



ENVIRONMENTAL SERVICES, INC.

Voluntary Carbon Standard New Methodology Element - Second Validation Report

*Methodology for Avoided Mosaic Deforestation of
Tropical Forests – Version 0.69*

28 December 2010

Methodology Developed by:

Wildlife Works Carbon, LLC

Validation Conducted by:

Environmental Services, Inc.

Forestry, Carbon, and GHG Services Division

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Project Number FV10020.00



ANSI ACCREDITED PROGRAM
GREENHOUSE GAS
VALIDATION AND VERIFICATION
0800



Table of Contents

Validation Statement	3
Executive Summary	4
Introduction	5
Contact Information	5
General Description	6
Validation Details	6
Objective	6
Scope.....	6
Criteria	6
Level of Assurance	6
Materiality.....	7
Handling of Records	7
Validation Process	7
Documents Received/Reviewed	8
Meetings/Interviews.....	8
Validation Milestones	9
Validation Findings	10
Findings Summary	10
VCS2007.1 Criteria.....	10
Eligibility Criteria	11
Baseline Approach	11
Additionality	11
Project Boundary	11
Emissions	11
Leakage	11
Quantification of GHG Removals	12
Monitoring	12
Data and Parameters	12
Project-Level Principles.....	12
Global Stakeholder Consultation	12
Validation Results / Conclusions	13
Appendix A –Corrective Action Requests, Clarifications and Resolutions	14



VALIDATION STATEMENT

This validation statement confirms that Environmental Services, Inc. (VCSA Scope 14 - Approved Validator) has evaluated the methodology element documentation by Wildlife Works Carbon, LLC (Methodology Developer) entitled *Methodology for Avoided Mosaic Deforestation of Tropical Forests*, Version 0.69, according to the criteria outlined by the Voluntary Carbon Standard and that this validation statement is consistent with ISO 14064-3:2006 and ISO 14065:2007.

Environmental Services, Inc. confirms all validation activities including objectives, scope and criteria, level of assurance and the methodology adherence to the VCS 2007.1 as documented in the validation report entitled *Voluntary Carbon Standard New Methodology Element - Second Validation Report ~ Methodology for Avoided Mosaic Deforestation of Tropical Forests – Version 0.69* dated 28 December 2010 are complete and concludes without any qualifications or limiting conditions that the methodology element documentation meets the requirements of VCS 2007.1 and the VCS Program Normative Document: Double Approval Process (version 1.1).

Attestation:

Shawn McMahan

Lead Validator (Print Name):

Signature:

28 December 2010

Date:

Submitted to:

Janice McMahan

**Vice President and Forestry, Carbon, and
GHG Services Division Director (Print
Name):**

Signature:

28 December 2010

Date:

VCSA Board
Wildlife Works Carbon, LLC



EXECUTIVE SUMMARY

Environmental Services, Inc. (ESI) was contracted by VCSA to perform the second validation of the methodology element entitled *Methodology for Avoided Mosaic Deforestation of Tropical Forests* –prepared by Wildlife Works Carbon, LLC, hereafter referred to as WWC in accordance to the VCS 2007.1 and the VCS Program Normative Document: Double Approval Process (version 1.1). Our validation process closely follows the VCS Voluntary Program Normative Document: Double Approval Process (Version 1.1, 21 January 2010), Guidance for Agriculture, Forestry and Other Land Use Projects (18 November 2010), Voluntary Carbon Standard Program Guidelines (18 November 2008), Voluntary Carbon Standard 2007.1, ISO14064-3:2006, and ISO 14065:2007.

Specifically the second validation (assessment) included the review of the requirements outlined in the VCS 2007.1, Section 5 and 6 (Project Level Requirements and Methodologies). The assessment included the following items: eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, quantification of GHG reductions/removals, monitoring, data and parameters, and adherence to the project-level principals (relevance, completeness, consistency, accuracy, transparency, conservativeness). ESI's assessment also included a detailed analysis of the methodology, literature reviews, technical reviews, first validators' assessment report, and WWC's responses to all corrective action requests (CAR) and clarifications (CL).

The ESI validation team identified 48 CAR's and CL's. All were addressed satisfactorily by WWC during the double approval process. These CAR's and CL's provided needed clarity to ensure the methodology was useable by project developers (an objective stated by WWC) as well as improvements in the calculations of emission reductions to ensure that verified emissions reductions met the VCS program criteria for GHG projects.

ESI confirms all validation activities including objectives, scope and criteria, level of assurance and the methodology adherence to the VCS 2007.1 as documented in this report are complete and concludes without any qualifications or limiting conditions that the methodology element documentation (*Methodology for Avoided Mosaic Deforestation of Tropical Forests, Version 0.69*) meets the requirements of VCS 2007.1 and the VCS Program Normative Document: Double Approval Process (version 1.1).

