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Voluntary Carbon Standard Final Methodology Assessment Report for: 3GreenTree Ecosystem Services and Ecosystem Restoration Associates

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Assessment standard:	*Voluntary Carbon Standard, 2007.1 (November 18, 2008)* *Voluntary Carbon Standard, Guidance for Agriculture, Forestry, and Other Land Use, 2007.1 (November 18, 2008)* *Voluntary Carbon Standard, Tool for AFOLU Methodological Issues, (November 18, 2008)* *Relevant VCS Program Updates*
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1 INTRODUCTION

1.1 Objective

This report represents the fourth assessment of the revised Improved Forest Management – Logged to Protected Forests (IFM-LtPF) on Fee Simple Forested Properties v9.2. The purpose of this report is to document conformance of the methodology with the requirements of the Voluntary Carbon Standard (VCS). This assessment was requested by 3GreenTrees Ecosystem Services Ltd. and Ecosystem Restoration Associates Inc., hereafter referred to as the "Methodology Developer" and "3GT/ERA Inc.". The report represents the second assessment of the VCS double approval process. The report presents the findings of qualified Rainforest Alliance program auditors and technical experts in methodologies for greenhouse gas emissions and removals or who have assessed the methodology under assessment according to the applicable standard(s) and protocols of the Voluntary Carbon Standard. Section 2 below provides the assessment conclusions. Rainforest Alliance carbon evaluation reports will be available to the public only upon finalization and after agreement of both the proponents and the Rainforest Alliance. Particular material in the report identified as confidential by the proponent will be excluded from any publicly available reports. This report includes findings from the first, second, third, and fourth assessments of the methodology, as noted in section Appendix B below.

The Rainforest Alliance's SmartWood program was founded in 1989 to certify forestry practices conforming to Forest Stewardship Council (FSC) standards and now focuses on providing a variety of forest auditing services. The Rainforest Alliance SmartWood program is a member of the Climate, Community, and Biodiversity Alliance (CCBA) and approved verifier to CCB standards, a verifier with the Plan Vivo (PV) standards, and an accredited verifier with the Voluntary Carbon Standard (VCS).

Dispute resolution: If Rainforest Alliance clients encounter organizations or individuals having concerns or comments about Rainforest Alliance / SmartWood and our services, these parties are strongly encouraged to contact the SmartWood program headquarters directly. Formal complaints or concerns should be sent in writing and may simultaneously been sent to the Voluntary Carbon Standard Association.

1.2 Scope and Criteria

Scope:

This assessment of a new methodology will evaluate whether or not the methodology has been prepared in line with guidance given under the VCS Program, including Section 5 (project level requirements) and Section 6 (methodologies) of the VCS 2007.1 document.

The scope of this assessment includes:

1. Eligibility criteria. Assessment of whether the methodology's eligibility criteria are appropriate and adequate.

2. Baseline approach: Assessment of whether the approach for determining the project baseline is appropriate and adequate.

3. Additionality: Assessment of whether the approach/tools for determining whether the project is additional are appropriate and adequate.

4. Project boundary: Assessment of whether an appropriate and adequate approach is provided for the definition of the project's physical boundary and sources and types of gases included.

5. Emissions: Assessment of whether an appropriate and adequate approach is provided for calculating baseline emissions, project emissions and emission reductions.

6. Leakage: Assessment of whether the approach for calculating leakage is appropriate and adequate.

7. Monitoring: Assessment of whether the monitoring approach is appropriate and adequate.

8. Data and parameters: Assessment of whether monitored and not monitored data and parameters used in emissions calculations are appropriate and adequate.

9. Adherence to the project-level principles of the VCS Program: Assessment of whether the methodology adheres to the project-level principles of the VCS Program.

10. Special case of rejection from other GHG programs: Assessment in the special case that the methodology had been rejected by another GHG program.

11. Public Review: Under the double approval process, new methodologies must be posted for public comment prior to the first assessment. Any comments made during this process will be reported here and addressed.

The methodology was assessed against these eleven criteria. The first nine were referred to specifically by the VCS in section 5.1.2 of the VCS Program Normative Document: Double Approval Process as the minimum to review. The special case of rejection from other GHG programs is also a VCS requirement. There follows a 'Public Review' section that documents findings from the public comment period which all VCS methodologies are subject to. Each of the criteria are followed by more specific points that pertain to Section 5 and/or Section 6 of the VCS 2007.1 standards and where appropriate the relevant section of the VCS Tool for AFOLU Methodological Issues.

The following project level principles, based upon ISO 14064-2:2006, from Section 5 of the VCS 2007.1, were the principles considered in evaluating the methodology against the checklist criteria:

i. General: The application of principles is fundamental to ensure that GHG-related information is a true and fair account. The principles are the basis for, and will guide the application of, requirements in this part of ISO 14064:2006 and the VCS 2007.1.

ii. Relevance: Select the GHG sources, GHG sinks, GHG reservoirs, data and methodologies appropriate to the needs of the intended user.

iii. Completeness: Include all relevant GHG emissions and removals. Include all relevant information to support criteria and procedures.

iv. Consistency: Enable meaningful comparisons in GHG-related information.

v. Accuracy: Reduce bias and uncertainties as far as is practical.

vi. Transparency: Disclose sufficient and appropriate GHG-related information to allow intended users to make decisions with reasonable confidence; and

vii. Conservativeness: Use conservative assumptions, values and procedures to ensure that GHG emission reductions or removal enhancements are not overestimated

Standard criteria:

This assessment follows in line with the guidance provided within the following standards:

- *Voluntary Carbon Standard, 2007.1 (November 18, 2008)*
- *Voluntary Carbon Standard, Guidance for Agriculture, Forestry, and Other Land Use, 2007.1 (November 18, 2008)*
- *Voluntary Carbon Standard, Tool for AFOLU Methodological Issues, (November 18, 2008)*
- *VCS Program Normative Document: Double Approval Process Version 1.0 (June 18, 2009)*
- *Relevant VCS Program Updates*

1.3 Methodology Description

The proposed methodology presents a process for the estimation of reduced emissions from the cessation of logging through the transition to protected forests. The following is taken from Section 2 of v.9.2 of the proposed methodology:

"*This document provides a VCS methodology for Improved Forest Management – Logged to Protected Forest projects on land with forests remaining forests where carbon emission reductions and carbon sequestration occur when logging in the baseline scenario is avoided in the project scenario*."

The methodology presents a process to estimate emissions reductions through the cessation of identified baseline logging on project areas.

2 ASSESSMENT CONCLUSIONS

Conclusion of the Final Audit Report dated 4th April 2011

The final assessment report includes findings from the previous three assessments conducted by the Rainforest Alliance (see Appendix B for a complete overview of findings from all four assessments). Also included in this report is a comprehensive list of all Corrective Action Requests (CARs) issued throughout the assessment process (see Section 2.2) as well as all Observations (OBS) issued (see Section 2.2.1). It should be noted that findings from previous assessment reports may have incorrect references to the current version of the methodology, as the methodology has undergone significant revisions throughout the assessment process.

The revised version of the methodology (v9.2) presents a significant improvement over previous versions of the methodology. Version 8.4 of the methodology was prepared in response to findings from the assessment reports of the first validator, as well as findings from the Rainforest Alliance Draft Final Audit Report dated 23rd December 2010. The revised methodology includes numerous corrections of typographical errors and additional revisions to address the two open CARs from the Rainforest Alliance 23rd December 2010 assessment report. Furthermore, v9.2 includes numerous revisions to address material discrepancies identified by the first validator as part of the VCS Double Approval Process.

Following the assessment of Improved Forest Management – Logged to Protected Forests (IFM-LtPF) on Fee Simple Forested Properties v9.2 dated March 29th 2011, the Rainforest Alliance has found that the current version of the methodology to be in conformance with the VCS 2007.1 standard. As the assessment by Rainforest Alliance represents the second assessment as part of the VCS Double Approval process, it is confirmed that the first validator approved the same version 9.2 dated March 29th 2011 as that approved by the Rainforest Alliance (see DNV Report number: 2010-9022 Revision No. 02).

Conclusions of the Draft Final Audit Report dated 23rd December 2010

The revised version of the methodology (v8.3) presents a significant improvement over previous versions of the methodology. The revised version presents a clear process for the estimation of both baseline and project scenario GHG emissions reductions. Furthermore, the revised methodology includes a robust uncertainty analysis, as well as improved guidance for project developers on both monitoring protocol, as well as model selection which is a vital component of the methodological process.

However, prior to approval of the revised methodology, several minor non-conformities must be addressed. Specifically, two (2) CARs remain open from previous assessments (see **CAR 03/10** and **CAR 12/10**). These two CARs highlight two issues:

1) The methodology does not include a process for monitoring carbon stock loses from illegal and unplanned logging or fuelwood gathering; as such it is not clear how the procedure outlined in footnote 3 of the methodology is engaged.
2) Multiple issues were noted in parameter labeling and unclear derivation throughout the methodology. Although these issues are minor, cumulatively they have a larger impact on the transparency of the methodology.

Prior to the approval of the methodology, the remaining two CARs will need to be addressed.

Additionally, in section 8.1 of this report, numerous typographical errors were noted. As these errors do not materially affect the methodology they were lumped into one observation (see **OBS 03/10**). However, it is strongly advised that these minor typographical errors are addressed prior to the finalization of the methodology.

Conclusions of the Audit Report dated 2nd December 2010

The methodology presents a process for the estimation and calculation of net GHG emission reductions from the conversion of a Logged to Protected Forests. However, version 7.2 of the methodology includes numerous non-conformances. Several of the open non-conformities do not reflect significant structural issues within the methodology, however the audit team would like to highlight several fundamental issues that have been identified.

The revised methodology includes new applicability conditions. Several of the new applicability conditions have been identified by the audit team as potentially resulting in project ineligibility mid-way through a project crediting period. Specifically the use of illegal logging thresholds and activity shifting leakage lead to potential gaps within the methodology, where projects could become ineligible within the project lifetime (see findings specific to CAR 03/10 and CAR 26/10).

The use of ambiguous clauses throughout the entire methodology creates challenges for project developers, as often clear guidance is not provided within the methodology. For example, the revised methodology also included additional guidance on the identification and selection of the likely baseline scenario. However, the audit team found the guidance presented within the methodology to be vague and ambiguous, and not provide a clear process for the identification of the most plausible scenario (see findings related to CAR 09/10).

Finally, multiple inconsistencies and minor errors, coupled with a failure to provide explicitly step wise equation logic (not gaps identified in the calculation of harvested wood products, *ex post* calculations, and unclear guidance on the application of model outputs), the methodology does not present a clear process for the calculation of net GHG emissions reductions and/or removals from project activities.

The methodology requires revision prior to approval by the Rainforest Alliance. The revisions to the previous version of the methodology resulted in the closure of 14 CARs from the first assessment report. However, 16 CARs remain open, as well as the addition of one new CAR, CAR 31/10 regarding numerous errors present in the parameter tables included in Section 12 and 14. Prior to the approval of the proposed methodology all CARs must be closed.

2.1 Audit Team Recommendation

Based on an evaluation of the proponent's revised methodology as related to the defined assessment scope and criteria, which assessed the credibility of all data, rationale, assumptions, justifications and documentation provided by the methodology proponent; the Rainforest Alliance new methodology assessment team finds that the proponent has:

Assessment dated 04 April 2011

☒ Demonstrated unqualified compliance/conformance with the standard

☐ Not demonstrated unqualified compliance/conformance with the standard.

2.2 Corrective Action Requests

Note: A non-conformance is defined in this report as a deficiency, discrepancy or misrepresentation that in all probability materially affects the methodology. CAR language uses "shall" to suggest its necessity and tries not to be prescriptive in terms of mechanisms to mitigate the CAR. Each CAR is brief and refers to a more detailed finding in the appendices.

Corrective action requests (CARs) identified during draft assessment reports must be successfully closed by the proponents before Rainforest Alliance issues a positive assessment decision. Any open CARs upon finalization of the assessment report will result in a qualified assessment statement which lists: (a) all qualifications, (b) rationale for each qualification, and (c) impact of each qualification on the methodology.

