report presents the findings of the verification evaluation of The Conservation Fund's (TCF) Garcia River Forest conservation-based forest management project greenhouse gas emissions data reported to the California Climate Action Registry (CCAR) for reporting year 2008 (January 1 through December 31, 2008). The evaluation was conducted in January and February, 2009. The evaluation follows upon the prior verifications of the 2005 through 2007 emission reductions generated by the Garcia River Forest project (conducted first in 2007 with the second verification occurring in 2008) and was undertaken to assess and review the reported data and confirm whether the compiled data continues to conform to the CCAR Forest Project Protocol v2.1.

Please note that CCAR is in the process of updating the terminology used in their protocols to be in agreement with generally accepted national and international terminology. To date, Registry protocols have used the term "certification" to represent the activity of verifying that GHG emissions data submitted to the Registry has been collected and quantified in accordance with the guidelines put forth in the Registry protocols. The Registry has begun to shift the terminology from "certification" and "certifier" to more widely accepted "verification" and "verifier". In an effort to conform to this shift, this report shall use the term "verification" and "verifier" where previous reports referred to "certification" or "certifier". The terms may be considered to be interchangeable for the purposes of this report.

The evaluation was undertaken using SCS's verification methodology developed for verification of forestry offset projects registered under the CCAR. The standard used for verification is the CCAR's Forest Certification Protocol v2.0 (May 2007).

In the course of the verification evaluation, that is reported herein, the SCS verifiers identified a number of needed clarifications, additional information requests, opportunities for improvement (but no corrective actions). The clarifications and new information requests needed to be, and were, responded to by The Conservation Fund in order for SCS to be able to issue an opinion that the conservation-based forest management project conforms to the CCAR protocols. The verification process and findings are detailed, below.

On the basis of the information provided and the analyses completed, SCS was able to reach a decision on the initial project summary worksheet presented by the project developer and SCS confirms the adequacy of the information provided in the project

description. Further, SCS is able to reach a positive opinion on the claimed emission reductions presented in the forms, reports and supporting documents submitted by TCF onto The Climate Action Reserve's website.

2 Introduction

While verification is not required every year by the CCAR protocol, TCF elected to contract with SCS to perform a verification audit of their Garcia River Forest conservation-based forest management project for the reporting year 2008. Without this verification, TCF would be unable to market and deliver the 2008 emission reductions associated with the Garcia River project. This report covers the verification and subsequent certification of the information provided in the Garcia River Forest Summary Worksheet and the calculation of carbon stocks for the year 2008.

This report presents the findings of the assessment and provides justification for the verification process and the certification opinion. This is the third annual iteration of emission reduction reporting and verification for the Garcia River project.

Reported below are a description of the steps of the evaluation that were undertaken, the findings of the assessment as well as the justification for the verification process and the verification opinion.

3 Objectives

The purposes of this verification evaluation were to review and confirm:

- (continued) entity and project eligibility
- general verification elements submitted via CARROT and The Climate Action Reserve
- (ongoing) forest carbon inventory data collection procedures
- changes, if any, to inventory projections of entity baseline
- changes, if any, to inventory projection of project activity and project baseline
- calculation of carbon stock change, emissions and emissions reductions
- accuracy, completeness, transparency, and freedom of material misstatements of the reported data

conformity of the project developer's analysis and reported data to the CCAR Forest Project Protocols v2.1, dated September, 2007.

4 Scope and Project Description

The scope of this evaluation is the Garcia River conservation-based forest management project, a project first established in 2004 and first reported to the California Climate Registry in 2007. The first iteration of verification reporting to the Registry, which took place in calendar year 2007, covered reporting years¹ 2004-2006; the second iteration of verification reporting, which took place in 2008, covered reporting year 2007. As with the prior two annual iterations, the 2008 reporting year emissions reductions related to the project have been reviewed and verified (i.e., evaluated) according to the CCAR Forest Certification Protocol v2.0.

There have been no changes in the nature of the project since the 2007 reporting year. That is (and from the verification report issued in November, 2008):

“The project is a conservation-based forest management project on land owned by The Conservation Fund in the state of California. The project area constitutes a portion of the TCF-owned forestlands in Northern California; TCF’s Northern California timberlands not associated with the Garcia River Project are incorporated into the Big River and Salmon Creek CCAR Forestry Project that is addressed in a separate verification report. The Garcia River Forest (GRF) project is 24,000 acre forest located in Mendocino, CA and is dominated by redwood, Douglas-fir and tanoak and is generally considered to have Class III growing conditions. The property has been extensively high-graded in the past and what remains is on average 45-60 year old stands of pole and sawtimber with unnaturally high concentrations of tanoak.

“Under the project management, there are two harvest management regimes – one each for the reserve and non-reserve portions of the property. The reserve stands account for approximately 35% of the total forest acreage (8046 acres). The reserve area may be harvested but only for the explicit goal of speeding a given location’s return to late seral (i.e., climax) conditions. In most cases, this will mean little or no harvest in reserve areas. If harvesting were to occur in the reserve areas, successive target residual basal area retentions will be 200, 240, and 280 ft² over time with no more than three entries with a minimum of at least 20 years between harvest entries.

