



**Initial Verification of
California Climate Action Registry
Conservation-Based Forest Management Project**

for

**The Conservation Fund
Garcia River Forest Project**

Period:

January 2004 to December 2006

Date: November 23, 2007



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1 Summary

This report presents the findings of an evaluation for The Conservation Fund's Garcia River Forest conservation-based forest management project greenhouse gas (GHG) emissions data reported to the California Climate Action Registry (CCAR). The evaluation was undertaken to assess and review the reported data and confirm whether the compiled data conforms to the CCAR Forest Project Protocol v2.1.

The evaluation was undertaken using SGS/SCS's verification methodology developed for certification of forestry offset projects registered under the CCAR. The standard used for verification was the CCAR's Forest Certification Protocol v2.0.

The evaluation identified a number of clarifications and corrective actions that had to be undertaken by the project developer in order for SGS/SCS to be able to issue an opinion that the conservation-based forest management project conforms to the CCAR protocol. The verification process and findings are detailed in the following report.

SGS/SCS was able to reach a decision on the initial project summary worksheet presented and supports the information provided in the project description.



2 Introduction

SGS/SCS was contracted by representatives of the Garcia River Forest to perform certification of their conservation-based forest management 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 years 2004 to 2006.

This report presents the findings of the assessment and provides justification for the verification process and the certification opinion.

3 Objectives

The purposes of this verification exercise are to review and confirm:

- entity and project eligibility
- general certification elements submitted via CARROT
- inventory projections of entity baseline
- forest carbon inventory documentation
- inventory projection of project activity and project baseline
- calculation of carbon stock change, emissions and emissions reductions
- data reported is accurate, complete, transparent, and free of material misstatement
- data conforms 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 Forest conservation-based forest management project. The emissions reductions related to the project have been confirmed and verified according to the CCAR Forest Certification Protocol v2.0.

The project is a conservation-based forest management project on land owned by The Conservation Fund in the state of California. The project is applied across the entire entity, as defined at the time the project was developed. The Garcia River Forest (GRF) is 24,000 acre forest located in Mendocino, CA and is dominated by redwood, Douglas-fir 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 a high concentration 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 conditions. In most cases, this will mean little or no harvest in reserve areas. These entries will have target residual basal area retentions of 200, 240, and 280 ft² over time with no more than three entries and the re-entry period at least 20 years.

The remaining portion of the GRF will be managed using an uneven age selection regime. For the project management, 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. The selection harvest in some non-reserve areas 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 have more than 50 ft² of tanoak BA in the first rotation of the selection management at the time of entry for the selection harvest. This harvest will start only in stands with more than 10 mbf 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.

The baseline projection of harvesting allowed pursuant to the Maximum Sustained Production "Option C" rules of the California Forest Practice Rules would result in harvesting in all forested stands outside of required buffers. 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.

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.

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.

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 were able to collect GPS locations for most of the plots.



In conclusion, the strata sampled represent a total of 22,583 acres and the stands sampled sum 14,893 acres out of a total of 23,781 acres. That represents 95% of the strata and 63% of the total area sampled. The inventory had an overall carbon sampling accuracy of 9% at the 90% confidence level weighted by the area of each strata.

The baseline and project activity were modeled over a 100-year horizon to quantify GHG emission reductions associated with the project. The existing carbon stocks were projected using the Forest Projection System (FPS) growth model subject to harvesting scenarios defined by the project description and baseline assumptions consistent with the California Forest Practice Rules.

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.

H. Dru Krupinsky, Project Coordinator/Assessor. Dru is the Lead Environmental Auditor for the SGS North America Climate Change Program. He is accredited to act as Lead Assessor having undertaken training by the CCAR for the GRP and Power Utility Protocol; as well as completing training for ISO 14064 parts 1 and 2. Dru is responsible for the delivery of Climate Change Program services in the USA and Canada; and has served as assessor for verifications of a number of CCAR emissions reports, and CCX offset projects in USA, Canada, and South America.

Sterling Griffin, Assessor: Sterling Griffin is a Senior Certification Forester with Scientific Certification Systems (SCS). He is a Registered Professional Forester (RPF #2805) in the State of California with 10 years of professional experience in private and public land forest management. Prior to joining SCS, he was the founder of a private consulting firm in Northern California specializing in sustained yield management, fuel reduction prescriptions, and forest health management.

Irma Lubrecht, Technical Reviewer: Irma Lubrecht holds an engineering degree in Forestry from the Agricultural University Wageningen, the Netherlands. She is a lead assessor and technical reviewer for the Climate Change Programme. Irma has extensive experience in the validation and verification of emission reduction and sequestration projects, especially (biomass) fuel switch, landfill gas and LULUCF



projects. Irma brings international expertise in a wide array of offset projects to the team.