CAR #:	**CAR 01/10**
Checklist reference:	1.1, 1.2 Eligibility criteria
CAR description:	3GT/ERA Inc. shall define eligibility criteria in conformance with the VCS Tool for AFOLU Methodological Issues
Timeline for conformance:	Not applicable
Evidence to close CAR:	In the revised methodology, the language referring to "developable land areas" has been removed. The methodology now clearly states that it is applicable to both types of LtPF forest project types, as noted in a revision as per a response to one of the public comments received during the VCS public comment period. Furthermore the methodology defers to the eligibility criteria of IFM LtPF project types of the VCS Standard. As such this CAR is now closed.
CAR Status:	Closed

CAR #:	**CAR 02/10**
Checklist reference:	1.3 Eligibility criteria, 2.1, 2.2 Project boundary, 5.3 Emissions
CAR description:	3GT/ERA Inc. shall include a complete definition list of all relevant terms.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The methodology has added section 3, which includes a listing of relevant terms applicable to the methodology. Additionally, definitions of specific terms are embedded within the methodology for added clarification where appropriate. As such this CAR is now closed.
CAR Status:	Closed

CAR #:	**CAR 03/10**
Checklist reference:	1.3 Eligibility criteria
CAR description:	3GT/ERA Inc. shall clearly define the applicability conditions of the methodology.
Timeline for	Not applicable

conformance:	
Evidence to close CAR:	The methodology was revised to state that illegal harvesting eligibility provision applies only to starting conditions. Also added was a footnote on page 8 requiring inclusion of future non-de minimis illegal or unplanned harvesting in re-verification estimates. Additionally, the revised methodology includes guidance on how carbon stock losses from illegal, unplanned and fuelwood removals will be monitored. Section 13.2 has been revised to require remote and ground-based monitoring to identify and update inventory data for unplanned man-made disturbances. The revisions were found to be sufficient to clearly define the applicability conditions of the methodology, and as such **CAR 03/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 04/10**
Checklist reference:	2.1 Project boundary
CAR description:	3GT/ERA Inc. shall define included carbon pools in conformance with the VCS standard.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Table 1 (section 5.4) of the revised methodology includes clear descriptions of those carbon SSRs to be measured. The identified pools are now in conformance with the 24 May 2010 VCS Program update. Specifically, aboveground non-tree biomass and the litter pool are excluded. Additionally, definitions on the criteria for dead organic matter and snags are provided in section 8.2.3. As these definitions are derived from common practice and peer reviewed studies, they are found to be sufficient guidance for the identification and definition of these carbon pools. As such this CAR is now closed.
CAR Status:	Closed

CAR #:	**CAR 05/10**
Checklist reference:	2.1 Project boundary
CAR description:	3GT/ERA Inc. shall provide a clear, logical quantification process for the calculation of carbon stocks of all carbon pools included within the methodology.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Section 13.2 has been revised to present great detail on how DOM and other monitoring data will be used for comparison against modeled estimates for error determination. Additionally, the methodology has been significantly revised in respect to how below ground biomass is described, and ambiguous references related to possible exclusion as noted in the findings from the previous report, have been removed.

CAR Status:	Closed

CAR #:	**CAR 06/10**
Checklist reference:	2.2 Project boundary
CAR description:	3GT/ERA Inc. shall provide a clear process for the calculation of the project boundary and project area.
Timeline for conformance:	Not Applicable
Evidence to close CAR:	The methodology has been revised to clarify the linkage between THLB and project parameters (see Sections 8 "Baseline Scenario Area Stratification" and 9.1). The approach for calculating project area is clear and well explained. Areas to be excluded are similarly clearly identified, as such **CAR 06/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 07/10**
Checklist reference:	2.3 Project boundary, 5.13 Emissions
CAR description:	3GT/ERA Inc. shall provide a process for the quantification of all non-CO_2 GHGs included within carbon emission calculations.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The methodology now excludes the fertilizer pool and emissions from non-CO_2 GHGs, thus rendering **CAR 07/10** moot. The methodology addresses this problem by adding an eligibility provision excluding operations with significant fertilizer use.
CAR Status:	Closed

CAR #:	**CAR 08/10**
Checklist reference:	2.3 Project boundary, 5.2, 5.3, 5.6 Emissions
CAR description:	3GT/ERA Inc. shall provide specific guidance for the calculation of significant (e.g. application of the *de minimis* rule) baseline and project activity emissions.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology now includes a definition of the term *de minimis*, as well as includes guidance in footnote three for the use of the CDM Tool for Testing Significance of GHG Emissions in A/R CDM projects v1.0. As such this CAR is now closed.
CAR Status:	Closed

CAR #:	**CAR 09/10**
Checklist reference:	3.2, 3.3, 3.4 Baseline approach
CAR description:	3GT/ERA Inc. shall contain provisions, following the VCS AFOLU guidance for baseline setting in IFM LtPF projects, for the selection of the most conservative baseline scenario.
Timeline for	Not applicable

conformance:	
Evidence to close CAR:	The methodology has been revised to include a more clear decision tree guiding baseline selection. The re-structuring of the baseline selection decision tree removes previous ambiguity identified in the second assessment report. Additionally, specific criteria (e.g. ownership for < 5 years) have been added defining the ownership standard. These criteria are clear and sensible. The use of ambiguous terminology such as "plausible" and "may" has been removed. Project developers will find this section easy to understand; implementation will be consistent. These revisions are sufficient to close **CAR 09/10**.
CAR Status:	Closed

CAR #:	**CAR 10/10**
Checklist reference:	3.3 Baseline approach, 5.1 Emissions
CAR description:	3GT/ERA Inc. shall present a clear process for the selection, parameterization, validation, and assessment of appropriate models to be utilized by project developers.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Section 8.1 has been revised to include guidance on the selection of models. Included are both mandatory guidance criteria, as well as suggested criteria. These criteria were found to be sufficient guidance to project developers. However, it should be noted that two OBS were raised related to the model selection guidance (see **OBS 10/10** and **OBS 11/**10).
CAR Status:	Closed

CAR #:	**CAR 11/10**
Checklist reference:	3.3, 3.5 Baseline approach, 5.1, 5.17 Emissions
CAR description:	3GT/ERA Inc. shall present a clear and logical process to conservatively estimate carbon stock changes in the baseline scenario.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The text has been revised sufficiently to address **CAR 11/10**, removing references to alternate methods such as the Ecotrust methodology, and clarifying carbon stock calculation methods. Sufficient guidance on the application of BEFs is now incorporated into the methodology.
CAR Status:	Closed

CAR #:	**CAR 12/10**
Checklist reference:	3.3 Baseline approach, 5.1, 5.13, 5.17 5.20 Emissions, 8.1 Data and parameters
CAR description:	3GT/ERA Inc. shall clearly derive all parameters used in equations embedded in the methodology (or if from the literature be clearly stated)
Timeline for conformance:	Not applicable

Evidence to close CAR:	The origin of several default vales has been added to Table 4 and equations added for the transportation terms (Section 12). These additions were found to sufficiently address those issues highlighted in the previous report regarding the derivation of $C_{MANUFACTUREk}$. Additionally, those issues related to the derivation of $\Delta C_{PERMMAN,t}$ have also been addressed with the additions of equations 24 and 52, as such this portion of **CAR 12/10** has been addressed. Furthermore, all typographical errors identified in the 23rd December 2010 assessment were corrected. The revised methodology includes numerous corrections to the parameter descriptions throughout the methodology. The revised methodology has addressed all identified errors from previous assessments within the parameter descriptions. As such, **CAR 12/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 13/10**
Checklist reference:	3.5 Baseline approach, 5.1 Emissions
CAR description:	3GT/ERA Inc. shall present a process for the conservative estimation of carbon sequestration in harvested wood products.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology splits C_{PERMAN} into two new variables (ΔCPERMMAN1,t and ΔCPERMMAN2,t) and explaining their derivation for primary vs. secondary processing, the methodology has clarified use of this variable, including the new equations 24 and 52 to clearly derive this parameter. The revisions adding greater detail on calculating transportation-related emissions are a significant improvement. Use of "intensity" functions multiplied by transportation distances is a simple though rigorous accounting method that will considerably improve both efficiency and accuracy for project developers. Derivation of HL_k is now explained in detail on page 27. The recommended process of using IPCC default values unless regional or sub-regional values are available is appropriate. As such **CAR 13/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 14/10**
Checklist reference:	5.1 Emissions
CAR description:	3GT/ERA Inc. shall provide a clear process explaining how project participants should select any parameters/equations in cases where these are not provided in the methodology.
Timeline for conformance:	Not applicable
Evidence to close	The revised methodology includes description of sources relevant to

CAR:	literature derived equation inputs. Additionally, the methodology includes guidance in section 12 for the selection of the most conservative values for parameter sources. As such this CAR is now closed. Although it should be noted that concerns related to the derivation of parameters were noted (see **CAR 12/10**).
CAR Status:	Closed

CAR #:	**CAR 15/10**
Checklist reference:	5.1 Emissions
CAR description:	3GT/ERA Inc. shall provide a clear process for the validation of inventory data used to estimate carbon stocks.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Section 8 of the revised methodology includes a section titled "Valid Starting Inventory Requirements". This section includes 3 criteria that must be met (note the numbering is incorrect as it does not follow numerical order). Footnotes 15 and 16 providing further guidance on the validation of initial inventory data. This additional guidance is found to be sufficient to close **CAR 15/10**.
CAR Status:	Closed

CAR #:	**CAR 16/10**
Checklist reference:	5.2, 5.14 Emissions
CAR description:	3GT/ERA Inc. shall clearly explain all assumptions made within the methodology, and justify how assumptions are conservative.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology clearly explains assumptions made within the methodology and supports the justifications with rationale for conservatism. Specifically, those assumptions related to combustion efficiency have been removed from the methodology. As such this CAR is now closed.
CAR Status:	Closed

CAR #:	**CAR 17/10**
Checklist reference:	5.3 Emissions
CAR description:	3GT/ERA Inc. shall provide a clear process for the *ex ante* estimation of project scenario emissions.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The methodology has been revised to more clearly specify whether parameters pertain to either the baseline or project scenario. Parameters have been assigned new names (or terms) differentiating between baseline vs. project. As such, the methodology now clearly distinguishes between baseline and project parameters, which were found to be sufficient to resolve those ambiguities related to **CAR 17/10**.

CAR Status:	Closed

CAR #:	**CAR 18/10**
Checklist reference:	5.4, 5.14, 5.20 Emissions
CAR description:	3GT/ERA Inc. shall present a process for the estimation of uncertainty in estimated carbon stock changes.
Timeline for conformance:	Not applicable
Evidence to close CAR:	In general, the revised uncertainty calculation process outlined in section 11.4 of the methodology was found to be much more robust than previous versions. With the exception of the minor parameter description errors highlighted in Step 1 (see **OBS 14/10**) and 2 (see **OBS 15/10**), the outlined process was found to sufficiently meet the IPCC 2006 guidelines for the calculation of uncertainty. As such **CAR 18/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 19/10**
Checklist reference:	5.5 Emissions
CAR description:	3GT/ERA Inc. shall provide clear guidance on the application of the methodology in all forest types within the defined scope of the methodology.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology is applicable to only boreal and temperate forest types, and includes guidance for the estimation of emissions relative to these forest types. As such this CAR is closed.
CAR Status:	Closed

CAR #:	**CAR 20/10**
Checklist reference:	5.5 Emissions
CAR description:	3GT/ERA Inc. shall provide a clear and consistent process for the stratification of the project area in both baseline and project scenarios.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Revised wording in the methodology provides sufficient clarity for the reader to understand the concepts of stratum and polygons. These are fairly conventional concepts and appear to be used accurately in this methodology. The use of the term “analysis unit” is clearly defined in Step 1 of Section 8 Baseline Scenario Area Stratification. The addition of text was found to be sufficient to address previously noted ambiguities related to the use of this term; as such **CAR 20/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 21/10**
Checklist reference:	5.7, 5.9, 5.10, 5.11 Emissions

CAR description:	3GT/ERA Inc. shall present a clear process for the application of *ex post* data collected during the monitoring process, that ultimately leads to the quantification of net GHG reductions and/or removals.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Section 9.2 has been revised to provide a detailed description of the parameters and calculations, rather than referencing the Ecotrust methodology. Additionally, the revised methodology as a whole has strived to use more direct language in order to remove ambiguities noted in the previous report. For example, in section 9.3.1 quoted in the findings from the 27 October 2010 assessment report, the terms "most likely" and "may" were removed. The methodology now provides clear guidance on what is required of project developers. These revisions are sufficient to address **CAR 21/10**.
CAR Status:	Closed