“The remaining portion of the GRF will be managed using an uneven-age selection silviculture regime. For the “project activity” as distinct from the “baseline activity,” slightly larger riparian buffers are used to better reflect The Conservation Fund’s management objectives. These objectives include restoring and conserving biodiversity and increasing the carbon storage in the forest. In some non-reserve areas of GRF, harvest prescriptions will include a hardwood competition reduction treatment that is designed to reduce the prevalence of tanoak trees. This treatment will be applied to stands that, at the time of the first

¹ An equivalent term to “reporting year” is “emission year” and, in future reports, SCS will be employing the term “emission year.”

scheduled harvest, have more than 50 ft² basal area of tanoak per acre. This harvest treatment will occur only in stands with more than 10 mbf per acre in 2006 and will thin based on spacing to a target basal area of 170 ft². Reentry into these stands will occur every 20 years. With each entry the target basal area retention will increase until the ultimate goal of 270 ft² per acre is achieved. All of these harvest treatments are incorporated into the GRF carbon calculations.”

Pursuant to the CCAR Forest Project Protocol, the project developers have characterized the project baseline as the woody biomass carbon levels that would result from a timber harvesting regime that could be undertaken on the project area while maintaining full conformity with California Forest Practice Regulations, specifically:

- the Maximum Sustained Production “Option C” rules
- the Coast District rules.

At the time of baseline initiation, there were no mandatory land use statutes or regulation that would require the conservation-based forest management to be implemented as the project activity. That is, the Garcia River project is a voluntary/discretionary commitment on the part of The Conservation Fund.

Changes to the GRF Carbon Pools Since the 2008 Audit

There was no timber harvesting activity on the Garcia River Forest project area since the prior year’s verification evaluation. However, subsequent to the prior reporting year project submittals to CCAR (that formed the basis of the calendar year 2008 verification reporting), additional inventory plots were established and measured on the Garcia River project area. These inventory plots were all located in the area impacted by the Jack Fire, a lightning-caused wildfire that burned over a two-week period in June, 2008. The Jack Fire covered approximately 700 acres; this fire was predominantly a low-intensity ground fire with occasion spotting into the canopy; fire kill of standing trees over 3 inches, diameter at breast height (DBH) was very minor; the greatest impact of the fire was on ground vegetation including seedlings and saplings as well as upon down dead wood.

Aside from changes associated with the Jack Fire, the remainder of the “growing stock” on GRF experienced one year of volume/carbon growth and the dead down and standing stocks experienced one year of decay, both of which are accounted for in the project modeling as well as the “measured stocks” discussed below.

Updates to the Forest Inventory

Recognizing that TCF has submitted Garcia River Forest project emission reduction reports and assertions to CCAR for the third consecutive year, the forest inventory that has provided the empirical basis for the 100-year baseline and project activity projections has been the subject of verification oversight in two prior years. The inventory system is a compilation of several prior inventory systems that have been designed and implemented on the land area that is now known as the Garcia River Forest.

From the 2008 verification report:

“The Garcia River Forest has been inventoried several times by different groups, although the data collected and the sampling procedures used were not the same across these different inventories. Notably, additional inventory plots were established and measured since the 2007 CCAR verification activities undertaken by SGS/SCS. These additional inventory plots have resulted in an improved standard error, as is discussed later in this report as it relates to confidence deductions.

“A system of 56 permanent plots were established by Coastal Forest Lands in 1994-5, using 1/5 acre fixed radius plots with all conifers greater than 10” dbh tagged and a 1/250th acre understory vegetation plot.

“As part of the CCAR project development, The Conservation Fund commissioned the forestry consulting firm, Terra Verde, to conduct a stratified inventory was conducted by Terra Verde. Twenty-three stands covering 5125 acres were randomly selected for sampling based on their size and type. Within stands sampled there was approximately 1 plot for every 5 acres (most plots were on a 6 chain by 8 chain grid), unless the stand was less than 30 acres. Each plot center was marked with a numbered plastic stake and identified with flagging. The cruisers recorded GPS locations for most of the plots. Despite this, the SGS/SCS auditors were able to locate all plots randomly selected for on-site verification during both the 2007 and 2008 field work.”

To reflect the changes to the carbon pools on Garcia, TCF elected to layout a series of new inventory plots within the fire area using a 20 chain by 20 chain grid pattern. Along north/south bearings, the plots were structured with a master plot and three satellite plots. All plot centers were monumented with a bamboo stake. In total, there were 64 new plots established and measured in 2008. The inventory plots were measured (“cruised”) by Scott Kelly (TCF North Coast forester) and Madison Thomson, (TCF North Coast Forest Technician).

5 Verification Team

Dr. Robert J. Hrubes, Lead Assessor: Dr. Hrubes is Senior Vice-President of Scientific Certification Systems. He is a Registered Professional Forester (RPF #2228) and forest economist with 30 years of professional experience in both public and private forest management issues. Dr. Hrubes worked in collaboration with SCS to develop the programmatic protocol that guide all SCS Forest Conservation Program evaluations.

Kyle Meister, Assessor: Mr. Meister is a Certification Forester with Scientific Certification Systems. He holds an undergraduate degree in forestry from the University of Michigan and a Master of Forestry degree at the Yale School of Forestry and Environmental Studies. He has experience as an environmental educator and natural resource consultant in the U.S., Mexico, Ecuador, Costa Rica, and Columbia.