6 Itinerary

The auditors performed a three-day site visit on August 27-29, 2007 for verification of the CCAR project data. The site visit was used to review project records, CCAR submittals, discuss methodologies used to calculate carbon pools, application of growth models, visit random portions of the ownership, and to conduct a field review of the sampling methodology.

A second review of revised data was conducted November 15, 2007. The second review was used to receive a briefing by the project developer on the newly submitted data in response to requests generated during the initial site visit.

7 Verification Process Summary

The verification process is a four-step process.

Step 1

In the first step, SGS/SCS received and reviewed the project summary worksheet 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

The site visit was used to review project records, 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.

Step 3

The second review was used to receive a briefing by the project developer on the newly submitted data in response to requests generated during the initial site visit.

Step 4



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

A draft certification opinion and report is completed based on the findings of the verification. The draft report is then presented to an internal SGS/SCS Technical Reviewer who decides whether the opinion given is justified given the evidence presented. If the Technical Reviewer's response is positive, a final opinion and report is sanctioned.

8 Results

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

8.1 Document Review

The description of the Garcia River forestry project presented in the initial project summary worksheet was reviewed by the 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:

NIR 01: The protocols require that baseline and project activity projections be in compliance with the California Forest Practice Rules "option C" and any other regulatory requirement. In order to confirm compliance with the CA Fish and Game code and the Federal Endangered Species Act, the results of a recent query of the California Natural Diversity Database for the Garcia River forest area shall be provided.

Close out details: A query of CNDDDB was provided. The report indicated that one listed species has been recorded on the Garcia River Forest property. The project developer provided evidence that a "protection/no-cut buffer" was placed around the occurrences. NIR 01 was closed out.

NIR 02: The project developer has not provided a description of the techniques used to determine biomass densities of dead wood carbon pools. A description of the techniques shall be provided and must include the coefficients used to calculate dead wood biomass.

Close out details: The written description of the techniques used to determine dead wood densities along with the coefficients used was provided to the audit team. NIR 02 was closed.

NIR 03: It was observed that initial photo typing used for the stratified inventory had been altered by Terra Verde prior to sampling and entering data into the cruise compiler. The rules used to aggregate the stand types had not been provided. The project developer was asked to provide the crosswalk used to aggregate original labels (OrgLBL) to VegLBLs.

Close out details: The project developer provided the crosswalk and has included this information in the project description. It was determined that the aggregation rules are in alignment with conventional inventory procedures.

NIR 03 was closed.

NIR 04: In order to assess the validity of the inventory estimates and statistical reliability of the carbon estimates for the inventory a request was made to provide a statistical summary for mean basal area, board foot volume, total carbon and standard error of the mean for carbon for each stratum and for the entire inventory. Close out details: The requested information was provided and found to be very useful in assessing the carbon estimates for the project. NIR 04 was closed.

NIR 05: The site index used to run the growth model was not documented in the project description. Growth models are very sensitive to site index and must be closely evaluated. The project developer was asked to provide a table to site index used for modeling purposes. Close out details: The site index used in the growth model was documented in the project description and falls within an acceptable range expected on the site. CAR 05 was closed.

8.2 Site Visit Assessment

The site visit was used to review project records, CCAR submittals, discuss methodologies used to calculate carbon pools, application of growth models, visit random portions of the ownership, and to conduct a field review of the sampling methodology. During the site visit, inventory plots #173, #510, and #509 were remeasured by the audit team. The collected data confirmed proper field measurement techniques were used by the Terra Verde field crew to conduct the field inventory. Stand typing and general descriptions of the forested area were also confirmed. The following issues were raised during the site visit:

CAR 01: The baseline projection did not meet the minimum stocking standards after harvest entries as required under the California Forest Practice

Rules. It was not clear if harvested stands met the stand age requirements for even-aged management. The project developer was asked to provide a baseline harvest schedule that includes harvested stands, number of acres, and stand age. The table must demonstrate compliance to the Forest Practice Rules. Close out details: The requested adjustments were made and the table was provided as requested. The modeling was modified to include a planting to meet minimum stocking standards and an explanation of stand age determination was provided. The project developer has presented a case that the stands are considered “uneven” aged stands and therefore, no stand age can be assigned. An effort was made to age the average codominate in the stand and model a harvest of the stand when those trees reach 60 years old. A discussion with California Department of Forestry staff was conducted to validate this approach and confirm compliance with the Forest Practice Rules. CAR 01 was closed.

CAR 02: It was not clear if the project activity was modeled to meet the Forest Practice Rules for seed tree retention following harvest entries. The project developer was asked to provide a post harvest stand table that would demonstrate compliance the stocking requirements of the Forest Practice Rules. Close out details: Post harvest stand tables were provided to confirm modeling to meet the Forest Practice Rules. CAR 02 was closed.