ESI recommends that VCSA approves the methodology element (*Methodology for Avoided Mosaic Deforestation of Tropical Forests, Version 0.69*).



INTRODUCTION

This report is prepared in accordance with the outlined requirements of the Voluntary Carbon Standard (VCS 2007.1). Environmental Services, Inc. (ESI) presents our second validation findings of the new methodology element - *Methodology for Avoided Mosaic Deforestation of Tropical Forests* –prepared by WWC. The second validation was conducted as part of the VCSA Double Approval Process (version 1.1, January 21, 2010). 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/validation of assertions at the project level for Land Use and Forestry (Group 3) and is approved to validate/verify for VCSA under Scope 14.

Contact Information Including Roles and Responsibilities

<p>Methodology Developer: Wildlife Works Carbon, LLC</p>	<p>Mike Korchinsky – Methodology Owner/Developer (415-265-4744 / mikeroad@wildlifeworks.com)</p> <p>Jeremy Freund – Methodology Developer (415- 637-7853 / jeremy@wildlifeworks.com)</p>
<p>Methodology Developer’s Consultants: ecoPartners, LLC</p>	<p>Kyle Holland – Methodology Developer (510 545-3070 / kholland@ecopartnersllc.com)</p> <p>Benjamin Caldwell – Methodology Developer (btcaldwell@ecopartnersllc.com)</p> <p>Ryan Anderson – Methodology Developer (ryan.anderson.mt@gmail.com)</p> <p>Josh Harmsen - Methodology Developer (jharmsen@ecopartnersllc.com)</p>
<p>Accredited Validation Entity: Environmental Services, Inc.</p>	<p>Shawn McMahan – Lead Validator (330-833-9941/ smcmahon@esinc.cc)</p> <p>Steve Ruddell (CarbonVerde)– Validation Team Member/Technical Expert/ VCS, AFOLU-REDD Expert (970-403-3430 / steve@carbonverde.com)</p> <p>Scott Sager – Validation Team Member (904-470-2200 / ssager@esinc.cc)</p> <p>Rich Scharf – Validation Team Member (252-402-7354 / rscharf@esinc.cc)</p> <p>Janice McMahan – QA/QC (330-833-9941 / jmcmahon@esinc.cc)</p>



General Description

ESI was contracted by VCSA to conduct the second validation of the proposed methodology element entitled *Methodology for Avoided Mosaic Deforestation of Tropical Forests* developed by WWC. The methodology element fits within the Agriculture, Forestry, and other Land Use (AFOLU) Scope (i.e. Scope 14).

VALIDATION DETAILS

Validation Objective

The second validation objective included an assessment of the likelihood that implementation of the methodology element would result in the accurate calculations and appropriate eligibility criteria of the GHG emission removal methodology as stated by the methodology developer (ISO 14064-3:2006).

Validation Scope

The scope of the methodology element second validation was to “evaluate whether or not the methodology was prepared in line with VCS Program requirements, including Section 5 and Section 6 of the VCS 2007.1.” Our assessment included a detailed review of: eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, monitoring, data and parameters, and adherence to the project level principles of the VCS program (relevance, completeness, consistency, accuracy, transparency, and conservativeness).

Validation Criteria

The following criteria were used to validate the methodology element:

- *Voluntary Program Normative Document: Double Approval Process (Version 1.1, 21 January 2010).*
- *Voluntary Carbon Standard Program Guidelines (18 Nov 2008)*
- *Voluntary Carbon Standard 2007.1(18 Nov 2008)*
- *Guidance for Agriculture, Forestry and Other Land Use Projects (18 Nov 2008)*
- *Tool for AFOLU Methodological Issues (18 Nov 2008)*
- *Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (18 Nov 2008)*

Validation Level of Assurance

The level of assurance was used to determine the depth of detail that the validation team placed in the validation plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). For this methodology element second validation, ESI assessed the methodology (proposed data, sampling descriptions, documentation, calculations, etc.) to provide *reasonable assurance* to meet the Project Level and Methodology requirements of the VCS Program (VCS 2007.1, Section 5 and Section 6).



Validation Materiality Threshold

Materiality is a concept that errors, omissions and misrepresentations could affect the GHG reduction assertion and influence the intended users (ISO 14064-3:2006). The materiality of a methodology element was based on an evaluation of whether or not the methodology element followed the VCS Program requirements. If the methodology did not adhere to the VCS program requirements, the methodology developer was given the opportunity to correct the non-conformity and amend the methodology.