Christopher Hipkin, Technical Reviewer: Mr. Hipkin is a California registered professional forester (#2300) with over 30 years of professional experience. He has qualified as a lead auditor for conducting GHG audits for SCS as well as other third-party verification organizations and he has served as the lead forestry expert on two CCAR forestry sector audits.

6 Itinerary

Prior to the field visit, the auditors reviewed GRF project documents provided by TCF to SCS (e.g., project records, CCAR submittals, supporting reports).

The auditors conducted an on-site audit of the project area² on February 12, 2008. The audit entailed the following activities:

Opening meeting held at The Conservation Fund's North Coast field office in Caspar, CA. In attendance were:

- Robert Hrubes, SCS, Lead Verifier
- Kyle Meister, SCS, Audit Team Member
- Christie Pollet-Young, SCS, GHG Program Associate, auditor trainee
- Christopher Hipkin, Professional Forester, observer, SCS trainee
- Evan Smith, The Conservation Fund
- Jordan Golinkoff, The Conservation Fund

² The audit agenda for the field visit is found as an Appendix to this report.

- Matt Hurteau, Northern Arizona University, ANSI lead auditor³

The purposes of the office discussions were:

- To allow TCF to present an overview of the project and the suite of reporting and supporting documents generated for reporting year 2008
- Allow opportunities for the SCS auditors to confirm key informational components and analytical procedures employed by TCF to arrive at their assertion of tons of CO₂e emission reductions from the GRF project area for reporting year 2008
- Finalize a field itinerary and randomly select inventory plots to re-measure

Field trip to the GRF project site (approximately 6 hours in duration)

- Reconnaissance of selected portions of the project area, conducted by driving ridge top roads and visually surveying forest conditions
- Focused examination of the Jack Fire burn area to assess changes in stand conditions and carbon pools
- Re-measure of four randomly selected 2008 inventory plots (out of 64 new plots) located within the burn area.

Closing meeting in which preliminary findings and “next steps” were discussed.

In addition to the field visit, the SCS auditors conducted a detailed review of the project reporting and support documents. The auditors also completed a quantitative analysis of the inventory data collected during the re-measurement of four randomly selected plots established in 2008 in the Jack Fire burn area in order to ascertain if the project continues to meet the minimum quality standard set forth in the CCAR Forest Certification Protocol. As well, the auditors reviewed the statistical formulae and calculations made by TCF in order to quantify the accuracy of their updated forest inventory. All of these quantitative review activities are discussed in detail elsewhere in this verification report.

7 Verification Process Summary

The verification process is a four-step process:

Step 1

³ As part of SCS’ participation in a pilot accreditation program for verification bodies seeking accreditation against ISO 14065, this verification audit was witnessed by a lead auditor employed by the American National Standards Institute (ANSI).

In the first step, SCS received and reviewed the Project Summary Worksheet and supporting documentation to assess initial conformance with the data requirements of the CCAR Forest Project Protocol. Key factors that impact the reported emissions reductions were identified and an Audit Plan was created to focus on the critical elements presenting potential risk for errors in reported data. These elements included inventory data collection and handling, assumptions underlying the project and baseline characterizations, application of the growth model, and compliance with the California Forest Practice Rules.

Step 2

A site visit was undertaken to review project records and CCAR submittals, discuss methodologies used to calculate carbon pools and growth models, visit random portions of the ownership, and to conduct a field review of the sampling methodology for the forest inventory. For this project, four inventory plots were randomly selected and re-measured by the SCS auditors.

Step 3

The third step of the verification process focuses on the quantitative analyses undertaken by the project developer to convert the raw inventory data into estimates of standing and lying volume of woody biomass and then to translate volumetric measures into estimated tons of carbon, for both the baseline and the project activity. Verification activities include:

- Generating per acre estimates of standing and lying woody volume from the re-measured plots in order to assess the accuracy of the base year inventory and carbon stocks for the project area
- Reviewing the projections of carbon over the 100-year projection period for both the baseline and project activity in order to determine if a finding of adequacy (of the project developer's projections) is warranted or, alternatively, if more analysis is required

The verification activities in this step of the process entail iterative exchanges between the auditors and the project developer and their consultants in which additional information is requested and examined.

Step 4

The last step in the verification process is final review of the submitted data, completion of the certification activities log, drafting of the verification opinion and supporting report.

A draft certification opinion and report is completed based on the findings of the verification assessment. The draft report is then presented to an internal SCS Technical Reviewer who determines whether the opinion given is justified given the

evidence presented. If the Technical Reviewer's response is positive, a final opinion and report is issued and filed with CCAR.

8 Results

The Conservation Fund presented a project description for the Garcia River Forest conservation-based forest management project in order to register the associated data and emission reduction assertion with the California Climate Action Registry. Based on the data, SCS is able to reach a conclusion on the data quality and issue a verification opinion to accompany this report. A more detailed discussion of the findings and conclusions follow, below.