CAR #:	**CAR 22/10**
Checklist reference:	5.8 Emissions
CAR description:	3GT/ERA Inc. shall clearly explain how the baseline will be changed throughout the crediting period.
Timeline for conformance:	Not applicable
Evidence to close CAR:	In the Methodology Developers response to Public Comments (from the Nature Conservancy), they indicate that the baseline is fixed for the project length, but this is not stated anywhere in the methodology. The references to revising the baseline have been removed from the methodology, although the current version does not explicitly state that the baseline shall not be changed. As such this is no longer a non-conformance, however the Methodology Developer should consider clarifying this, especially as this was expressed as a concern raised during the public review. (see **OBS 06/10**)
CAR Status:	Closed

CAR #:	**CAR 23/10**
Checklist reference:	5.12 Emissions
CAR description:	3GT/ERA Inc. shall present a clear process for the calculation of VCUs in conformance with the VCS standard.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The final equation used to calculate VCUs is equation 51. This equation presents a process consistent with the VCS Standard for the calculation of VCUs. However, it should be noted that little guidance is given within the methodology regarding the derivation of BR_y. (see **OBS 07/10**)
CAR Status:	Closed

CAR #:	**CAR 24/10**
Checklist reference:	5.17 Emissions, 8.1 Data and parameters

CAR description:	3GT/ERA Inc. shall revise Table 5 to assure conformance with the text of the methodology, as well as the VCS standard.
Timeline for conformance:	Not applicable
Evidence to close CAR:	Table 5 has been removed from the revised methodology, and as such this CAR is no longer relevant and is closed.
CAR Status:	Closed

CAR #:	**CAR 25/10**
Checklist reference:	5.17 Emissions
CAR description:	3GT/ERA Inc. shall provide clear guidance for the *ex post* calculation of all carbon stock losses in the project area.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology includes a process for the calculation of biomass loss in the project scenario. Section 9.3.2 of the methodology outlines the procedure for the calculation of carbon stock loss from natural mortality, commercial round wood felling (as a small portion of commercial harvesting is allowed within the methodology), and incidental sources.
CAR Status:	Closed

CAR #:	**CAR 26/10**
Checklist reference:	6.1 Leakage
CAR description:	3GT/ERA Inc. shall present a clear methodology for the identification and quantification of activity shifting leakage.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The methodology has been revised to clarify applicability criteria 7, specifying demonstration of no activity shifting leakage as an eligibility requirement. A new footnote (#4) provides guidance to project developers, but largely defaults to the VSC methodology revision process if activity shifting leakage is found later. Section 10.1 provides general guidance on the types of procedures that could be used to quantify activity shifting leakage prior to project initiation, including historical information and conformance with management plans. Furthermore, section 13.3 mandates that annual monitoring of activity shifting leakage is conducted following those criteria outlined in section 10.3 of the methodology. Through acknowledging the limitations of the methodology, and outlining a clear process for those projects where activity shifting leakage is detected through the required monitoring process outlined in 13.3, the methodology now includes a clear process for assessing activity shifting leakage, as such **CAR 26/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 27/10**
Checklist reference:	6.2 Leakage
CAR description:	3GT/ERA Inc. shall present a clear methodology for the identification and quantification of market effects leakage.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology still includes three procedures for the calculation of market leakage. The first two options are based on accepted market leakage procedures (the VCS default procedure, and the Climate Action Reserve Market Leakage assessment). The third option includes a process for the estimation of the proportion of market leakage displaced outside country boarders, with a weighted average of where national market leakage will like be displaced (based on VCS default values). As both of these steps within option 3 are founded in empirical evidence, and are verifiable, the process for the estimation of market leakage outlined in section 10.2 of the revised methodology was found to be sufficient. As such **CAR 27/10** is closed.
CAR Status:	Closed

CAR #:	**CAR 28/10**
Checklist reference:	7.1, 7.2, 7.3, 7.4 Monitoring
CAR description:	3GT/ERA Inc. shall present a clear process for the monitoring of net GHG emissions reductions, including guidance on which parameters will be monitored and how these parameters will be incorporated into the methodological equations to estimate net GHG emission reductions.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology includes section 13 and 14 which describe both a process for the monitoring of the net GHG emissions reductions, as well as a list of those parameters required to be monitored. However, it should be noted that the parameter tables included within section 14 included numerous errors (see **CAR 31/10**). Additionally, the audit team noted concerns with the application of inventory data in the calculation of DOM carbon stocks (see **CAR 06/10**).
CAR Status:	Closed

CAR #:	**CAR 29/10**
Checklist reference:	8.1 Data and parameters
CAR description:	3GT/ERA Inc. shall clearly and consistently label all parameters included within the methodology.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The revised methodology includes parameter labels beneath the equations. It should be noted that in latter equations, when parameters are used repeatedly, the tables beneath equations do not include parameter descriptions; however they do refer to previous

	equations where the parameters are defined. As such this CAR is closed.
CAR Status:	Closed

CAR #:	**CAR 30/10**
Checklist reference:	11.1 Public review
CAR description:	3GT/ERA Inc. shall provide a response to all public comments received during the VCS public comment period.
Timeline for conformance:	Not applicable
Evidence to close CAR:	A total of six comments were submitted during the public notice period. 3GT/ERA Inc. provided Rainforest Alliance with a summary document describing how each of the public comments received during the public notice period was addressed in the revised methodology. Section 11.1 of this report presents the audit team findings relevant to the public comments received. It should be noted that those issues where the audit team has identified as disagreeing with the response submitted by 3GT/ERA Inc. are largely covered by those CARs identified above. As such CAR 30/10 will be closed with the understanding that those additional CARs identified within the second assessment audit report include those public comments remaining unaddressed in the revised methodology.
CAR Status:	Closed

CAR #:	**CAR 31/10**
Checklist reference:	5.17 Emissions
CAR description:	3GT/ERA Inc. shall clearly present parameters in the parameter tables included in sections 12 and 14.
Timeline for conformance:	Not applicable
Evidence to close CAR:	The tables in Sections 12 and 14 have been significantly revised. They now include consistent information for the parameters listed, with one minor exception. On p.58 the parameter tables for $A_{BSL,I}$ and $\Delta C_{,t}$ do not include the row "Used in", which is included in all other parameter tables. This is not a significant issue, and as such **CAR 31/10** will be closed, however this issue will be highlighted as **OBS 11/10**.
CAR Status:	Closed

2.2.1 Observations

Note: Observations are issued for areas that the auditor sees the potential for improvement in implementing standard requirements or in the quality system. Unlike Corrective Action Requests, observations are not formally closed. Findings related to observations are discussed in Appendix B below.

OBS 01/10	Reference Standard & Requirement: 1.2 Eligibility criteria, 3.3 Baseline approach, 4.1 Additionality, 5.16 Emissions
Description of findings leading to observation: Within the applicability criteria (see criteria number 1), it states that the methodology is only applicable to those eligible project that qualify as IFM-LtPF projects as defined in the VCS Tool for AFOLU Methodological Issues (VCS, 2008). It should be noted that by specifying the exact date of the VCS tool, the methodology is subject to be outdated in the near future as VCS documents are revised.	
Observation: 3GT/ERA Inc. should defer to the "most current version" of all cited VCS standards and tools to ensure that the methodology is in continued conformance with the VCS standard as the standards and tools are revised.	

OBS 02/10	Reference Standard & Requirement: 5.21 Emissions
Description of findings leading to observation: The methodology states in section 3.10: "*Each project **should** develop an uncertainties assessment which outlines the key uncertainties and sources of potential error in the project, mitigation methods, and related monitoring methods which serve to rapidly reduce uncertainty with field tested site data."* The use of the term "should" implies that it is not mandatory. This is not in conformance for project developers with the minimum VCS requirements noted in section 6.5.4 of the VCS which requires conformance with ISO 14064-2:2006, clause 5.9. The VCS states: "*The project proponent **shall** establish and apply quality management procedures to manage data and information.*	
Observation: 3GT/ERA Inc. should mandate the consideration of quality management procedures, as these are required of the project proponent by the VCS standard.	

OBS 03/10	Reference Standard & Requirement: 8.1 Data and parameters
Numerous typographical errors identified are listed in the findings from the 23 December 2010 assessment in section 8.1 below.	
Observation: 3GT/ERA Inc. should correct typographical errors to add clarity to the text.	

OBS 04/10	Reference Standard & Requirement: 1.1 Eligibility criteria
It is not clear why project forest management activities would include harvesting or coppicing in a protected forest that would affect the existing stratification. It appears that this text was extracted from the Ecotrust methodology, which in turn extracted it from the CDM AR-ACM0001 methodology. The inclusion of these activities in monitoring is a conservative approach to ensure that any losses, as it allows for the inclusion of project reversals from changes in management activities. However, as no definition of a protected forest is provided in Section 3 of the methodology, it creates confusion regarding the applicability of the methodology to other VCS IFM project types.	
Observation: 3GT/ERA Inc. should define "protected forests" in section 3 of the methodology to avoid potential confusion with section 13.2.1 of the methodology.	

OBS 05/10	Reference Standard & Requirement: 1.2 Eligibility criteria
The revised methodology now includes the definition of "Timber Harvest Land Base" which is specific, and a reference document from Canada is included as a helpful reference. The definition of THLB lists a number of possible exclusion areas, however this is a suggestive list as the term "may include" is used within the definition, and as such the suggested lists can be included within the THLB. The inclusion of a number of the listed suggested exclusions would result in a direct contradiction to the VCS eligibility requirements (e.g. non-forest clearings and legally required buffered). As such it is not clear how the defined THLB is in conformance with the VCS eligibility requirements for IFM LtPF projects. Furthermore, as the methodology defers to the VCS IFM LtPF eligibility requirements, the current definition of THLB potentially includes non-eligible project areas, as noted above. This results in a potential contradiction within the methodology, where THLB allows for the inclusion of ineligible project areas.	
Observation: 3GT/ERA Inc. should ensure that the definition of THLB cannot include non-eligible project areas.	

OBS 06/10	Reference Standard & Requirement: 5.8 Emissions
The references to revising the baseline have been removed from the methodology. Hence the suggestive text included in the first version has been removed, although the current version does not explicitly state that the baseline shall be changed. As such this is no longer a non-conformance, however the Methodology Developer should consider clarifying this, especially as this was expressed as a concern raised during the public review.	
Observation: 3GT/ERA Inc. should clearly specify that the baseline shall not be changed throughout the project crediting period.	

OBS 07/10	Reference Standard & Requirement: 5.12 Emissions
By defaulting to the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination, the methodology is in conformance with the VCS Standard. However, as the methodology provides little guidance on the correct use of this tool, it may lead to inconsistent application of the buffer determination within equation 51.	
Observation: 3GT/ERA Inc. should consider providing guidance to ensure the correct use of the BR_Y parameter within equation 51.	

OBS 08/10	Reference Standard & Requirement: 2.1 Project boundary
In contrast to the convention of 5 "decay classes," used for example in many of the cited papers (e.g. Harmon et al. 1986), the methodology suggests use of 3 classes. Many project developers will find it difficult to convert existing CWD datasets into this format. Furthermore, to estimate wood density the methodology requires project developers to subsample actual density for at least 10 logs, though the precise methods (e.g. section sampling and dry weight calculation?) are not provided. This approach is not consistent with the more commonly accepted method of identifying species (or if precise I.D. is not possible, then group) and decay class for each log, then estimating biomass using the equations in Harmon et al. (2008, Woody Detritus Density and Density Reduction Factors for Tree Species in the United States: A Synthesis. USDA Forest Service GTR NRS-29). Including Harmon et al. 2008 as an option in the methodology would increase the applicability to a broader array of projects, especially those employing existing CWD inventory databases. On a related note, the methodology consistently references Harmon et al. (1986) for snag and CWD decay related functions, when a more thorough (for some things) and contemporary reference is Harmon et al. (2008).	

Observation: 3GT/ERA Inc. should consider using more recently accepted methodologies for the quantification of carbon stocks in dead organic matter.