Handling of records

ESI shall keep all documents and records in a secure retrievable manner for at least two years after the Double Approval Process has been completed; however, records can be destroyed at any time, pending agreement between the client, ESI, and VCS. ESI shall maintain and manage records of its methodology element second validation activities including:

- Application information and validation scopes
- Justification for how validation time is determined
- Confirmation of the completion of validation, including findings and information on material or non-material discrepancies
- Validation statements
- Records of complaints and appeals, and any subsequent correction or corrective actions

ESI maintains all methodology element second validation records securely and confidentially, including during their transport, transmission or transfer. ESI shall retain validation records in accordance with any legal, contractual, and/or VCS requirements, per ISO 14065:2007, Sec. 7.5.

VALIDATION PROCESS

Our validation process closely followed the VCS Voluntary Program Normative Document: Double Approval Process (Version 1.1, 21 January 2010), Guidance for Agriculture, Forestry and Other Land Use Projects (18 November 2010), Voluntary Carbon Standard Program Guidelines (18 November 2008), Voluntary Carbon Standard 2007.1, ISO14064-3:2006, ISO 14065:2007, and ESI's internal Management System and Management System Manual, Section V.2 (VCS) 3.0. As defined by ISO 14064-3:2006 (E), "validation is the systematic, independent and documented process for the evaluation of a greenhouse gas assertion in a GHG project plan against agreed validation criteria". In the case of a new methodology validation, the validation is the systematic, independent documented process for the evaluation of methodology element documentation against the VCS Program criteria.

Specifically the second validation (assessment) included the review of the requirements outlined in the VCS 2007.1, Section 5 and 6 (Project Level Requirements and Methodologies). The assessment included the following items: eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, quantification of GHG reductions/removals, monitoring, data and parameters, and adherence to the project-level principals (relevance, completeness,



consistency, accuracy, transparency, conservativeness) as well as the review of the first validator's findings and validation report.

ESI's validation approach/process was generally broken down into three parts: ESI review and assessment; utilization of independent technical experts; and review of methodology developer's explanations/ clarifications and insight. ESI's assessment also included a detailed analysis of the methodology, literature reviews, technical reviews, first validators' assessment report, and WWC's responses to all corrective action requests and clarifications. Documents received/reviewed, meetings/interviews, and validation milestones are described below.

Documents Received/Reviewed

During the second validation, ESI received and reviewed the following documents provided by WWC:

- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Semi-Arid Forests V-45.docx and .pdf (11/17/10 via email)
- DNV CAR Responses 1.docx (11/17/10 via email)
- (DNV) Draft CAR CLs 12022010 V5.doc (12/8/2010 via email)
- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Semi-Arid Forests V-60.docx and .pdf (12/8/10 via email)
- WWC Dryland 2nd Val.RD1 V4.xlsx (WWC responses to ESI's CAR/CLs) (12/8/10 via email)
- (DNV) Draft CAR CLs 12102010 V6.doc (12/13/10 via email)
- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Semi-Arid Forests V-62.docx and .pdf (12/13/10 via email)
- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Semi-Arid Forests V-65.docx and.pdf (12/14/10 via email)
- Round 2 CL and CAR_December 13 2010-1 V2.xls (WWC responses to ESI's CAR/CLs) (12/14/10 via email)
- Final_Assessment Report_Wildlifeworks Carbon LLC_DNV_12132010.pdf (12/14/10 via email)
- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Forests V-68.docx and.pdf (12/17/10 via email)
- VMXXXX Methodology for Avoided Mosaic Deforestation of Tropical Forests V-69 (12/17/10 via email)
- Final_Assessment Report_Wildlifeworks Carbon LLC_DNV_ESI_12272010.pdf (12/27/10 via email)

Meetings/Interviews

During the course of the second validation, ESI and WWC held two meetings. All other correspondence occurred via email. ESI met with WWC between December 1-2, 2010 at their offices in Sausalito, CA and again on December 6, 2010 via conference call with representatives from DNV (first validation team) present. The details of the meetings are briefly described in the table below:



Date	Attendees	Topics Discussed
December 1-2, 2010	Shawn McMahon – ESI Steve Ruddell – ESI Kyle Holland – ecoPartners Benjamin Caldwell –ecoPartners Ryan Anderson – ecoPartners Josh Harmsen - ecoPartners Jeremy Freund – WWC	Review of Validation Plan Update on First Validators Overview of Methodology Baseline Scenario discussion Leakage discussion
December 6, 2010	Shawn McMahon – ESI Steve Ruddell – ESI Kyle Holland – ecoPartners Benjamin Caldwell –ecoPartners Sam Stevenson – DNV Gordon Smith - DNV	The proposed baseline re-evaluation; specifically the shift or lag parameters associated with cumulative deforestation model

Validation Milestones

The following table documents the main validation activities that occurred during the second validation process:

Project/Validation Activity	Date
ESI Internal Conflict of Interest (COI) process completed and approved (no issues). WWC Notification.	11/17/10
Submission of Validation Plan to WWC for approval	11/18/10
Signed Validation Plan received from WWC	11/29/10
ESI internal project initiation meeting	11/22/10
Public Comment Period Closed	11/30/10
Opening Meeting with WWC at WWC office - San Francisco	12/1/10
ESI (Shawn McMahon and Steve Ruddell) meet with WWC in San Francisco to review methodology	12/1/10 to 12/2/10
ESI submits first round of findings (questions, comments, corrective actions, etc.) at end of meetings in SF	12/3/10
WWC submits first round responses back to ESI	12/8/10
Meeting held between WWC, ESI and DNV to discuss “shifting/lag parameter” issue	12/6/10
ESI submits second round of findings	12/13/10
ESI receives 1 st validation report (DNV) for review	12/14/10
WWC submits final responses back to ESI	12/14/10
Draft validation report submitted to WWC for review	12/22/10
Closing Meeting with WWC	12/23/10
ESI received DNV’s final report	12/27/10
ESI’s Final report submitted to VCSA/WWC	12/28/10



VALIDATION FINDINGS

Summary

The ESI validation team identified 48 corrective action requests (CAR) and clarifications (CL). All were addressed satisfactorily by WWC during the double approval process. These CAR's and CL's provided needed clarity to ensure the methodology was useable by project developers (an objective stated by WWC) as well as improvements in the calculations of emission reductions to ensure that verified emissions reductions met the VCS program criteria for GHG projects¹. Appendix A details each CAR/CL and the resolution; however, for summary purposes the most significant CAR and CL included:

1. The draft methodology maintained equations and variables separately from the text in Appendix A and B respectively. The final methodology defines all variables used in the equations within Appendix A, and brought the most critical equations in-line into the text.
2. The draft methodology required a time-lag in monitored and reported emission reductions when the baseline and cumulative deforestation model is reevaluated every 10 years to prevent a reversal that could occur as a result of the new baseline. The final methodology protects against a possible reversal while ensuring that future emission reductions are calculated conservatively when the baseline is reevaluated.
3. The draft methodology allowed for an interpretation that many different approaches could be used when calculating the cumulative deforestation model. The final methodology is clear that only the Iterative Reweighted Least Squares and Akaike Information Criterion models can be used for fitting the cumulative deforestation model, and selecting the best nested model in the parameter vector.
4. The draft methodology applicability conditions allowed for projects to potentially be developed on forest lands that can be legally logged. Additionally, the applicability conditions did not include language that restricted market leakage. The final methodology effectively addresses applicability conditions for both of these issues.
5. The draft methodology included several definitions that were not relevant, not clear, or ambiguous. The final methodology ensures clear definitions.

VCS 2007.1 Criteria

The following criteria were used to validate the methodology element:

- *Voluntary Program Normative Document: Double Approval Process (Version 1.1, 21 January 2010).*
- *Voluntary Carbon Standard Program Guidelines (18 Nov 2008)*
- *Voluntary Carbon Standard 2007.1(18 Nov 2008)*
- *Guidance for Agriculture, Forestry and Other Land Use Projects (18 Nov 2008)*

¹ Section 2.2 of the Voluntary Carbon Standard Program Guidelines requires that all projects are real, measurable, permanent, additional, independently verified, unique, transparent, and conservative.



- *Tool for AFOLU Methodological Issues (18 Nov 2008)*
- *Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (18 Nov 2008)*

Eligibility Criteria

Section 6 Methodology of the VCS 2007.1 requires that VCS Program methodologies satisfy the following criteria. The validated methodology satisfies these criteria (see below), clearly defines the applicability conditions for its use in Section 4, and effectively applies the additional AFOLU requirements found in the current version of the “Tool for AFOLU Methodological Issues”, as required under Section 3.4 of the VCS 2007.1.

Baseline Approach

Section 6 of the methodology identifies procedures and assumptions for how to determine the most conservative baseline scenario through the identification of drivers of deforestation, the reference region, and the carbon pools to develop a cumulative deforestation model. This model is used to estimate the likely deforestation that would occur in the project area given the observed deforestation in the reference region. Baseline reevaluation procedures ensure that the emission reductions are not overestimated over the project period.

Additionality

Section 7 of the methodology requires that project proponents use the VCS “Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities,” and identifies relevant applicability conditions that apply to the principle of additionality in Section 4 of the methodology.

Project Boundary

Section 5 of the methodology identifies procedures that address the establishment of spatial and temporal project boundaries, including the selection of mandatory and optional carbon pools, i.e. the sources, sinks, and reservoirs relevant to the baseline scenario.

Emissions

Section 6 and Section 11 of the methodology adequately addresses the emissions criteria as described in the baseline approach and quantification of GHG reductions/removals sections (above and below).