8.1 Document Review

As would be expected since this is the third annual iteration of emission reduction reporting, the description of the Garcia River Forest conservation-based forest management project and baseline presented in the initial Project Summary Worksheet was reviewed by the SCS auditors and found to provide adequate documentation to proceed with the site visit. As a result of the document review, the following issues were identified:

- Additional information on the calculation of the accuracy of the inventory estimates is needed
- Minor typographical errors in the *2008 Forest Carbon Audit Summary Document* were noted

8.2 Site Visit

The February 12, 2009 site visit was used to review project records, CCAR submittals, discuss and review methods used by TCF to calculate carbon pools, review application of growth models, visit random portions of the ownership, and to conduct a field review of the TCF sampling methodology. During the site visit, four inventory plots (one master plot and its three satellite plots; the master plot was selected using a random number generator) were re-measured by the audit team. The collected data was used to confirm if proper field measurement techniques were used by the TCF foresters. Stand typing and general descriptions of the forested area are also confirmed as part of the general reconnaissance of the Jack Fire burn area and surrounding area as well as when the auditors hiked through the fire area to relocate and re-measure selected inventory plots. The following issues were raised during or as a result of the site visit:

- Protocols on measuring and accounting for carbon in stumps is not sufficiently clear to assure consistent implementation by field personnel

- Generally, field measurement methods common in the forestry profession for general forest management purposes may not be sufficient for verified carbon claims where quantitative “minimum quality standards” must be met and confirmed by a verifier that is not employing the normal cruise techniques (e.g., extensive reliance on ocular estimates rather than precise measurements)
- Use of degradable bamboo stakes for monumenting inventory plot centers.

8.3 Eligibility

There are no changes regarding the project’s CCAR eligibility since the prior verification evaluation. As confirmed during the prior (2008) verification evaluation, the Garcia River Forest project is in compliance with the CCAR project eligibility requirements set forth in Part II, Section E of the CCAR Forest Project Protocol. That is, the project area is within the State of California, uses native species, and is secured by a perpetual conservation easement. The Garcia River Forest project has been defined as a conservation-based forest management project that is intended to create additional carbon stocks in the forested area through modifications of harvest and regeneration practices, relative to baseline practices, as defined in the CCAR Forest Project Protocol.

8.4 Long-Term Commitments

There are no changes regarding this CCAR requirement since the prior verification evaluation. As confirmed during the prior (2008) verification evaluation, the purpose of the perpetual conservation easement requirement, according the CCAR protocol, is to act as a legal guarantee that a project’s existing and additional carbon stocks can remain protected in perpetuity by requiring forest practices that protect and encourage additional carbon stocks. Section 4 (b and c) of the Garcia River Forest conservation easement states that all forest management be undertaken to maintain and restore the complex native coastal redwood ecosystem.

8.5 Included Carbon Pools

The project assesses above and below ground living biomass, standing dead biomass, lying dead biomass carbon pools. There are no optional carbon pools being reported for this project.

8.6 Leakage Assessment

Activity-shifting leakage for the Garcia River Forest Project is highly unlikely given the fact that the forest entity only includes this project and the CCAR Forest Project in the Big River and Salmon Creek Forest Tracts. Harvest information for these two projects is transparent and any potential activity-shifting leakage would be identified. Additionally, TCF has attested that any activity shifting leakage would be quickly remedied.

The assessment team concurs with TCF in their assertion that the potential for market-shifting leakage is minimal. The annual harvest volume of Big River Salmon Creek Forest Project is less than one percent of the annual harvest volume for the county. The harvest reduction from the project would not impact harvest volumes in Mendocino County because supply and price are highly unrelated in the area. Supply, in terms of timber harvest, is governed by more than price. It is constrained by over a dozen sets of state and federal regulations, requires 6-12 months of planning, and is subject to an inconsistent supply of contractors. Because of these pressures and constraints, Mendocino log markets can be characterized as highly inelastic; prices do not increase when supply decreases and supply does not increase when prices increase.

8.7 Annual Report Signed Attestation

The project developer has submitted project and entity Biological Emissions/Carbon Stock Annual Reports for the reporting year 2008.

8.8 Additional Observations

Verification of TCF's Carbon Calculations⁴

As with the prior two verification assessments, the SCS auditors devoted a portion of this verification assessment to a review of the manner and propriety by which TCF collected raw inventory data for the three mandatory carbon pools and converted that data into carbon estimates.

To meet the Registry's minimum quality standard, the verifier must randomly select a subset of the project developer's inventory plots, re-measure them, and determine if the verifier's measurements come within +/-15% of the project developer's measurements. To ascertain whether or not the GRF project conforms with this quality standard, the SCS auditors randomly selected one master and three associated satellite inventory plots (all three carbon pool

⁴ Note: The following Excel files accompany this section and can be found in the Appendix to this report: "Garcia River Plots" and "TCF_GRF_NIR_MCplot175_stand269_2_25_09_KKM_Review"

measurements) for re-measurement; all were new plots established in 2008 by TCF within the Jack Fire burn area. These plots were re-measured on February 12, 2009 using the same inventory protocols that were developed by TFC. The tools used by the SCS auditors to complete the re-measurements were:

- Compasses, adjusted for the declination of Mendocino County, California
- GPS (Garmin Map60Csx)
- 20 BAF prisms (for the variable radius live tree plots)
- Relascope (provided by TCF)
- Diameter tapes for measuring diameter at breast height (DBH)
- Field tapes (150') for measuring fixed radius plot boundaries (down wood) as well as for determining distances from plot centers to trees that were questionably “in” or “out” using the prism; the measured distances were used in a limiting distance calculation to determine whether the marginal trees should be counted in or out.