CAR 03: The number of acres harvested under the baseline characterization did not match the description of acres available for harvest. In addition, no provisions were made for the 50% basal area retention required on unstable areas as identified in the Garcia TMDL Site Specific Management Plan. The project developer was asked to modify the harvest scheduling to reconcile harvestable acres and restricted areas along with inclusion of provisions to comply with the SSMP. A table with acres of buffered areas and non-timbered areas along with total acres available for harvest must be provided. Close out details: The modeling of the baseline was modified to accommodate the SSMP and buffered areas. A table with the affected acres was provided and included in the written documentation. CAR 03 was closed.

CAR 04: The project activity appeared to project stocking levels that were inconsistent with management plan documents. The modeled stands resulted in stocking levels that exceeded the targets described in the Garcia River Management Plan. The effect would be an overestimate of project carbon stocks and emission reductions through time. Therefore, a rational for modeling stands under the project activity to contain stocking volumes greater than the management plan goals was requested. Close out details: The project developer responded by using a more relevant data library for the growth model and provided an explanation of how the management plan goals were developed. The desired future condition contained in the management plan was based on vague industry standards and most likely does not match

The Conservation Fund objectives stated in the conservation easement. It is expected that the desired future condition will be updated in plan revisions and will be in alignment with the modeled parameters. Harvest prescriptions used in the project characterization appear to be in line with management objectives for the Garcia River Forest. CAR 05 was closed.

CAR 06: The protocols require a deduction in the reported emission reductions if the sampling error of the forest inventory is greater than 5% at the 90% confidence interval. The property-wide inventory estimates exceeded the 5% sampling error. A statement of the deductions used based on the level of statistical confidence in the combined required carbon pools shall be provided.

Close out details: A deduction was applied to the reductions based on the sampling error of the inventory. The annual emissions reports reflect this 10% deduction. CAR 06 was closed.

CAR 07: As various revisions and adjustments were made to the overall project due to the CARs, it was requested that the Project Summary Worksheet be updated with formatting to highlight project developers responses and to include a more concise written description of the general forest conditions with the project area.

Close out details: The project developer presented an updated project summary worksheet that incorporated all the updated and revised information. CAR 07 was closed.

8.3 Corrective Action Requests

All corrective action requests have been closed out.

8.4 Eligibility

The project is in compliance with the CCAR project eligibility requirements. The project area is within the State of California, uses native species, and is secured by a perpetual conservation easement. It 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 as defined in the CCAR forest project protocols.

8.5 Long-Term Commitments



The purpose of the conservation easement requirement, according to 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.

8.6 Included Carbon Pools

The project assesses above and below ground living biomass, standing dead biomass, and lying dead biomass carbon pools.

8.7 Annual Reports Signed Attestation

The project developer has submitted project and entity Biological Emissions/Carbon Stock Annual Reports for the reporting years 2004, 2005, and 2006.

8.8 Observations

There are no additional observations to report.

8.9 Confirmation of Data Verified

SGS/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 conservation-based forest management project.

The following data was verified:

Initial carbon stock (2004): 4,334,100 tCO₂e
Year 2005: 77,040 tCO₂e emission reductions
Year 2006: 77,040 tCO₂e emission reductions

Total 2004-2006: 154,078 tCO₂e emission reductions



9 Conclusion on Data Quality and Decision on Materiality

The project developer has supplied all the evidence requested in order to enable SGS/SCS to arrive at an opinion. 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 misstatement.

10 Recommendation

The verification Lead Assessor recommends the SGS/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 verification	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	2004-2006: 154,078 tCO ₂ e 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	2004 to 2006
Dated and signed on behalf of the verification body by authorized signatory	Robert J. Hrubes, PhD.

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

This amendment documents the retroactive application of adjustments to CRTs 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 CRTs listed on the Reserve website, but rather results in a reallocation of CRTs 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 such¹. Verification of the following items occurred in the emission years in which the changes were implemented.

The first adjustment to the CRTs is a function of a change in the calculation of belowground biomass. Prior to 2007 belowground biomass was calculated on a per tree basis, as the guidance provided in the protocol leaves some room for interpretation. In 2007, however, TCF received guidance that the belowground biomass regression equation should be applied at the per hectare level. The resulting corrected project level belowground biomass calculations require a negative adjustment to emission years 2005-2006 and a positive adjustment to emission year 2007 in the same amount

The second adjustment to the CRTs 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 CRTs 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. 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 and the guidance received from the ARB, SCS was able to confirm that the CRT adjustments for both the belowground biomass and the deadwood pools for GRF have been properly allocated and that the resulting values are consistent with the values presented during verification. The final GRF CRTs for emission years 2005-2006 should be reported as follows:

¹ 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).



Year 2005: 69,163 tCO₂e emission reductions

Year 2006: 69,164 tCO₂e emission reductions

Total 2004-2006: 138,327 tCO₂e emission reductions

References:

Key reference documents

/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 CAR/NIR

/6/ California Climate Action Registry Forest Certification Protocol v2.0, May 2007

/7/ California Climate Action Registry Forest Project Protocol v2.1, September, 2007