Leakage

Section 10 of the methodology appropriately quantifies leakage within a defined “leakage area” from both deforestation and degradation caused by activities that displace from the project area. A leakage model is developed from the cumulative deforestation model assuming degradation precedes deforestation. Procedures are provided for assessing leakage at each monitoring period.



Quantification of GHG Reductions/Removals

Section 11 Quantification of Net GHG Emission Reductions and/or Removals of the methodology identify procedures for estimating net emission reductions/removals in avoided baseline emissions, project emissions, confidence deductions, and emissions from leakage, for each monitoring period.

Monitoring

Section 13 of the methodology clearly specifies sampling procedures on how fixed area plots must be coupled with allometric equations to estimate carbon stocks in live small and large trees, and dead standing and lying dead carbon pools, as well as sampling requirements for soil and non-tree carbon stocks. Additional monitoring procedures address stratification, sampling size, and plot size. Monitoring frequency is provided in Appendix B.

Data and Parameters

Section 14 of the methodology references Appendix B (variable log) for a complete list of variables used in the equations provided in Appendix A.

Project-Level Principals

The project level principles of the VCS 2007.1 (relevance, completeness, consistency, accuracy, transparency, conservativeness) were followed during the development of the methodology and are adequately addressed within the methodology.

Global Stakeholder Consultation


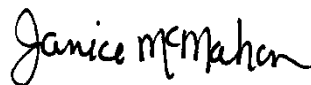
The VCSA Global Stakeholder Consultation period for the methodology was conducted between November 1, 2010 and November 30, 2010. No public comments were received, which was confirmed by VCSA, via email, on December 2, 2010.



VALIDATION RESULTS / CONCLUSION

ESI confirms all validation activities including objectives, scope and criteria, level of assurance and the methodology adherence to the VCS 2007.1 as documented in this report are complete and concludes without any qualifications or limiting conditions that the methodology element documentation (*Methodology for Avoided Mosaic Deforestation of Tropical Forests, Version 0.69*) meets the requirements of VCS 2007.1 and the VCS Program Normative Document: Double Approval Process (version 1.1).

Therefore, ESI recommends that VCSA approves the methodology element (*Methodology for Avoided Mosaic Deforestation of Tropical Forests, Version 0.69*) prepared by WWC.

Report Submitted to:	<p>Voluntary Carbon Standard Association 1730 Rhode Island Ave. NW Suite 803 Washington, D.C. 20036</p> <p>Wildlife Works Carbon LLC c/o Mike Korchinsky President and Co-Founder P.O. Box 996 Stinson Beach, CA 94970</p>
Report Submitted by:	<p>Environmental Services Inc. Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32257</p>
ESI Lead Validator Name and Signature	 <p>Shawn McMahon Lead Validator</p>
ESI Division Director Name and Signature	 <p>Janice McMahon Vice President and Forestry, Carbon and GHG Division Director</p>
Date:	28 December 2010