The re-measurements were compiled and compared to TCF’s measurements for the same plots using a spreadsheet. Biomass and mass of carbon for each set of measurements were calculated using the algorithms provided in the CCAR Forest Project Protocols. From these data the percent difference between the two sets of measurements was calculated.

Step 1: Evaluating the Biomass Estimates from the Field Dataset:

The rationale behind this step is in seeing how much the biomass estimates derived from the project developer’s field measurements differ from the auditor’s re-measurements and to identify areas in the data with the highest risk of error (see Appendix 2). The method we employed involved the following steps:

1. Calculate the average diameter of the counted trees (“in trees”), including downed dead (DD) and snags (SN), for the auditor plots and the project plots.
2. Calculate percent difference between the two datasets.
3. Calculate the average length of the DD wood pieces (e.g., fallen trees, cull logs) for the auditor plots and the project plots.
4. Calculate the percent difference between the two datasets.
5. Select plot with greatest percent difference between the auditor plots and project plots for the verification of carbon calculations.

Step 2: Verifying Carbon Ton Calculations:

SCS examined the client dataset for MC175 to verify that the correct formulae were used in calculating carbon. For live trees, the equations from the CCAR Forest Project Protocol Table 2.1 were used to calculate Mg of carbon (see Appendix 2). The methodology for calculating carbon in dead trees comes

from “Methods for Measuring and Monitoring Forestry Carbon Projects in California” (Winrock International 2004). For both lying deadwood and standing deadwood pools, the same equations were used:

1. $\text{Volume(M}^3\text{)} = \text{PI} * ((\text{inches DBH} / (144 * 2))^2 * \text{ht} / 35.3146667$
2. $\text{Mg per tree} = (\text{Volume(M}^3\text{)} * \text{decay density factor})/2$

For MC 175, the percent difference of total carbon between the project developer and auditor datasets is 0.92%. Because this difference is less than 15% for total forest carbon, the Garcia River Forest Project meets CCARs “minimum quality standard.” In accordance with the 2007 and 2008 verification assessments (for reporting years 2004 through 2007), SCS concludes that TCF’s total carbon calculations for reporting year 2008 meet the CCAR precision requirements.

Assessment of the Statistical Confidence of the Carbon Stock Estimates

As is stated on page 2 of *2008 Forest Carbon Audit Summary Document, February 2009, The Conservation Fund*⁵, TCF have calculated and reported that with the 2008 inventory updates (incorporating 64 additional plots and dropping out plots older than 10 years) the updated sampling error of the mean estimate of carbon tons per acre, with inclusion of dead biomass, is +/- 3.58% at the 90% confidence level. Additional information was requested by SCS and received. The additional documentary information⁶ confirmed that TCF used published statistical equations (Border and Shriver, 1996) and that the equations were properly applied. This same method for calculation the accuracy of the stratified sample design was employed by TCF in prior years and had been reviewed by SCS in prior verification assessments. As with prior years, SCS was satisfied that TCF employed appropriate published methods in determining the accuracy of their estimates.

Since the calculated accuracy of the GRF inventory, updated in 2008, falls within the 0 to 5% band of Table 9.1 of the CCAR Forest Project Protocol, no confidence deductions to the claimed CO₂-e tons of emission reductions is required.

8.9 Confirmation of Data Verified

⁵ This document was conveyed to SCS prior to the February 12th audit and now resides in the GRF project file at the SCS offices in Point Richmond, CA.

⁶ *The Conservation Fund, Inventory Accuracy Assessment for CCAR* as well as a spreadsheet in which the published formula was used to calculate the standard error as a percent of the mean, both retained in the GRF project file.



SCS confirms the data regarding project eligibility, inventory procedures, baseline and project characterization, and methods of calculating carbon stock change, emissions and emission reductions for the Garcia River Forest conservation-based forest management project.

The following data was verified:

Reporting Year 2008: **227,947 t CO₂e** emissions reductions.

These stated tons of CO₂e emissions reductions must be confirmed by SCS to be consistent with the reporter's CCAR online posting.

It should be noted that the emissions reductions increased significantly from 2007 to 2008 due to a number of factors. The first factor is that while a timber harvest was modeled for 2008, TCF elected not to harvest. This accounts for a large portion of the increased reductions. The second factor is that a post-fire inventory revealed that measured carbon stocks were greater than modeled carbon stocks. Moreover, this inventory revealed that growth was greater than had been modeled for the previous 7 year period. The final factor is that the baseline dropped from 2007 to 2008 while the project line rose. Given the combination of these four factors, the emissions reductions increased in Garcia River during this reporting period.

9 Conclusion on Data Quality and Decision on Materiality

The project developer has supplied all the evidence requested in order to enable SCS to arrive at an opinion on the accuracy of the calculated and claimed emission reductions. All issues identified during the verification were resolved in conformance with CCAR forest project standards. The information presented in the final version of the Project Summary Worksheet is considered to comply with the requirements described in the CCAR Forest Project Protocol v2.1. The data is considered accurate, complete, transparent, and free of material misstatements.