OBS 09/10	Reference Standard & Requirement: 2.2 Project boundary
Parameter $A_{BSL,I}$ is not mentioned in section 8 of the methodology where the process for the identification of baseline scenario area is described. Further, the parameter $A_{PRJ,I}$ is not discussed in section 9.1 where the stratification of the project area is discussed.	
Observation: 3GT/ERA Inc. should include reference to the area parameters used in equations within the sections of the methodology that discuss the identification of project area.	

OBS 10/10	Reference Standard & Requirement: 3.3 Baseline approach
It should be noted that immediately above the list of required model criteria in section 8.1 on p.17 the methodology states: "*it is essential to apply the same model in both cases to ensure consistency in the carbon projections."* In this case it may be more appropriate to use more mandatory language such as "Projects shall apply the same model in both…"	
Observation: 3GT/ERA Inc. should consider using stronger language regarding consistent use of models within baseline and project carbon projections.	

OBS 11/10	Reference Standard & Requirement: 3.3 Baseline approach
The methodology suggests ability to calculate values at 1 to 5 year time steps as a model selection standard. However, it should be noted that many models in active use, such as some variants of FVS (which is cited within the methodology as an appropriate model, are actually generating calculations at only 10 year time steps, then averaging to yield 5 year values. So annual and five year values are really no more accurate than the initial 10 year estimates and may not meet the intent of this standard. As the methodology only mandates that models have the ability to generate values on an annual (or less than 5 year) basis, it is not clear if the term generate can apply to those models that do so by averaging 10 year model outputs. Thus, the time step issue remains ambiguous due to internal contradictions between the mandatory criterion number 2 of section 8.1 and the suggested criterion number 9 of section 8.1.	
Observation: 3GT/ERA Inc. should consider adding clarifying language regarding the minimum time step capabilities of models.	

OBS 12/10	Reference Standard & Requirement: 5.19 Emissions
The tables in Sections 12 and 14 have been significantly revised. They now include consistent information for the parameters listed, with one minor exception. On p.58 the parameter tables for $A_{BSL,I}$ and $\Delta C_{,t}$ do not include the row "Used in", which is included in all other parameter tables.	
Observation: 3GT/ERA Inc. should include consistent parameter tables throughout section 12 of the methodology.	

OBS 13/10	Reference Standard & Requirement: 5.19 Emissions
One peculiarity in the tables in Section 12 and 14 is that the "measurement procedure" row is blank for all but a few of the parameters. This seems like a missed opportunity to provide valuable information to project developers, helping them understand and connect the entire process, from measurement, to parameter generation, to use in the equations. It seems inconsistent to provide measurement information for just a handful of parameters, selected for no clear reason, while leaving the rest blank.	
Observation: 3GT/ERA Inc. should include measurement procedures whenever possible in the parameter tables included in section 12 and 14 of the methodology.	

OBS 14/10	Reference Standard & Requirement: 5.20 Emissions
It should be noted that in the first paragraph of section 11.4 the methodology acknowledges potential sources of uncertainty, which is a very useful tool for project developers when assessing high risk areas of uncertainty. However, not included in this list are models, which are a key component of the methodological process for the estimation of GHG emissions reductions and/or removals.	
Observation: 3GT/ERA Inc. should include uncertainty from model predictions in the list of potential sources of uncertainty in the first paragraph of section 11.4.	

2.3 Actions Taken by Company Prior to Report Finalization

This report represents the fourth assessment of the 3GT/ERA Inc. methodology. Following the completion of the first assessment, 3GT/ERA Inc. revised the first methodology to produce v.7.2. Version 7.2 was evaluated by the audit team, and the results of this evaluation are presented in Appendix B of this report under findings from the October 27th assessment.

Following the second assessment, the methodology developer further revised the methodology to produce v. 8.3 of the methodology. Version 8.3 was evaluated by the audit team. The findings from the third assessment of the LtPF methodology are presented in Appendix B of this report under findings from the December 23rd assessment.

Following the third assessment in December 2010, the methodology developer further revised the methodology to produce v9.2 of the methodology. The audit team evaluated v9.2 of the methodology during the final assessment. The findings from the final assessment are presented in Appendix B below of this report under findings from the 04 April 2011 assessment.

3 AUDIT METHODOLOGY

3.1 Assessment Team

Assessor(s)	Qualifications
Jared Nunery, MSci. SmartWood, Carbon Technical Specialist Participated in: *7th September 2010 Assessment* *27th October 2010 Assessment* *23rd December 2010 Assessment* *4th April 2011 Assessment*	Jared has led the technical review of multiple validation assessments for the VCS and CCBA on three different continents. In addition he has participated in two Improved Forest Management methodological assessments for the VCS. Before joining the Rainforest Alliance, Jared worked as a member of the Carbon Dynamics Lab at the University of Vermont, where he conducted research on the effects of forest management on carbon sequestration. Jared has published multiple scientific articles on the impacts of forest management practices on forest carbon dynamics. Jared has presented research and guest lectured on the topic of forest management and forest carbon dynamics at over a dozen scientific conferences and universities both within the USA and abroad. Jared has a B.S. in Environmental Sciences from the University of Vermont and earned his M.Sc. in Forestry from the University of Vermont. Jared has extensive experience in forest stand dynamics, forest carbon dynamics, forest mensuration, GHG quantification, forest growth and yield modelling, and wildlife habitat conservation. In addition Jared is a certified lead auditor with the Climate Action Reserve for Forest and Urban Forest projects.
Matt Delaney, MSci. Delaney Forestry Services, Carbon Forester Participated in: *7th September 2010 Assessment* *27th October 2010 Assessment*	Matt is based in Lebanon, Oregon and has more than 15 years of experience in forest carbon measuring and monitoring. He has been part of the successful implementation of carbon-offset projects for utility companies and environmental organizations in the United States and around the world. He has published nine scientific articles on the subject of carbon accounting and quantifying offsets for forest based carbon strategies He holds a Master's degree in forestry from the University of Illinois and a B.S. in Environmental Studies from SUNY College of Environmental Science and Forestry in Syracuse, NY.

William Keeton, Ph.D. Associate Professor Rubenstein School of the Environment and Natural Resources, University of Vermont Participated in: *27th October 2010 Assessment* *23rd December 2010 Assessment*	Dr. Keeton directs UVM's Carbon Dynamics Laboratory, is Chair of the UVM Forestry Program, and directs the Vermont Forest Ecosystem Management Demonstration Project. Dr. Keeton received his BS in Natural Resources from Cornell University and his Masters in Conservation Biology and Policy from Yale University. He holds a Ph.D. in Forest Ecology from the University of Washington. His current research focuses on forest carbon management including simulation modeling, climate change impacts on forest ecosystems, natural disturbance-based silvicultural systems, late-successional forest dynamics, forest-stream interactions, and temperate forest biodiversity. Dr. Keeton recently served as a Fulbright Scholar in Ukraine and continues to work actively on sustainable forest management both domestically and internationally, with a particular focus on forest sector participation in carbon markets. Dr. Keeton is currently co-chairing the Vermont Climate Collaborative's Working Group on Forestry and Agriculture and is serving on the Vermont Legislature's Biomass Energy Advisory Group. He serves on science advisory boards for The Nature Conservancy, the Intervale Conservation Nursery, Society of American Foresters (Chair, NESAF Silviculture Working Group), the Belgian Earth Observatory Program, IUCN (Commission on Ecosystem Management), IUFRO (Landscape Ecology and Old-growth Working Groups, Deputy Chair), and Science for the Carpathians. He has been a P.I. or Co-P.I. on over 1.8 million in research grants and served as major adviser for 17 graduate students. His record includes 66 publications, including 32 peer-reviewed journal papers.
Adam Gibbon, MSci. Rainforest Alliance Technical Specialist, Climate Program **VCS AFOLU Expert** Reviewed the: *27th October 2010 Assessment*	Adam has led the technical climate change related of ten CCBA validations that are either completed or currently underway. He has also led five VCS methodology assessments, one VCS validation and been involved in one Plan Vivo verification. Adam is a qualified lead auditor for the Climate Action Reserve, and has been appointed to the Plan Vivo Technical Advisory panel. Adam has trained over 100 people in Bali, Rwanda, Spain, and Vietnam in AFOLU project auditing and project development. Recipients of the training included Rainforest Alliance auditors, government officials, private consultants and NGO representatives. Adam has been the lead author of recent Rainforest Alliance publications such as, "Guidance on coffee carbon project development using the (CDM) simplified agroforestry methodology", and "Forest Carbon Project Feasibility Study in Quang Tri Province, Vietnam". He has also had published work peer reviewed scientific journals, for example; Gibbon *et al., 2010;* Ecosystem Carbon Storage Across the Grassland–Forest Transition in the High Andes of Manu National Park, Peru.

	Before joining Rainforest Alliance Adam worked at Oxford University as a researcher. His research emphasized the potential of carbon markets to finance sustainable management of forest resources. Adam earned a distinction on the Environmental Change and Management MSc. Program at Oxford University, winning prizes for his dissertation and overall performance. He was awarded the Sir Walter Raleigh Scholarship at Oriel College, Oxford. He graduated with a first class degree from Durham University, with a BSc in Natural Sciences, specializing in Geology, Chemistry & Geography.
Jeff Hayward, MSci. Rainforest Alliance Director, Climate Program **VCS AFOLU Expert** Reviewed the: *4th April 2011 Assessment*	Jeff is based in Washington, DC, though his work has a worldwide focus, especially in Asia, Africa, Latin America, leading development of a cross-program Program including carbon verification, best practices and standards for climate mitigation and adaptation, climate-oriented capacity building, and facilitation of carbon forestry and agroforestry projects. For nearly six years he managed the Rainforest Alliance forest certification programs in the Asia-Pacific region from Jakarta, Indonesia. In forest certification and carbon verification, he has conducted over 25 forest management assessments and/or audits and over 60 chain-of-custody assessments and/or audits. He has led forest certification awareness training courses in Malaysia, Indonesia, Japan, Fiji, and China. Prior to working for the Rainforest Alliance, he conducted silviculture and ecology research for the University of British Columbia's Alex Fraser Research Forest in Canada. In Oregon, he worked for the U.S. Bureau of Land Management in forest inventory and timber sale administration. For three years he was with the U.S. Peace Corps serving as a community forester in Guatemala in an agroforestry and conservation of natural resources program. Jeff earned an MSci in forestry, (Univ. of British Columbia, Canada); and a B.A. in Latin American development with a specialization on forestry (Univ. of Washington, USA).

3.2 Methodology Assessment Process

The methodology assessment was conducted from Rainforest Alliance offices and those of the contracted consultants. There was desk evaluation, along with phone calls and correspondence within the audit team, as well as with the Proponents.

3.3 Document Review

Document Date	Title, Author(s), Version
28 July 2010	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 7.0
04 October 2010	Improved Forest Management – Logged to Protected Forest (IFM-LtPF)

	on Fee Simple Forested Properties, 3GT and ERA Inc., v. 7.2
11 October 2010	3GT/ERA Inc. Response to VCS Website Public Comments for the proposed methodology: IFM-LtPF on fee simple forested properties
12 October 2010	3GT/ERA Inc. Summary of Responses to Rainforest Alliance Report 1 CAR's and Related Review Comments
07 December 2010	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.3
16 February 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.5
13 February 2011	3GT/ERA Inc. Methodology – Response to Final CARs
16 February 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.6
06 March 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.7
16 March 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.8
17 March 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 8.9
18 March 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 9.0
29 March 2011	Improved Forest Management – Logged to Protected Forest (IFM-LtPF) on Fee Simple Forested Properties, 3GT and ERA Inc., v. 9.2

Appendix A: PROPONENT CONTACT AND DETAILS

1 Contacts

Methodology name:	Improved Forest Management – Logged to Protected Forest (IFM – LtPF) on Fee Simple Forested Properties
Proponent:	3GreenTree Ecosystem Services Ltd. and and Ecosystem Restoration Associates Inc.
Type of organization:	Corporation
Contact person, Title:	Mike Vitt
Address:	3960 Marine Ave, Belcarra, BC.
Tel/Fax/Email:	778-998-5478/no fax/ mike.vitt@3greentree.com
Billing contact:	David Rokoss, Ecosystem Restoration Associates Inc. david.rokoss@eraecosystems.com
Methodology developer:	3GreenTree Ecosystem Services Ltd. and and Ecosystem Restoration Associates Inc.
Type of organization:	Corporation(s)
Contact person, Title:	Mike Vitt
Address:	3960 Marine Ave, Belcarra, BC
Tel/Fax/Email:	778-998-5478/no fax/ mike.vitt@3greentree.com

Appendix B: DETAILED ASSESSMENT FINDINGS TO THE STANDARDS

1 Eligibility criteria

The methodology shall contain eligibility criteria which are appropriate and adequate.