APPENDIX A Corrective Action Requests, Clarifications and Resolutions

Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
1	Clarification: The comparison of this REDD methodology to other REDD methodologies makes a statement that it does not predict a rate of deforestation on line 349, but states the reference region is used to determine the rate of deforestation on line 932.	They will modify to state the "cumulative" deforestation not "rate".	So changed	CL 1 Closed
2	Corrective Action Request: Since complex equations are kept in Appendix A to be used side-by-side with the text, all variables within each equation must be defined (in English) at least one time for each equation in Appendix A.	Will add to appendix A.	Appendix A has been updated with all variables and additional comments	CAR 2 Closed
3	Clarification: Provide an example of how a vector is used in the cumulative deforestation model, such as in equation [7].	Will include an example as discussed.	Language added to section 2.1: "Vectors are indicated using bold face; for example θ is the vector of covariate parameters to the cumulative deforestation model. This vector may include numerous elements such as the numeric effects of population density, road density or per-capita household income on predicted deforestation."	CL 3 Closed
4	Clarification: Add lines 336 and 337 to the definition of Baseline Scenario.	WWC will change as stated.	Changed as stated	CL 4 Closed
5	Corrective Action Request: Dead wood in the soil is included in the definition of litter and therefore not part of the dead wood carbon pool. Remove"or in the soil" from the definition of dead wood.	WWC will change as stated.	Changed as stated	CAR 5 Closed
6	Corrective Action Request: The language on line 506"that do not significantly degrade before the end of the project crediting period" is ambiguous with the language used on line 1445 ... "assumed to remain sequestered throughout the lifetime of the project crediting period". Use the language on line 1445 in the definition of Long-Lived Wood Products.	WWC will change as stated.	Language from 1445 (6.6.10) now used in definition.	CAR 6 Closed
7	Clarification: Include in the definition of Monitoring Period that Appendix B of this methodology provides for the frequency of monitoring for each variable.	Will add that length of monitoring period must be less than or equal to 5 years.	Added "The length of each monitoring period must be less than or equal to five years. "	CL 7 Closed
8	Clarification: It seems like the definition of Temporal Project Boundary should include the same time period as found in the definition of Non-Permanence Risk Analysis?	Delete the definition of Non-permanence risk analysis.	deleted	CL 8 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
9	Clarification: The definition of Reference Period should be defined as "A historic period..."	Will add "a historic period of time" in the definition.	So changed	CL 9 Closed
10	Corrective Action Request: This definition is ambiguous. Remove "non-forested" from the first part of this definition.	Will remove definition of reforestation.	Removed	CAR 10 Closed
11	Corrective Action Request: The definition of Afforestation is not included in Section 3 - Definitions.	Ok - not relevant to meth.	No change, this methodology does not encompass projects receiving carbon credits for afforestation.	CAR 11 Closed
12	Clarification: Include a definition for Foreign Agents of deforestation. Provide examples.	Will provide a definition.	Definition reads: "Foreign Agents: Groups originating outside the project region."	CL 12 Closed
13	Corrective Action Request: Item 6 states "The project shall not be mandated by any enforced law, statute, or other regulatory framework." It would seem this is more a demonstration of additionality, and would be more appropriate to list in that section. Alternatively, on line 1535 of page 54 the additionality requirement states "Within the project area, project activities shall not lead to the violation of any law, even those which are not enforced". This appears to be an applicability requirement and would be more appropriate in the applicability section.	WWC will restate the "project is not required by any law" in the additionality section.	Reads: "The project shall not be mandated by any enforced law, statute, or other regulatory framework."	CAR 13 Closed
14	Clarification: States "...the project crediting period... must be at least 20 but not more than 100 years from the project start date". Recent discussion with VCS indicates they prefer that specific VCS requirements not be restated in methodologies unless they are an applicability requirement, or are more closely defined for a specific purpose (such as a crediting period of no greater than 50 years because of constraints on the model). This is so the methodology will remain viable in the case that VCS program requirements change. Consider reviewing the methodology for similar such statements and replacing with a general reference to VCS program requirements.	Need further clarification from VCS.	Please see response to CL49.	CL 14 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
15	Clarification: The guidance document states "IF the REDD project activity includes avoiding unplanned deforestation/degradation activities... as well as stopping logging in an area designated for legally sanctioned logging, project proponents need to follow the REDD guidelines for the unplanned deforestation/degradation activities and the IFM section for the legal logging activities". Should an applicability statement be added that the model is only appropriate for illegal logging activities (deforestation/degradation)?	WWC will add an applicability condition.	App. Con. #13 (added) reads: "13. Project areas shall not include land designated for legally sanctioned logging activities"	CL 15 Closed
16	Clarification: Should exclusion of N fertilizers in the baseline be a requirement in the applicability section as N ₂ O is conservatively excluded?	VCS (program update 2010-5-24) states you don't have to account for fertilizer unless ALM.	No change.	CL 16 Closed
17	CAR: The table includes "above ground non-tree woody biomass". The AFOLU Meth Tool step 3 (*) states the term "woody" is for ARR and ALM projects. Elsewhere in the document (e.g. section 6.6.3) it is correctly stated as "above ground non-tree". Please revise the table.	WWC will make change.	So changed	CAR 17 Closed
18	Clarification: Include reference and web link if appropriate. Found in May 24 VCS Program Update.	Will provide a reference.	Reference added; please see section 3.3.3 in document found at: http://www.v-c-s.org/docs/AFOLU%20Requirements,%20Consultation%202011.pdf	CL 18 Closed
19	Clarification: States "The cumulative deforestation model is applicable to all carbon pools under the baseline scenario", however there is a separate soil carbon loss model based on observations from the reference region. Should line 1061 be revised as the cumulative deforestation model is not applicable to soils?	The deforestation model is a required input and determines a main input of the soils model. Therefore it is part of the model.	No change.	CL 19 Closed
20	Corrective Action Request: Equation 18 is incorrect (CD should be DF)	Has been corrected in the latest version of the meth.	CD has been corrected as DF.	CAR 20 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
21	Clarification: Equation [18] is fundamental to calculating cumulative deforestation. For ease of use, the variables associated with Equation [18] should be defined immediately after it is stated, in English. In its current format, the reader is required to read further in section 6 as well as reference several other equations in appendix A in order to gain a clear understanding of Equation [18]. Consider moving lines 1092 through 1098 to immediately follow Equation [18] and expand to include all variables.	WWC will add definitions for the variables in the text here. This will also be done for equation 8 in the appropriate section.	These lines have been moved to below equation [18].	CL 21 Closed
22	Corrective Action Request: The wording "can be" suggests that there are other acceptable approaches for fitting/evaluating the model in addition to IRLS and AIC. The methodology must state all of the acceptable methods for fitting the model and selecting the best nested model. Provide references for all acceptable methods, such as provided on lines 1234-1239. If other methods can be used, then criteria must be listed to guide their selection.	Will change "can be fit" to "to be fit" to accommodate only the approach discussed. Will also add the references on model selection related to AIC when AIC is first mentioned. Will also keep this here as well.	Language so altered, references now appear in both 6.4.1 Background and in 6.4.7 Model fitting	CAR 22 Closed