10 Verification Recommendation

The verification Lead Assessor recommends the SCS issue a verification and certification opinion.

Name and Address of Participant	The Conservation Fund 14951 "A" Caspar Road, Box 50 Caspar, CA 95420
Scope of Certification	The scope of this evaluation covers the verification of the Garcia River

	conservation-based forest management project according to the CCAR Forest Project Protocol v2.1.
Emission Reductions	2008: 227,947 t CO₂e emission reductions
Protocol Used	California Climate Action Registry's Forest Project Protocol v2.1, September 2007.
Certification opinion with regard to data quality and materiality	The data presented in the project summary worksheet is considered accurate, complete, transparent, and free of material misstatements
Applicable years	2008
Dated and signed on behalf of the verification body by authorized signatory	 03/03/09

11 CRT Amendment *(amended 15 January, 2014)*

This amendment documents the retroactive application of adjustments to CRT's issued under the Climate Action Reserve, as requested by the California Air Resources Board (ARB). The effect of these adjustments does not affect the cumulative CRT's listed on the Reserve website, but rather results in a reallocation of CRT's across emission years 2005-2009. The information below is a breakdown of how emission reductions (tCO₂e) should be allocated to vintages based on changes to the project documents and not a re-verification of such⁷. Verification of the following items occurred in the emission years in which the changes were implemented.

The adjustment to the CRT's is a function of a change in the calculation of deadwood across the project area. Prior to 2009, GRF used a non-stratified sampling design to estimate deadwood pools across the project area. In response to requests by the audit team, TCF began using a stratified design to estimate the deadwood pools for the project area in 2009. SCS was able to confirm that the use of a stratified sampling design is an appropriate method for estimating the carbon stocks stored in deadwood in the project area and that the resulting changes to the annual CRT's have been adequately justified. The result of the corrected project level deadwood calculations requires a negative adjustment to emission years 2005, 2006, and 2009 and a positive adjustment to emission year 2007 and 2008 in the same amount. The sum of all of the adjustments equals 0.

SCS was provided with and reviewed the amended project documents (i.e., monitoring reports, annual stock reports, and annual entity reports). Based on this evidence provided by TCF and the guidance received from the ARB, SCS was able to confirm that the CRT adjustments for the deadwood pools for GRF have been properly allocated in the project documentation and that the resulting values are consistent with the values presented during verification. The final GRF CRT's for emission year 2008 should be reported as 238,814 tCO₂e.

⁷ The amendment to this verification report was performed on 15 January, 2014 and follows the guidance from the ARB as described in an email from The Conservation Fund dated 8 January, 2014. Given the time elapsed since the original verification; the original verification team is no longer available and thus the amendment was added by Francis Eaton (Lead Auditor) and reviewed by Larry Wilson (Technical Reviewer).

References:

- /1/ The Garcia River Forest Project Summary Worksheet
- /2/ Garcia River Overview for the California Climate Action Registry Biological Certification Carbon Stock and Flux Certification Methods
- /3/ The Conservation Fund (GRF) Audit Plan
- /4/ Garcia River Forest Conservation Easement
- /5/ Garcia River Forest List of Findings
- /6/ California Climate Action Registry Forest Certification Protocol v2.0, May 2007
- /7/ California Climate Action Registry Forest Project Protocol v2.1, September, 2007

APPENDIX 1:

The Garcia River Forest Conservation Forest Management Project CCAR Verification Audit

**Field Itinerary
February 12, 2009**

Audit Standard:	
California Climate Action Registry	
- General Reporting and Verification Protocols. - Forest Project Protocol and related guidance provided in the Forest Certification Protocol	
Lead Auditor: Robert Hrubes, PhD. RPF #2228, SCS, Senior Vice-President Team member: Kyle Meister, SCS, Certification Forester Observer: Todd Frank, SCS, GHG Program Manager Observer: Christie Pollet-Young, SCS, GHG Program Associate Observer: Chris Hipkin, RPF #2300, Independent Contractor ANSI Lead Auditor: Matt Hurteau, Northern Arizona University	
Audit Objective: Gather information necessary to render a verification opinion on the reported emission reductions from the Garcia River Forest project area for 2008.	

NOTE: THIS ITINERARY IS PRESENTED IN THE SCS STANDARD FORMAT FOR CCAR FOREST PROJECT VERIFICATION PROJECTS. BECAUSE THIS AUDIT IS THE THIRD AUDIT OF THE GRF PROJECT, SEVERAL OF THE AGENDA ITEMS MAY REQUIRE VERY LITTLE TIME AND WILL FOCUS ON ANY CHANGES SINCE THE 2008 AUDIT.