1.1 The methodology shall be for a project type which falls within one or more of the eligible AFOLU project categories as Defined in the VCS Tool for AFOLU methodological issues (See: I. Scope and Applicability)

Findings from First Assessment on 7 September 2010			
The methodology is not in full conformance with the requirements of Section II, Step 1 of the VCS Tool for AFOLU Methodological Issues. Specifically, the methodology is not in conformance with the following requirement: *"Carbon projects encompassing several land-use activities must satisfy the VCS land eligibility requirements for each activity type for which crediting is being sought"* The Methodology Developer refers to the "timber harvesting and related developable land areas" (Page 5, Section 1.5.1). Avoiding development (conversion of forest to non-forest uses) would be a different category of project under the VCS (Reduction in Emissions from Deforestation and Degradation). As this methodology is only applicable for LtPF projects, the conversion of forests to non-forest use is not within the definition of this project type, hence it would not be in compliance with the VCS applicability conditions. (**CAR 01/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 01/10**		

Findings from Second Assessment on 27 October 2010
In the revised methodology, the language referring to "*developable land areas*" has been removed. This methodology now clearly states that it is applicable to both types of LtPF forests, as noted in a revision as per a response to one of the public comments received during the VCS public comment period. The revised methodology now states: "*Projects which meet either of the criteria for VCS Improved Forest Management – Logged to Protected Forest (IFM-LtPF) eligible projects as defined in the VCS Guidance for AFOLU Projects (Voluntary Carbon Standard, 2008a):* *1.1. Protecting currently logged or degraded forests from further logging; and, Page 8* *1.2. Protecting unlogged forests that would be logged in the absence of carbon finance; and,"* Despite conformance with the VCS IFM LtPF project eligibility requirements, the revised methodology includes language that creates ambiguity regarding the definition of project scenario protected forest. The foundation of the LtPF VCS project type is the cessation of forest harvesting on project area lands (note that in the VCS AFOLU Requirements 2011 document states that eligible IFM LtPF projects are defined as "*eliminating harvesting*"). Yet in section 13.2.1 of the methodology it states the following regarding updating of the project area strata as part of ex post monitoring: "*The ex-post stratification shall be updated due to the following reasons:* *1. Unexpected disturbances occurring during the crediting period (e.g. due to fire, pests or disease*

outbreaks), affecting differently various parts of an originally homogeneous stratum;
2. Project forest management activities (cleaning, planting, thinning, harvesting, coppicing, re-planting) may be implemented in a way that affects the existing stratification.
3. Established strata may be merged if reason for their establishing have disappeared."

It is not clear why project forest management activities would include harvesting or coppicing in a protected forest that would affect the existing stratification. It appears that this text was extracted from the Ecotrust methodology, which in turn extracted it from the CDM AR-ACM0001 methodology. The inclusion of these activities in monitoring is a conservative approach to ensure that any losses, as it allows for the inclusion of project reversals from changes in management activities. However, as no definition of a protected forest is provided in Section 3 of the methodology, it creates confusion regarding the applicability of the methodology to other VCS IFM project types. (**OBS 04/10**)

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 01/10 (Closed)** **OBS 04/10**		

Findings from Third Assessment on 23 December 2010			
After further discussion with the Methodology Developers, the issues highlighted around **OBS 04/10** in the previous report were clarified. It is appropriate that the methodology includes the provision in 13.2.1 recognizing the potential for management activities to modify forest structure, thus requiring restratification in some cases. Silviculturally this makes sense because management activities may either reduce or increase heterogeneity among strata, thus necessitating aggregating (lumping) or segregating (splitting) strata into new compartments. The methodology has been revised to include a caveat stating that these data will be used only to reevaluate the calculation of emissions from the project scenario. This is an appropriate use of these data as per monitoring.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

1.2 The methodology shall be compatible with VCS Tool for AFOLU methodological issues in the statement of eligibility conditions. Specifically;

i. "Documented evidence shall be provided in the VCS PD that no ARR or ALM project areas were cleared of native ecosystems within the ten years prior to the proposed VCS project start." (II. Step 1, paragraphs 6)

ii. "In the case of REDD projects, the boundary of the REDD activity shall be clearly delineated and defined and include only land qualifying as "forest" for a minimum of 10 years prior to the project start date." (II. Step 1, paragraphs 7)

Findings from First Assessment on 7 September 2010
In section 1.2 of the methodology, the applicability criteria for the methodology are identified. Within this section, the eligibility criteria are also blended in, however, the eligibility criteria are not

clearly defined. Specifically, section 1.2 states:

"*This methodology is applicable to the area within the project boundary of eligible IFM-LtPF projects, where properties facing logging…."*

It is not clear where the eligibility criteria for IFM-LtPF projects are defined. It is not clear if only those eligibility criteria specific to the VCS are used as a default, if the methodology defines its own eligibility criteria, or if the methodology includes supplementary criteria in addition to those of the VCS. As this is not clearly defined in the methodology, there is no way for project developers to assess their project's eligibility within this methodology.

Within the applicability criteria (see criteria number 1), it states that the methodology is only applicable to those eligible project that qualify as IFM-LtPF projects as defined in the VCS Tool for AFOLU Methodological Issues (VCS, 2008) (**OBS 01/10**). However, the VCS Tool for Methodological Issues does not define eligibility criteria for IFM-LtPF. The VCS Guidance for AFOLU Projects states the following criteria for IFM projects:

"*Activities related to improved forest management are those implemented on forest lands managed for wood products such as sawtimber, pulpwood, and fuelwood and are included in the IPCC category "forests remaining as forests" (see IPCC AFOLU 2006 Guidelines7). Only areas that have been designated, sanctioned or approved for such activities (e.g., as logging concessions or plantations) by the national or local regulatory bodies are eligible for crediting under the VCS Improved Forest Management (IFM) category. Activities to reduce emissions from unsanctioned forest degradation (e.g., illegal logging) is not eligible for crediting under the IFM category, but may be creditable as a Reduced Emissions from Deforestation and Degradation activity (REDD). Various sanctioned forest management activities can be changed that could increase carbon stocks and/or reduce GHG emissions, but only a subset of these activities make a measurable difference to the long-term increase in GHG benefits compared to business-as-usual practices. Improvements in forest management could lead to a potential reduction in the flow of timber off the site, thereby causing leakage through the displacement of logging activity to other forest areas. This leakage must be accounted for using the leakage table provided in the "Tool for AFOLU Methodological Issues"."*

In addition, the VCS Guidance for AFOLU Projects includes specific definition of LtPF forests:

"*Conversion of logged forests to protected forests (LtPF) includes: (1) protecting currently logged or degraded forests and plantations from further logging and degradation; and, (2) protecting unlogged forests that would be logged in the absence of carbon finance. Generally speaking, converting logged forests to protected forests reduces emissions caused by harvesting (i.e., protects carbon stocks) and increases the carbon stock as the forest regrows and/or continues to grow*."

It is not clear how the methodology is in conformance with those eligibility conditions outlined in the VCS Guidance for AFOLU Projects. (**CAR 01/10**)

Additionally, it is not clear if certain areas are excluded from the project area. Exclusions are not defined in section 1.2 where eligibility is discussed, however number three in Section 2.4.1specifies that certain areas (steep slopes, wet areas, etc.) are removed from the stratified project area. These exclusion areas are not defined along with the eligibility criteria, creating confusion in later section of the methodology. (**CAR 01/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 01/10** **OBS 01/10**		

Findings from Second Assessment on 27 October 2010
In the revised methodology, the language referring to "developable land areas" has been removed. The methodology now clearly states that it is applicable to both types of LtPF forest project types, as noted in a revision as per a response to one of the public comments received during the VCS public comment period. Furthermore the methodology defers to the eligibility criteria of IFM LtPF project types of the VCS Standard. As such **CAR 01/10** is now closed. The findings from the first assessment report regarding the blending of applicability conditions and eligibility conditions are still relevant in the revised methodology. For example, in section 3.1 the methodology states: "*Activity shifting is excluded by eligibility, so no additional monitoring is required*." However, as noted in 1.1 above, the revised methodology now defers to those eligibility requirements of the VCS 2007.1 Standard. Section 4 of the methodology describes the applicability conditions. In this section the methodology defers to those eligible projects as defined by the VCS Guidance for AFOLU Projects. By deferring to correct VCS document where the eligibility conditions for IFM LtPF projects are defined, the project now meets the minimum conformance with the VCS standard. The revised methodology now includes the definition of Timber Harvest Land Base (THLB) which is specific, and a reference document from Canada is included as a helpful reference. The definition of THLB lists a number of possible exclusion areas, however this is a suggestive list as the term "may include" is used within the definition, and as such the suggested lists can be included within the THLB. The inclusion of a number of the listed suggested exclusions would result in a direct contradiction to the VCS eligibility requirements (e.g. non-forest clearings and legally required buffered). As such it is not clear how the defined THLB is in conformance with the VCS eligibility requirements for IFM LtPF projects. Furthermore, as the methodology defers to the VCS IFM LtPF eligibility requirements, the current definition of THLB potentially includes non-eligible project areas, as noted above. This results in a potential contradiction within the methodology, where THLB allows for the inclusion of ineligible project areas. (**New OBS 05/10**)

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 01/10 (Closed)** **OBS 05/10**		

Findings from Third Assessment on 23 December 2010
The revised methodology is clear that the exclusion categories listed would apply consistently to all projects, but the land use types actually mapped (or encountered) and excluded will depend on the specifics of each property. Stated another way, the phrasing "may include" indicates that the mix of exclusion areas will vary from project to project as a function of the particular conditions encountered. The methodology includes language qualifying and clarifying how these considerations are to be used in stratification and determination of the area eligible for project inclusion.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

1.3 The methodology shall contain appropriate applicability conditions (e.g. project type, national and regional circumstances / policies, data and resource availability, environmental conditions, past land-use and land use changes, purpose of the activity and practices) that adequately constrain the use of the methodology such that any assumptions made or data inputs required later in the methodology are appropriate.

Findings from First Assessment on 7 September 2010			
Section 1.2 of the methodology lists five applicability conditions. The second applicability condition states that: "*Privately owned and managed fee simple properties with extensive natural or native species forest, where there is a threat of significant logging or related forest management practice where forests remain forests."* This applicability condition is written very vaguely, and does not provide explicit guidance for project developers. Most notably critical terms within the methodology, such as "fee simple properties" are not defined within the methodology. (**CAR 02/10**) Additionally, the use of terms "*extensive*", "threat of significant logging", "*minimal risk*" must be able to be quantified. Applicability conditions must be explicitly clear. By using vague qualifying terms within the applicability condition, it allows the interpretation of the conditions up to the project developers. Applicability conditions must be clear, and able to be validated. (**CAR 03/10**) Furthermore, it should be noted that as no geographical scope is defined for the methodology, it must be assumed that this methodology is applicable for all forest types globally, and as such the methodology must be able to address all legal forest management issues regarding the proof of legal right and intent to harvest as defined by the VCS, have logical process for the quantification of carbon stock emission reductions in all forest types, and a variety of other complex issues created by having a global scope.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 02/10** **CAR 03/10**		

Findings from Second Assessment on 27 October 2010
The revised methodology includes a definition of "Fee simple land" as well as other relevant terms within the methodology. Additionally, the revised methodology includes new applicability conditions. Included within the listed applicability conditions in Section 4 of the methodology are:

"*3. Projects on fee simple or freehold private ownership properties where the project proponent has clear legal representation of estate title rights without legal title encumbrances which prevent the project from proceeding. Term leases, concessions, or equivalent; public ownership lands; and unknown or legally disputed ownerships are excluded; and,*

4. Projects on properties where average annual illegal, unplanned, and fuelwood removals are less than 5% of total annual harvest levels in CO2e terms in the baseline scenario, and as per: Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination - Proposed (Voluntary Carbon Standard, 2010a) have a low rating for:

a. Technical Complexity – a) Number of project activities; and,

b. Technical Complexity – b) Ongoing enforcement; and,…

7. Projects which can demonstrate there will be no leakage through activity shifting to other lands owned or managed by project participants outside the project boundary."