23	Clarification: Vectors τ , w , and ϕ are referenced in the text, but are not included in the variable log in Appendix B or used in any equations in Appendix A. Therefore their purposes are not clear.	Will be included in the variable log - WWC will check to see if needs to be included, as was oversight.	These vectors have been added to the variable log in Appendix B. These vectors relate to the model fitting procedure (IRLS) and not any particular equation so therefore they are not used in Appendix A.	CL 23 Closed
24	CAR: Caption states "The time series is stationary if the images are well distributed throughout the reference period". Please define "well distributed" and provide an example.	The fix would require a considerably complex stat analysis. There is not much opportunity for gaming the system, so "well distributed" is sufficiently definitive.	No change.	CAR 24 Closed
25	Clarification: States "The literature for tropical soils estimates this mean rate is 24% per year... Based on this estimate, 20% is suggested as a conservative estimate for semi-arid tropical forests since this rate is lower than that estimated for tropical forests". Is there no literature supporting a more specific rate of decay for semi-arid tropical forests?	There is not literature for semi arid tropical soils - Gordon stated 4% was acceptable. We given the constraints we agree.	No change.	CAR 25 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
26	CAR: States "This proportion will probably be selected based on empirical evidence observed in the region and will likely vary from project to project depending on the mechanism used to clear the land". Yes this will clearly vary from project to project, but some basis for what might qualify (examples) is needed. Please consider adding examples.	Examples will be added.	An example has been added to section: "For instance, if a mechanical device is used to clear the forest, such as a bulldozer, then this proportion might be higher than if the forest is cleared with a handsaw."	CAR 26 Closed
27	Clarification: A definition of covariate would be helpful.	WWC will add a definition.	Definition reads: "Covariate: A variable possibly predictive of the outcome under study; in this case quantifiable social, economic, or political factors that may improve model fit. "	CL 27 Closed
28	Clarification: Include a reference and web link if appropriate to the "Approved VCS Tool VT0001".	Print copy error - link is appropriate.	No change.	CL 28 Closed
29	Corrective Action Request: "small" should be "non-tree"	WWC will change as stated.	So changed	CAR 29 Closed
30	Clarification: What is the difference between "proportion" and "fraction". See Section 6.6.10.	WWC will change all "fraction" to "proportion".	So changed	CL 30 Closed
31	Clarification: Inventories must be completed to account for emissions from catastrophic events such as fire. This might be included in Section 9 - Project Emissions, or Section 13 - Monitoring.	WWC will add a requirement to section 13.2 to stratify and inventory catastrophic events.	Additional language added to section 9: "However, the project area may need to be re-stratified per section 13.2."	CL 31 Closed
32	Clarification: What is the purpose of the leakage mitigation section? How does this section relate to leakage calculations?	Leakage mitigation is a requirement of VCS standard.	No change	CL 32 Closed
33	Clarification: Since equations [8] and [18] are central to estimating cumulative deforestation, and since equation [18] has already been included on page 34, consider including equation [8] at this line number.	WWC will include 8, 10 and 34 in-line in the body of the text.	These equations are now place inline and in the appendix.	CL 33 Closed
34	Note: CAR 34 was deleted during round 1			
35	Clarification: Why should plot locations not be visibly marked on the ground?	WWC will add that plots are located/monumented through GPS.	Now reads: "Neither the plot boundaries nor locations should be visibly marked on the ground, as they most likely exist in areas outside the project's control. Rather, they should be monumented using a GPS."	CL 35 Closed
36	Clarification: "Evidence" should be changed to "procedure for"	WWC will provide a requirement for documentation of training	Now reads: "5. Procedure for training of field collection teams. 6. Documentation of training for field collection teams."	CL 36 Closed
37	Clarification: Reference and provide link to May 24 VCS Program Update.	WWC will add an appropriate reference.	Reference added	CL 37 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
38	Clarification: Include title for Appendix A	WWC will add title.	Title provided: Appendix A: Equations	CL 38 Closed
39	Clarification: Include title for Appendix B	WWC will add title.	New title provided: Appendix B: List of Variables	CL 39 Closed
40	Clarification: Can you add a representative list of covariates that would be relevant to most projects to cue the project developers and verifiers.	WWC will add examples of likely covariates.	Now reads: "5. A list of external drivers (covariates) of deforestation used in the model, if any (e.g. median income, road density, rainfall)."	CL 40 Closed
41	Clarification: Time shifting	Need to speak with DNV to rectify logic behind time shifting - seems like a policy issue with VCS. If you readjust every ten years and there is a lower baseline from measurements in the reference region, there could effectively be a reversal, which is not allowed by VCS. They are concerned with consulting VCS over any issues due to time delay.	Revised language has been provided in sections 6.7 and 11.2 to reflect the conversation with DNV and ESI 12/6/10	CL 41 Closed
42	Clarification: Add 20 - 100 years to definition of project crediting period.	WWC will change, though I need to discuss with VCS to see if this is what they did not want (repeating verbatim of VCS rules in the meth).	Language not added to avoid repetition with VCS 2007 (see response to CL49)	CL 42 Closed
43	Clarification: Risk of potential loss in carbon stocks over a period of 100 years - the 100 years is not specified by VCS as risk analysis is every verification.	WWC are removing the definition for risk analysis all together.	Removed	CL 43 Closed
44	Clarification: Market leakage is not listed as an applicability requirement.	WWC will add a reference in the leakage section that market leakage will be addressed through the appropriate VCS tool.	Now reads "Emissions from non-market leakage are estimated using a cumulative model . . . Developers should refer to the VCS tool for AFOLU methodological issues, table 2, to determine if leakage credit adjustments are necessary (VCS, 2008b)." Reference to VCS. "Voluntary Carbon Standard Tool for AFOLU Methodological Issues." VCS AFOLU Tool (2008): 1-10.	CL 44 Closed
45	Clarification: Would be helpful to have the equations 8, 10 & 34 in line in the leakage section.	WWC will add.	These equations have been moved inline	CL 45 Closed
46	Clarification: Add a requirement for defining leakage area that areas must be forested.	WWC will add to the criteria in section 10.2.	requirement added to 10.2	CL 46 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
47	Clarification: The size of the leakage area should at a minimum be the size of the forested portions of the project area.	WWC will change "the size of the leakage area must at least be the size of the forested portion of the project area".	So changed	CL 47 Closed
48	Clarification: Section 10.3.3 - add a sentence for clarity.	WWC will add a sentence that requires this section to apply to the baseline re-evaluation.	Reads: "The leakage model is re-fit per the baseline at the end of each monitoring period."	CL 48 Closed
49	Clarification: Recent discussion with VCS indicates they prefer that specific VCS requirements not be restated in methodologies unless they are an applicability requirement, or are more closely defined for a specific purpose (such as a crediting period of no greater than 50 years because of constraints on the model). Please review the <u>whole</u> methodology for similar such statements and replace with a general reference to VCS program requirements per the guidance provided by VCSA (Carolyn Ching on 12/13/10) Attached		Language has been modified as follows: Section 3: Redundant definitions with VCS changed to read: "Please see current VCS definition." Section 5.1, Sentence modified: "In all cases, the project must be verified within the time allotted under current VCS rules." Section 5.2, Sentences modified: "Lands must have qualified as forest" for a minimum time period prior to the project start date, as specified by the current VCS standard. The temporal boundaries include the project crediting period which is fixed by the project proponent." "Baseline reevaluation after the project start date and monitoring must conform to the current VCS standard."	CL 49 Closed