Date	Time	Process, Department or Function
2/12/2009	7:30 AM	Opening meeting: To be held at the Conservation Fund offices in Caspar, CA.
		Introductions
		Review and finalization of Audit Itinerary
		Review and Confirm that there are no changes to Entity and Project Eligibility (Elements 2.1, 2.5 of Protocol) TCF representative to present documentation
		Review General Certification Elements (Element 2.2) TCF representative to provide CARROT information

Date	Time	Process, Department or Function
		Review any Changes (from the prior year) in the Forest Carbon Inventory Documentation (Element 2.4) i. Summary and review of ownership maps ii. Description of general forest conditions iii. Review inventory planning documents iv. Vegetation typing methodology v. Sampling methodology (include any changes in number of plots or methodology) vi. Description of existing stand conditions
		Review any Changes (from the prior year) in Inventory Projections of Entity Baseline (Element 2.3) I. Evaluate Entity Baseline Characterization and assumptions that underlie the characterization A. Review silvicultural prescriptions used for baseline projection B. Review constraints on the application of silvicultural methods such as sensitive areas, riparian zones, sensitive wildlife habitat, etc. C. Compliance with Forest Practice Act and Regulations
		Review any Changes (from the prior year) in Inventory Projection of Project Activity (Element 2.6) I. Evaluate project activity Characterization and assumptions that underlie the characterization A. Review description of management activities that result in additional carbon stocks above the baseline conditions B. Review silvicultural prescriptions used for project projection C. Review constraints of the application of silvicultural methods such as sensitive areas, riparian zones, sensitive wildlife habitat, etc. D. Compliance with Forest Practice Act and Regulations
		Brief discussion on the methodology used to calculate carbon pools and growth models used for the project and baseline projections (Detailed review of carbon pool calculations and model projections will occur after field evaluation) (Element 2.7)
	12:00 pm	Lunch
	12:30 pm to 5:00 PM	Field Audit • Visit random portions of the property to compare mapped areas with actual field conditions. • If applicable, conduct field review of sampling methodology including inventory plot establishment, measurement, and recording methods. • Visit areas that have undergone vegetative disturbance since the 2008 audit (e.g., harvest areas, fire areas, if any)
	5:00 PM to 5:30 PM	Closing meeting, in the field



APPENDIX 2: SUPPORT DOCUMENTS FOR SCS' ASSESSMENT OF TCF'S CARBON CALCULATIONS

Plot measurements

Table 1. Plot MC175

Standing	Species	Client DBH (in)	SCS DBH (in)	Comments	Client Lying	Species	Diam (in)	length (ft)	SCS lying	Species	Diam (in)	length (ft)
1	TO	17	17.2	L	1	RW	40	8	1	DF	6.2	25
2	TO	7	7.1	L	2	RW	30	7	2	RW	8	30
3	TO	11	11.4	L	3	DF	35	6	3	RW	42	9
4	TO	12	12.2	L	4	RW	8	27				
5	TO	7	6.8	L	5	RW	11	25				
6	RW	9	8.8	L	Total		124	73	Total		56.2	64
7	RW	12	12.7	L								
8	TO	9	8.7	L								
9	RW	17	16.7	L								
10	RW	19.7	19.8	L								
Total		120.7	121.4	L								
					Client regen.	Species	0 to 3	4 to 6	SCS regen.	Species	0 to 3	4 to 6
						TO	3			TO	3	
						RW	3			RW	3	
					Total		6		Total		6	

	Percent similarity (%)												
Standing (DBH)	99.4												
Lying (Diam)	45.3												
Lying (length)	87.7												
Regen	100.0												
Average MC175	83.1												

Table 2. Plot 1751

Standing	Species	Client DBH (in)	SCS DBH (in)	Comments		Client Lying	Species	Diam (in)	length (ft)		SCS lying	Species	Diam (in)	length (ft)
1	RW	13	13	L		1	RW	50	10		1	RW	50	10
2	RW	21	21.1	L		2	RW	15	16		2	RW	15	16
3	RW	18	18.4	L		3	RW	50	10		3	RW	50	10
4	RW	42	42.1	L		4	RW	45	10		4	RW	45	10
5	RW	50	40	L		5	RW	30	25		5	RW	30	25
6	TO	11	11.4	L		6	RW	12	12		6	RW	19	12
7	DF	29	30	L		Total		202	83		Total		209	83
8	TO	6	6	L										
9	TO	7	7.3	L										
10	TO	6	6.5	L										
11	TO	7	6.8	L										
12	RW	42	42.6	dead top										
13	RW	50	50.4	LS										



14	RW	18	18.9	L										
15	RW	20	20	L										
16	DF	20	19.9	L		Client regen.	Species	0 to 3	4 to 6		SCS regen.	Species	0 to 3	4 to 6
17	RW	11	11.4	L			TO	3				TO	3	
Total		371	365.8	L			RW	3				RW	3	
						Total		6			Total		6	
	Percent similarity (%)													
Standing (DBH)	98.6													
Lying (Diam)	96.7													
Lying (length)	100.0													
Regen.	100.0													
Average 1751	98.8													



Table 3. Plot 1752

Standing	Species	Client DBH (in)	SCS DBH (in)	Comments	Client Lying	Species	Diam (in)	length (ft)	SCS lying	Species	Diam (in)	length (ft)
1	DF	9	9.8	L?	1	DF	17	22	1	DF	14	22
2	DF	19	18.9	L?	2	DF	30	6	2	DF	30	6
3	TO	7	6.9	SN	3	DF	18	7	3	DF	18	7
4	TO	15	15.7	P	4	DF	9	22	4	DF	9	22
5	RW	17	18.9	L								
6	RW	9	9.4	L	Total		74	57	Total		71	57
7	DF	11	11.7	L?								
8	TO	10	11.1	P								
9	TO	11	11.3	P								
10	DF	38	36	L								
Total		146	149.7									
					Client regen.	Species	0 to 3	4 to 6	SCS regen.	Species	0 to 3	4 to 6
	Percent similarity (%)					TO	3			TO	3	
Standing (DBH)	97.5											
Lying (Diam)	95.9											
Lying (length)	100.0											
Regen.	100.0											
Average 1752	98.4											