In reference to **CAR 03/10**—"*fee simple*" is defined (Section 3.0) and other applicability terms are clear. However, items like "*legally disputed ownerships*" are ambiguous. If a project is using this methodology and after the project begins, an individual makes a legal land claim and therefore creates a legal dispute, the project could become ineligible under the applicability condition. Furthermore, the process for determining "*legally disputed ownerships*" is placed with the VCSA and Verifiers (see Section 5.1 of the document). It is not clear if the VCSA has the authority to take on that role.

As part of the applicability conditions, illegal logging must be <5% of the total annual harvest levels. If illegal logging is found to occur the project can be ruled ineligible under the applicability conditions in the document. The same is true with applicability condition 7 regarding activity shifting leakage. If either is found to occur, the project becomes ineligible. Currently the VCS does not have a defined process for projects that become ineligible mid-way through a project crediting period due to failure to meet applicability conditions as a result of changes within the project. As such it is not clear how projects should proceed in those scenarios where a project no longer meets the methodology applicability conditions midway through the project crediting period.

Furthermore, in order to complete the methodology, a project proponent must have all of the required inputs within the equations. A majority of the inputs are obtained from literature values or regional values, however at least one parameter requires direct input from the proposed forest management plan (see $f_{HARVEST,l,t}$). However, it is not clear within the applicability conditions that this necessary input for the calculation of baseline carbon emissions is needed (e.g. basic forest management plan requirements). (**CAR 03/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 02/10 (Closed)** **CAR 03/10**		

Findings from Third Assessment on 23 December 2010
The revised methodology states that "projects on fee simple or freehold private ownership properties where the project proponent has clear legal representation of estate title rights without legal title encumbrances which prevent the project from proceeding (section 4.3)." The reference to "clear ownership" is sufficient to address the previous ambiguity regarding contested ownership. It

is implicit under this wording that contested properties would be ineligible, although a sentence explicitly making this point would reduce ambiguity even further.

The methodology was revised to state that illegal harvesting eligibility provision applies only to starting conditions. Also added was a footnote on page 8 requiring inclusion of future non-de minimis illegal or unplanned harvesting in re-verification estimates. However, illegal harvesting is not addressed in the monitoring section. It is thus not clear how illegal or unplanned removals are to be detected and quantified. Will or could this involve remotely sensed data, now commonly used for this purpose? Unanticipated removals would, in theory, be detected by monitoring and could be incorporated into revised carbon stock estimates, but would not necessarily be identified as illegal without specific monitoring designed to do so. While the current approach would probably be adequate for the carbon accounting, it would not explicitly address the issue of whether the project should remain eligible if illegal harvesting exceeds 5%, for which there is significant risk in many regions of the world. (**CAR 03/10**)

Additionally, the revised methodology similarly states in applicability criteria 7 that projects must demonstrate that there is no activity shifting leakage at the start of the project activities. Footnote 4 on p.9 includes guidance that project developers shall follow in the event where activity shifting leakage is detected during the project crediting period. Unlike the case of illegal logging applicability condition, the methodology does include guidance on the monitoring of activity shifting leakage in sections 10.1 and 13.3. As such, **CAR 03/10** is has not been completely addressed, as issues related to the monitoring of illegal logging related to applicability condition 4 have not been fully addressed.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 03/10**		

Findings from Final Assessment on 04 April 2011			
The revised methodology includes additional guidance on how carbon stock losses from illegal, unplanned and fuelwood removals will be monitored. Section 13.2 has been revised to require remote and ground-based monitoring to identify and update inventory data for unplanned man-made disturbances. The revisions were found to be sufficient to clearly define the applicability conditions of the methodology, and as such **CAR 03/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 03/10 (Closed)**		

2 Project boundary:

The methodology shall contain an appropriate and adequate approach for the definition of the project's physical boundary and sources and types of gases included.

2.1 The methodology shall provide a methodological procedure for identifying and assessing GHG sources, sinks and reservoirs (SSRs) controlled, related to, or affected by the project. The methodology shall include guidance for the identification and assessment of GHG sources, sinks and reservoirs as being:

i. controlled by the Project Proponent:

ii. related to the GHG project; or

iii. affected by the GHG project. (VCS 2007.1, S6.2).

iv. if necessary, explain and apply additional criteria for identifying relevant baseline GHG sources, sinks and reservoirs; and compare the project's identified GHG sources, sinks and reservoirs with those identified in the baseline scenario. (VCS 2007.1, Section 6.2)

Findings from First Assessment on 7 September 2010

The methodology defines the applicable carbon pools in Table 1 on p.4 of the methodology. It should be noted that the 24 May2010 VCS Program Update includes the following guidance for AFOLU projects:

Table 1: Carbon pools to be considered for different AFOLU project activities

		Living Biomass			Dead Organic Matter			
		Above ground trees*	Above ground non-tree*	Below-ground	Litter	Dead wood	Soil	Wood products
ARR*		Y	O	Y	O	O	O	O
ALM		Y	N	O	N	N	Y	O
IFM	Conventional logging to RIL: a. with no effect on total timber extracted	Y	N	O	N	Y	O	N
IFM	b. with >25% reduction in timber extracted	Y	N	O	N	Y	O	Y
IFM	Convert logged to protected forests	Y	N	O	N	Y	O	Y
IFM	Extend rotation age	Y	N	O	N	O	N	O
IFM	Conversion of low productive forests to productive forests	Y	N	O	N	O	N	O
REDD	Planned or unplanned conversion of forest to non-forest, with final land cover of annual crop	Y	O	O	N	O	O	Y
REDD	Planned or unplanned conversion of forest to non-forest, with final land cover of pasture grasses	Y	O	O	N	O	N	Y
REDD	Planned or unplanned conversion of forest to non-forest, with final land cover of perennial crop	Y	Y	O	N	O	N	Y

For ARR and ALM projects, instead of "Above ground trees" and "Above ground non-tree", these two pool categories should read "Above ground woody" and "Above ground non-woody" respectively.

Y: *pool shall be included in the baseline and monitoring plan for the project*

N: *pool need not be measured because it is not subject to significant changes or potential changes are transient in nature*

O: *pool is optional: it shall be included if its carbon stock is significantly reduced by the project[6]; and may be included if its carbon stock is significantly increased by the project*

Such clarifications with respect to this program update are effective from 24 May 2010.

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[5] *Carbon pools and emissions sources deemed insignificant by the CDM EB for CDM A/R projects may be deemed insignificant for VCS ARR projects.*

[6] *The **sum** of decreases in carbon pools and increases in GHG emissions that may be neglected (i.e., considered "insignificant") shall be less than 5% of the total CO_2-eq benefits generated by the project. The following CDM EB tool can be used to test the significance of emissions sources - http://cdm.unfccc.int/EB/031/eb31_repan16.pdf.*

Specifically, for aboveground biomass, non-tree biomass and litter are not included for LtPF projects. In this methodology, non-tree biomass and litter are included (see equation E 3.2.1).

Additionally, the methodology does not provide complete definitions of "Dead organic matter", "snags", "standing dead biomass", and "coarse woody debris". Coarse woody debris is typically 10 cm in diameter and larger. Material <10 cm is usually considered "fine" woody debris. However, the methodology defines Coarse Woody Debris as anything >1 cm in diameter. Further, coarse wood debris is typically branches, logs, bark, and other woody material on the soil surface but Methodology Developer indicates it includes "dead roots and shoots" or "Large roots". In some cases, "Large woody debris" (page 17—BDW_{perm}) is used instead of "coarse". As relevant terms used are not defined, confusion regarding the application of these pools is created. (**CAR 02/10**)

Furthermore, as no guidance is provided on the calculation of AGB_i or BGB_i it is not clear which carbon pools are included in these parameters. (**CAR 04/10**)

Finally, it is not clear how soil carbon, an optional pool in this methodology, would be quantified. Section 2.4.4.1.13 states that it is considered an optional pool, however, as no guidance on the quantification of carbon stocks on this pool is provided, it is not clear how project developers interested in including soil carbon would do so. (**CAR 05/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 02/10** **CAR 04/10** **CAR 05/10**		

Findings from Second Assessment on 27 October 2010			
Table 1 (Section 5.4) of the revised methodology includes clear descriptions of those carbon SSRs to be measured. The identified pools are now in conformance with the 24 May 2010 VCS Program update. Specifically, aboveground non-tree biomass and the litter pool are excluded. Additionally, definitions on the criteria for dead organic matter (DOM) and snags are provided in Section 8.2.3. As these definitions are derived from common practice and peer reviewed studies, they are found to be sufficient guidance for the identification and definition of these carbon pools. Soil carbon pools are no longer included as an optional pool. As such, it is no longer required that equation logic leading to the quantification of the soil carbon pool is required. However, please see findings in Section 2.4 below regarding the calculation of emissions from non-CO_2 gasses. Additionally, it should be noted that Table 1 explicitly identifies belowground carbon as a pool to be included, however the methodology repeatedly refers to BGB_i as "*if selected as per Table 1*". It is not clear why the methodology includes this caveat if this is a required pool. Furthermore, in the calculation of DOM, the methodology refers to the use of the line intercept method for the field inventory of lying dead wood, including minimum diameter requirements for down wood. However, it is not clear how these input variables are incorporated into the DOM equations. Additionally, the parameter tables in Section 14 three parameters to be measured in the field (L, $D_{n,l,t}$, and N) regarding the calculation of lying dead wood, however it is not clear how these parameters, or any field inventory data is used to estimate DOM. (**CAR 05/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 02/10 (Closed)** **CAR 04/10 (Closed)** **CAR 05/10**		

Findings from Third Assessment on 23 December 2010
Section 13.2 has been revised to present greater detail on how DOM and other monitoring data will be used for comparison against modeled estimates for error determination. Additionally, the methodology has been significantly revised in respect to how below ground biomass is described, and ambiguous references related to possible exclusion as noted in the findings from the previous report, have been removed. The methodology is sufficient in this respect and **CAR 05/10** is closed. However, another issue is the methodology's use of "density classes." In contrast to the convention of 5 "decay classes," used for example in many of the cited papers (e.g. Harmon et al. 1986), the methodology suggests use of 3 classes. Many project developers will find it difficult to convert existing CWD datasets into this format. Furthermore, to estimate wood density the methodology requires project developers to subsample actual density for at least 10 logs, though the precise methods (e.g. section sampling and dry weight calculation?) are not provided. This approach is not consistent with the more commonly accepted method of identifying species (or if precise I.D. is not possible, then group) and decay class for each log, then estimating biomass using the equations in Harmon et al. (2008, Woody Detritus Density and Density Reduction Factors for Tree Species in the United States: A Synthesis. USDA Forest Service GTR NRS-29). Including Harmon et al. 2008 as an option in the methodology would increase the applicability to a broader array of projects, especially those employing existing CWD inventory databases. On a related note, the methodology consistently references Harmon et al. (1986) for snag and CWD decay related functions, when a

more thorough (for some things) and contemporary reference is Harmon et al. (2008). (**OBS 08/10**)			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 05/10 (Closed)** **OBS 08/10**		

Findings from Final Assessment on 04 April 2011			
The revised methodology remains in conformance with this requirement. Further, additional text has been added to section 13.3 of the methodology in footnote 43, which includes reference to Harmon et al. 2008.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

2.2 The methodology shall be compatible with the VCS Tool for AFOLU methodological issues, providing steps to define the project boundary in terms of:

i. The geographic boundary within which the project will be implemented;

ii. The project crediting period;

iii. The sources and sinks, and associated types of GHGs (i.e., CO_2, N_2O, CH_4), the project will affect; and

iv. The carbon pools that the project will consider, in accordance to the particular project type and Table 1, in step 3 of the VCS Tool for AFOLU Methodological Issues and ensuring they are appropriate in the context of the applicability conditions and the determination of project GHG emissions and baseline net GHG emissions.