Question No.	Corrective Action Requests/ Clarifications	In-Meeting WWC Comments	WWC Action	Addressed / Open
49 continuation			Text revised to read: Projects may use an historical crediting period under specific circumstances. The VCS standard should be referenced to ensure that the project temporal boundaries are developed to be consistent with current VCS regulations. Currently, a project start date and project crediting period start date can may be historic back to January 1, 2002, provided that the project proponent can demonstrate that GHG Emission reduction activities consistent with the REDD project design, such as forest protection, community leakage mitigation and other REDD project activities, were being undertaken by project proponent as of the project start date. The project proponent may not receive credit for carbon sequestration between the project crediting period start date and the first verification, but provided that the GHG Monitoring for the first verification is performed using an approved VCS REDD methodology, then credit for emissions reductions based on the carbon inventory at the time of first verification may be claimed back to the project crediting period start date.	CL 49 Closed
49 continuation			<p>PD Requirements were changed: The dates for mandatory baseline reevaluation after the project start date. The dates for mandatory baseline reevaluation after the project start date.</p> <p>Section 5.4, Sentence added: Conservative exclusions must always meet VCS requirements.</p> <p>Section 6.7, Sentence modified: The baseline scenario must be reevaluated per current VCS requirements.</p> <p>Section 10, Sentence modified: Developers should refer to the latest version of the VCS Tool for AFOLU Methodological Issues to determine if leakage credit adjustments are necessary.</p>	CL 49 Closed