Table 4. Plot 1753

Standing	Species	Client DBH (in)	SCS DBH (in)	Comments	Client Lying	Species	Diam (in)	length (ft)	SCS lying	Species	Diam (in)	length (ft)	
1	RW	29	29	SN	1	RW	32	7	1	RW	32	7	
2	DF	13	12.7	L	Total		32	7	Total		32	7	
3	TO	7	6.8	L									
4	RW	34	35.1	L									
5	RW	24	25.2	L									
6	DF	32	32.3	L									
7	DF	45	47	P									
Total		184	188.1										
	Percent similarity (%)												
Standing (DBH)		97.8			Client regen.	Species	0 to 3	4 to 6	SCS regen.	Species	0 to 3	4 to 6	Notes
Lying (Diam)		100.0				TO	3			TO	3		
Lying (length)		100.0				DF	2	2		DF	2	2	All DF regen. now dead, but confirmed
Regen.		100.0			Total		5	2	Total		5	2	
Average 1752		99.5											



Table 5. Percent Difference of Biomass Estimates between the Project and Auditor Datasets for MC175.

	%
Average percent similarity Plot MC175	83.1
Average percent similarity Plot 1751	98.8
Average percent similarity Plot 1752	98.4
Average percent similarity Plot 1753	99.5
Average OVERALL percent similarity	94.9
Average OVERALL percent DIFFERENCE	5.1

Table 6. Carbon Calculations – Plot 1750 (MC 175)

PLO T	SPECIE S	GROU P	DB H	HEIGH T	TREE S	TPA	BA ft2	BAft2 _perA cre	AGC_Mg_inPlot	AGC_Mg_pe rAcre	SCS_AGC_Mg_inPlot	SCS_D BH	2SCS_AGC_Mg _inPlot
1750	RW	..	9.0 0	64.00	1.00	45.27073 86	0.441786 47	20	0.076950909	3.483624501	0.076950909	8.8	0.073141579
1750	RW	SN	30. 00	7.00	1.00	4.074366 48	0	0	0.001095199	0.004462243	0.001095198		
1750	RW	DD	11. 00	25.00	1.00	30.30520 52	0	0	0.00052587	0.015936583	0.000525869		
1750	RW	DD	8.0 0	27.00	1.00	57.29577 86	0	0	0.000300398	0.01721151	0.000300397	8	0.000333775
1750	RW	..	19. 70	95.00	1.00	9.448657 65	2.116702 79	20	0.451697009	4.267930397	0.451696969	19.8	0.456893602
1750	RW	..	17. 00	81.00	1.00	12.68833 85	1.576250 51	20	0.323757085	4.107939495	0.323757085	16.7	0.310992654
1750	RW	..	12. 00	58.00	1.00	25.46479 05	0.785398 18	20	0.147392488	3.753318824	0.147392488	12.2	0.153000626
1750	DF	SN	35. 00	6.00	1.00	2.993412 11	0	0	0.002129068	0.006373178	0.002129066		
1750	TO	..	9.0 0	46.00	1.00	45.27073 86	0.441786 47	20	0.099354032	4.497830418	0.099354032	8.7	0.091331436
1750	TO	..	12. 00	55.00	1.00	25.46479 05	0.785398 18	20	0.202988226	5.169052657	0.202988226	12.2	0.211494396
1750	TO	..	7.0 0	51.00	1.00	74.83530 27	0.267253 55	20	0.053226169	3.98319645	0.053226169	6.8	0.049529063
1750	TO	..	7.0 0	30.00	1.00	74.83530 27	0.267253 55	20	0.053226169	3.98319645	0.053226169	7.1	0.055134613
1750	TO	..	1.5 0	0.00	3.00	0.012271 85	3.681 55395		0.003481514	5.673985248	0.003481514	1.5	0.003481514
1750	TO	..	17. 00	69.00	1.00	12.68833 85	1.576250 51	20	0.482107759	6.117146441	0.482107759	17.2	0.496316967
1750	RW	..	1.5 0	0.00	3.00	0.012271 85	3.681 55395		0.004030285	6.568342446	0.004030285	1.5	0.004030285
1750	RW	SN	40. 00	8.00	1.00	2.291831 14	0	0	0.002225167	0.005099707	0.002225165	42	0.002759900
1750	TO	..	11. 00	52.00	1.00	30.30520 52	0.659952 63	20	0.16353961	4.956101444	0.16353961	11.4	0.178709411



Table 7. Sum of Carbon (Mg) for SCS and Garcia River Plots and Percent Difference Calculation

SUM_SCS_AGC_Mg_inPlot (sum of 2SCS_AGC_Mg_inPlot column in table 6)	SUM_AGC_Mg_inPlot (sum of AGC_Mg_inPlot column in table 6)	Percent difference
2.08714982	2.068026956	0.92