(II. Step 2 Determine the Project Boundary and 3 Determine the Carbon Pools)

Findings from First Assessment on 7 September 2010			
The methodology defines the process for the establishment of the project boundary in section 2.1 on p.6. The "project boundary is set to the property boundary(s) where the legal fee-simple clear title can be determined". As the process for "*determining*" the legal fee-simple clear title is not described, it is not clear how the project boundary is defined. Furthermore, as "legal fee-simple" is not defined, it is not clear how this term would apply globally to varying types of land tenure. (**CAR 02/10**). Furthermore, the parameter A_{TOTAL} is used throughout the methodology in multiple equations (for example see Eqns. 3.2.3 and 3.2.8) and similarly $A_{HARVESTi}$ is also used throughout the methodology (see Eqn. 3.2.15). However, no equation is provided for the calculation of these critical parameters. $A_{HARVESTi}$ is defined in equation 3.2.6 on p.13; however, it is not clear how this area is calculated. The stratification of the timber harvesting land base is described in section 2.4.1 on p.8, where multiple criteria are included specifying those areas to be identified and excluded. However, clear guidance on the quantification of the harvest area (and also project area) is not provided within the methodology. Specifically, should projects use remotely sensed data, field measurements, etc.? Additionally, it is not clear how the stratified data should be summed to calculate the project area. (**CAR 06/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 06/10**		

Findings from Second Assessment on 27 October 2010			
The revised methodology describes the process for identifying the project boundary in Section 5. In Section 5.1 the methodology sites that the spatial project boundaries shall be defined by project proponent maps and legal land descriptions within legal property boundaries owned by the project proponent (this is linked to the fee simple land ownership within the applicability criteria). Section 12 of the methodology describes the source of $A_{BSL,I}$ as "*GPS coordinates and/or remote sensing and/or inventory records*". Furthermore, the source of $A_{PRJ,I}$ is described in Section 14 as "*monitoring of strata and stand boundaries shall be done preferably using a Geographic Information System (GIS), which allows for integrating data from different source (including GPS coordinates and Remote Sensing data).*" Additionally, Section 5.2 defines the temporal project boundaries in conformance with the VCS Guidelines for AFOLU projects, as 20 to 100 years. Section 3 of the methodology includes a definition of THLB, which is described as a "*sub-set or primary stratification which allows the carbon calculations to focus on eligible baseline activity areas…*" However, the methodology does not provide a clear link between THLB and the use of the project area parameters ($A_{BSL,I}$ and $A_{PRJ,I}$). As such it is still not clear what the process is for the calculation of the project area. (**CAR 06/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 06/10**		

Findings from Third Assessment on 23 December 2010			
The methodology has been revised to clarify the linkage between THLB and project parameters (see Sections 8 "Baseline Scenario Area Stratification" and 9.1). The approach for calculating project area is clear and well explained. Areas to be excluded are similarly clearly identified, as such **CAR 06/10** is closed. However, it should be noted that the parameter $A_{BSL,I}$ is not mentioned in section 8 of the methodology where the process for the identification of baseline scenario area is described. Further, the parameter $A_{PRJ,I}$ is not discussed in section 9.1 where the stratification of the project area is discussed. (**OBS 09/10**)			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 06/10 (Closed)** **OBS 09/10**		

Findings from Final Assessment on 04 April 2011			
The revised methodology remains in conformance with this requirement. Additionally, the revised methodology now references parameter A_{BSL} in section 8 "Baseline Scenario Area Stratification", and A_{PRJ} is referenced in section 9.1. The addition of these references was found to add clarity to the methodology.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

2.3 The methodology shall, provide steps to account for N_2O emissions, unless insignificant[1], if any nitrogen fertilizer and/or manure are applied, or N-fixing species

[1] Certain GHG sources may be considered "insignificant" and do not have to be accounted for if together such omitted decreases in carbon pools and increases in GHG emissions amount to less than 5% of the total CO_2-eq benefits generated by the project.

planted, during the crediting period. Note that; Reductions of N_2O and/or CH_4 emissions are eligible for crediting if in the baseline scenario the project land would have been subject to cattle grazing and/or nitrogen fertilization, and/ or if fire would have been used to clear the land or constitutes a cause of forest degradation. (II. Step 3 Determine the Carbon Pools, paragraphs 10 & 11)

Findings from First Assessment on 7 September 2010			
The methodology includes in Table 2 on p.5, a list of those GHG gasses that must be included. CH_4 and N_2O are included as optional pools, however the methodology does not include guidance on how to include these non-CO_2 gasses in the case where project developers are interested in including them. (**CAR 07/10**) It should be noted that the 24 May 2010 VCS Program Update states: "*Emissions of N2O from project activities within the project area, including from application of all N-containing soil amendments (e.g., inorganic fertilizer, organic fertilizer, manure and plant residues), and N2O emissions caused by microbial decomposition of any plant material including trees, shrubs, and herbaceous vegetation that fix nitrogen, may be considered insignificant for ARR, IFM and REDD projects and do not have to be accounted for. Emissions of N2O shall be accounted for in ALM projects, unless insignificant, if any nitrogen fertilizer and/or manure is applied, or N-fixing species are planted, during the crediting period. Emissions from removal or burning of herbaceous vegetation, fossil fuel combustion from transport in project activities and collection of non-renewable wood sources for fencing of the project area may be considered insignificant for ARR, IFM and REDD projects and do not have to be accounted for."* Further, the methodology does not define *de minimis*, nor does it provide a process for the quantification of significance or define a materiality threshold to be used by project developers when calculating significance. The project does not reference tools for the calculation of significance, nor does it include a process to do so, and as such it is not clear how significance is quantified. It should be noted that the VCS standard references tools that can be used for the calculation of significance. (**CAR 08/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 07/10** **CAR 08/10**		

Findings from Second Assessment on 27 October 2010			
The revised methodology now includes a definition of the term *de minimis*, as well as includes guidance in footnote three for the use of the CDM Tool for Testing Significance of GHG Emissions in A/R CDM projects v1.0. As such CAR 08/10 is now closed. Additionally, the methodology includes GHG gasses related to the use of fertilizers as an optional pool for the inclusion in the project boundary (pending the results of the application of the *de minimis* rule). The methodology does not include equations for the inclusion of non-CO_2 GHG as a result of fertilizer use. Hence the findings from the previous report are still applicable. As such, it is not clear how project developers could include this pool if desired and found to be non-*de minimis*. (**CAR 07/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 07/10** **CAR 08/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
The revised methodology now excludes the fertilizer pool and emissions from non-CO_2 GHG emissions, thus rendering **CAR 07/10** moot. While this change may in some circumstances cause projects developed under this methodology to miss an important source of emissions, fertilizer use in temperate forest operations is increasingly rare. But there are exceptions, such as the U.S. Southeast. However, the methodology now addresses this problem by adding an eligibility provision excluding operations with significant fertilizer use.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 07/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

3 Baseline approach:

3.1 The baseline scenario shall set out the geographic scope as applicable to the methodology. (VCS 2007.1, Section 6.3)

Findings from First Assessment on 7 September 2010			
Version 7.0 of the methodology does not include a geographic scope, and as such all baseline geographic scopes are applicable. However, as noted in 1.3 above, as the methodology is not restricted geographically, it must then provide a process for the conservative estimation of VCUs across all forest types, in all countries.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Second Assessment on 27 October 2010			
The geographic scope is now defined and limited to Temperate and Boreal forests. Additionally, these forest types are defined in Section 3 of the methodology, as well as guidance offered in section 4 as part of the applicability criteria.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

3.2 The methodology shall provide a procedure for the selection of most conservative baseline scenario. This shall reflect what most likely would have occurred in the absence of the project. (VCS 2007.1, Section 6.3)

In doing so, the methodology shall provide guidance for the selection or establishment of criteria and procedures for identifying and assessing potential baseline scenarios considering the following:

i. the project description, including identified GHG sources, sinks and reservoirs;

ii. existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project;

iii. data availability, reliability and limitations;

iv. other relevant information concerning present or future conditions, such as

v. legislative, technical, economic, socio-cultural, environmental, geographic, site specific and temporal assumptions or projections.

Findings from First Assessment on 7 September 2010			
The methodology explains the selection process for the most plausible baseline scenario in section 2.2 on p.7. The methodology states: "*The baseline scenario is determined by projecting the likely harvesting development plans for a typical acquiring entity or expected shift in landowner forest management practices; where the baseline scenario private landholder is market driven and therefore looking to maximize the opportunity to recover investment capital efficiently and/or generate ongoing typical financial market return on investment over time."* However, the methodology does not provide clear guidance on the selection of the most plausible baseline scenario, but rather provides high level guidance on the considerations when projecting management practices. This is not in conformance with the VCS standard that requires methodology to provide a process to analyze existing and all other likely land use scenarios to assess the most likely future land use within the project area, relative to all other likely land uses. The methodology must provide guidance on the selection of the most plausible baseline scenario. (**CAR 09/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10**		

Findings from Second Assessment on 27 October 2010
The methodology does not provide clear guidance on the baseline selection in order to identify the most "plausible" scenario. The methodology suggests that project developers "may" use the VCS Tool for Demonstration and Assessment of Additionality; however this is not a requirement of the methodology for the selection of baseline. And as no alternatives are provided, and a framework for the identification and subsequent assessment of barriers is not provided, the methodology does not provide substantive detail outlining the identification of the most "plausible" baseline scenario. The three step process to select a baseline involves one of three options 1) using historical data, 2) selecting a common practice baseline (determined by undefined "market base financial return

expectations" like NPV, and IRR or 3) the investment or barrier analysis requirements of the VCS. This process lacks clear guidance on which one of the three should be selected. Furthermore, the process as described on page 12, "Step 2a, 1.3" refers to "Steps 3-1a and 3.1b below" but there is no "Step 3-1a or 3.1b" in the document (above or below). The only reference with "3" is a section on additionality.

The process also makes distinctions between "*existing*" landowners and "new" landowners and establishes different criteria for establishing the baseline. If it is an "existing" landowner, a "*forward-looking management plan*" can be used, but the definition of a "*forward looking management plan*" is absent, including the minimum elements and time frame that should be used. The other baseline criteria under this process are that management plans can be "*reasonably demonstrated to have not been developed or significantly influenced by the intention to create a carbon project*". This is ambiguous and offers no guidance to a user of the methodology on what would qualify as "*forward looking*" or "*reasonably demonstrated*". (**CAR 09/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10**		

Findings from Third Assessment on 23 December 2010			
The methodology has been revised to include a more clear decision tree guiding baseline selection. The re-structuring of the baseline selection decision tree removes previous ambiguity identified in the second assessment report. Additionally, specific criteria (e.g. ownership for < 5 years) have been added defining the ownership standard. These criteria are clear and sensible. The use of ambiguous terminology such as "plausible" and "may" has been removed. Project developers will find this section easy to understand; implementation will be consistent. These revisions are sufficient to close **CAR 09/10**.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 09/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
Section 6 of the methodology which outlines the procedures for determining the baseline scenario, has been furthered revised. The revised methodology includes more specific guidance for projects selecting step 2C The Common Practice Baseline Scenario – based on new owner activities. Specifically, the revisions include additional guidance as safeguards against the selection of non-credible baseline activities (see 2c.2.c p.14). Additionally, following discussions with the first validator and the VCSA, the provisions allowing for the use of a forward looking management plan as an alternative to historical harvesting records (steps 2.a.2 and 2.a.3 in v8.5 of the methodology) have been removed. The revisions to the baseline selection criteria were found to be in conformance with the VCS 2007.1 standard, and increase the clarity of the step-wise process for the selection of the most plausible baseline scenario.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

3.3 In defining the process for developing the baseline scenario, the methodology shall ensure that the selection of assumptions, values and procedures will help to ensure that

GHG emission reductions or removal enhancements are not overestimated. (VCS 2007.1, Section 6.3)

Findings from First Assessment on 7 September 2010
In section 2.2 on p.7 the methodology states: "*All projections and assumptions for the most plausible scenario must be based on reasonable and conservative rationale and analysis; and demonstrated with relevant evidence, documentation, and analysis.*" It is the role of the methodology to outline those assumptions which are acceptable, and provide a clear explanation and justification of those assumptions, followed by a process to apply the assumptions when calculating estimated baseline emissions. The methodology does not provide such a process, or description of assumptions, but rather defaults to the project developer, which is not appropriate. The methodology does not provide sufficient guidance for procedures to assess potential baseline scenarios. The VCS standard requires the following of IFM projects; *"IFM project developers using a project-based approach (rather than a performance benchmark) for establishing a baseline must provide the following information to prove that they meet minimum baseline standards for improved forest management projects:* • *A documented history of the operator (e.g., operator must have 5 to 10 years of management records to show normal historical practices). Common records would include data on timber cruise volumes, inventory levels, harvest levels, etc. on the property; and* • *The legal requirements for forest management and land use in the area; however if these are not enforced then this requirement does not have to be met; and* • *Proof that their environmental practices equal or exceed those commonly considered a minimum standard among similar landowners in the area.* *The baseline for the IFM project is then the without-project management practices projected through the life of the carbon project, satisfying at a minimum the three standards given above."* Section 2.2 does not present a process that meets the requirements of the VCS standard regarding IFM projects using a project-based approach for the estimation of avoided emissions from the implementation of the proposed carbon project. Additionally, it should be noted that Step 2.a 1.3.d on p.12 includes a reference to Step 3-1a and 3-1b above, however these sections do not exist. (**CAR 09/10**) Furthermore, the methodology suggests that growth and yield models can be used to project carbon stock changes in the baseline scenario. Section 2.4.1 provides guidance on the selection of appropriate models (see bottom of p.9), however, this guidance is not sufficient. The methodology does not provide a clear process for the selection of appropriate models, variables, model parameterization, use of model outputs, & regional calibration elements. Assumptions are inherent to all modeling processes, however the methodology does not present a process for evaluating those assumptions inherent to the modeling of carbon stocks. (**CAR 10/10**) This issue is further complicated through the multiple pathways that can be used to estimate aboveground biomass (see description of AGB_i and BGB_i on p.14). The use of multiple pathways leads to possible non-conservative estimates of carbon stocks. For example, the Methodology Developer indicates that in temperate and boreal forests (page 11) several growth and yield models are available, but Biomass Expansion Factors will need to be applied to calculate carbon.

However, some growth and yield models (e.g. FVS and FPS) make whole-tree carbon calculations internally and produce carbon estimates without the need for application of a BEF.

In addition (page 14) the methodology refers to two different approaches to estimating forest carbon, either 1) calculating individual ratios for non-tree bole portions of a tree (branches, foliage, etc.), or 2) a BEF which often uses growing-stock volume (on a per acre or per hectare basis) as an input variable. Both approaches are entirely valid (and published in the scientific literature) but they are different and can be expected to produce different carbon values. If for example, the baseline scenario carbon stocks use "component ratios" of individual trees to estimate baseline carbon stocks but the project's carbon stocks use a BEF approach, any differences in the two modeled scenarios could be a function of differences in the equations rather than actual VCU's. Hence the use of multiple pathways to estimate fundamental parameters that ultimately lead to the derivation of VCUs, must include mechanisms and procedures to account for the differences between these varying approaches. (**CAR 11/10**)

Additionally, the methodology does not provide clear guidance regarding the source and/or derivation of all parameters used in equations. For example, on p.14. E.3.2.7 the parameters $f_{ACTUALi}$ and $f_{FUELWOODi}$ are used to calculate $LB_{FUELWOOD}$. However, it is not clear where these parameters are derived, or if they are default values. Table 5 on p.36 describes the source of this parameter as measured by aerial, field. The methodology does not provide guidance on how to measure this parameter. (**CAR 12/10**)

Additionally, it is not clear what the units of $f_{ACTUALi}$ are, as this information is not included in Table 5. As it is not clear within the table, it is not certain if this is a unit less fraction, or if the parameter should have units associated with it. Since this equation (and many others in the document) use a combination of dry matter, tonnes, carbon, & proportions it is difficult to determine if they are correct or not. For example, E.3.2.7 $-LB_{FUELWOOD}$ units are not defined. $A_{HARVESTi}$ is in hectares, AGB_i & BGB_i are tones (though tones of what is not specified), $1-f_{ACTUALi}$ & $f_{FUELWOOD}$ are proportions. For many of these parameters, the methodology does not provide sufficient detail and literature references as to how they are to be obtained. (**CAR 12/10**) Therefore, there is no assurance that they are conservative or adequate.

Table 3 on page 21 offers examples of multiple parameters that could be used, however it is not implicit if these values should be used as default values, and if so how these values would be conservative across the global geographic scope of the methodology.

Furthermore, Table 4 on page 22 provides default values for several parameters, however it is not clear how these are conservative globally. Specifically, milling efficiencies which vary drastically by country and region. All of these factors influence the baseline calculation and result in ambiguity and potentially non-conservative estimates of baseline emissions. (**CAR 11/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10** **CAR 10/10** **CAR 11/10** **CAR 12/10**		

Findings from Second Assessment on 27 October 2010
<u>Selecting plausible baseline scenarios:</u>

As noted in the findings from the first assessment, the VCS require three minimum baseline standards for project-based IFM projects. Section 6 of the revised methodology describes the approach for the selection of the baseline scenario. Step 1 of this procedure mandates that all identified baseline scenarios must at a minimum:

"*1. Comply with IFP-LtPF project and eligibility requirements by only including activities and areas where forests remaining forests;*

2. Comply with legal requirements for forest management and land use in the area, "unless verifiable evidence can be provided demonstrating that common practice in the area does not adhere to such requirements" (Voluntary Carbon Standard, 2008a);

3. Demonstrate that the "projected baseline scenario environmental practices equal or exceed those commonly considered a minimum standard among landowners in the area" (Voluntary Carbon Standard, 2008a);"

The latter two criteria ensure conformance with 14.b and c of Step 4 of the VCS Tool for AFOLU Methodological Issues. Further, Step 2.a stipulates in requirement 1.1 that the current property owner retains ownership of the property and has at least 5 years of historical harvest level data history. As an alternative to the historical baseline scenario, the methodology allows the use of the common practice baseline scenario (see Step 2.b and 2.c). Step 2.b does not require the use of historical data for the establishment of the most plausible baseline scenario.

Furthermore, Step 2.c of the methodology refers to the VCS 2011 Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (see footnote 8), however it is not clear where the VCS document states the citation. Further, as the VCS 2011 documents are not yet approved, it is possible that these documents will change prior to finalization and as the Methodology Developers should take care when citing these documents (**OBS 01/10**). Step 2.c includes qualitative requirements to "*reasonably demonstrate*" the application of the common practice scenario. However, the audit team has found that "*reasonable demonstration*" is too ambiguous, and as no historical management plans are required (as per VCS IFM requirements), the qualitative parameters are not sufficient evidence to validate the plausibility of the common practice baseline scenario.

Within the procedures outlined in Section 6, it is not clear how this process should be used by project developers to identify the most plausible baseline scenario (see findings from 3.2 above). The process includes a variety of options that project developers can use, but provides little guidance on how to identify which of the options is the most plausible. (**CAR 09/10**)

<u>Modeling baseline scenarios:</u>

Additionally, the revised methodology includes guidance on the use and selection of models to be used within the methodology in section 8.1. However, this section does not include requirements on the model outputs. Specifically, it is not clear in what form model outputs are required to input into the equation logic (e.g. carbon pools and units on annualized timesteps). This is a critical component to be considered when selecting a model that will be applicable for use within the proposed methodology. Section 8.1 does include a listing of three requirements of models which is found to be appropriate, with the exception of the lack of guidance on required model outputs. (**CAR 10/10**)

<u>Use of BEFs in baseline scenarios:</u>

$AGB_{i,t}$ is a critical input variable derived from other the use of simulation models or BEF equations. Section 8.1 describes the selection and use of simulation models for the derivation of $AGB_{i,t}$, and for the use of BEF the methodology defers to Ecotrust, 2010. The Ecotrust methodology referenced includes a method for the use of BEFs to derive carbon estimates from inventory data (see step 5.1.1.A BEF Method Step 1 through 4). In this case the proposed methodology defers to Ecotrust guidance for the conversion of volume estimates from model outputs, not inventory data. Further the reference to the Ecotrust methodology does not address the findings noted in the previous findings. The findings from the first assessment are still applicable, as the use of different methods for the derivation of $AGB_{i,t}$ may lead to non-conservative estimates of VCUs. This is particularly true as the methodology does not stipulate if the input sources (e.g. model outputs or inventory data) to $AGB_{i,t}$ must remain constant throughout the baseline and project, as well as all *ex post* monitoring (e.g. there are no firewalls to prevent a project developer from changing between the BEF method and simulation model to select the use of the most non-conservative input), as such it is not clear how this method leads to a conservative estimation of the baseline emissions or project emission reductions. (**CAR 11/10**)

Parameter units:

The methodology now clearly identifies most parameters that require derivation from literature sources and/or regional calculations. Additionally, the units related to all "f" variables are clearly identified as unit-less ratios, as such this closes this aspect of **CAR 12/10**. However multiple parameters are not clearly defined within the methodology (see findings in 8.1 below).

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10** **CAR 10/10** **CAR 11/10** **CAR 12/10 (*Partially* Closed)**		

Findings from Third Assessment on 23 December 2010

Selecting plausible baseline scenarios:

As noted in 3.2 above, the text added in response to **CAR 09/10** sufficiently resolves this issue.

Modeling baseline scenarios:

The methodology has been revised to describe the required model outputs. Section 8.1 of the revised methodology includes a list of mandatory requirements of models to be used in tandem with the methodology. Additionally, this section includes an optional list of guidance criteria to further identify appropriate models. The additional guidance provided in section 8.1 was found to be sufficient to close **CAR 10/10**.

It should be noted that immediately above the list of required model criteria in section 8.1 on p.17 the methodology states: "*it is essential to apply the same model in both cases to ensure consistency in the carbon projections."* In this case it may be more appropriate to use more mandatory language such as "Projects shall apply the same model in both…" (**OBS 10/10**)

It is questionable whether, as the methodology maintains, process models are inherently more accurate than empirical models for stand level carbon projections. The methodology lists the CO2Fix model as an example of an accurate process model despite its known and very considerable limitations, which include user required parameterization of just about everything in the model, rendering model output only as good as the information used to construct a particular

scenario. Thus it does not seem appropriate to designate one kind of model as preferable but rather should suggest standards for determining model accuracy/suitability, such as existence of validation studies and availability of regionally calibrated model variants. For instance, models incorporating regionally specific disturbance sub-routine might be preferable to models that do not simulate or account for disturbances.

The methodology suggests ability to calculate values at 1 to 5 year time steps as a model selection standard. However, it should be noted that many models in active use, such as some variants of FVS (which is cited within the methodology as an appropriate model, are actually generating calculations at only 10 year time steps, then averaging to yield 5 year values. So annual and five year values are really no more accurate than the initial 10 year estimates and may not meet the intent of this standard. As the methodology only mandates that models have the ability to generate values on an annual (or less than 5 year) basis, it is not clear if the term generate can apply to those models that do so by averaging 10 year model outputs. Thus, the time step issue remains ambiguous due to internal contradictions between the mandatory criterion number 2 of section 8.1 and the suggested criterion number 9 of section 8.1. (**OBS 11/10**)

Use of BEFs in baseline scenarios:
The text has been revised sufficiently to address **CAR 11/10**, removing references to alternate methods such as the Ecotrust methodology, and clarifying carbon stock calculation methods. Sufficient guidance on the application of BEFs is now incorporated into the methodology.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10 (Closed)** **CAR 10/10 (Closed)** **CAR 11/10 (Closed)** **OBS 10/10** **OBS 11/10**		

Findings from Final Assessment on 04 April 2011			
The revised methodology remains in conformance with the VCS 2007.1 standard. Additionally, the revised methodology includes specific guidance in section 8.1 that the same model must be used for both the baseline and project scenarios. Section 8.1 has also been revised to note that intervals within model time-steps shall not exceed 10 years, to allow for the use of the US FVS model. The revisions to section 8.1 of the methodology were found to be in conformance with the revised methodology, and ensure clear and consistent application of the methodology.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

3.4 The methodology shall be compatible with the project type specific rules on baseline development specified in the VCS Tool for AFOLU methodological issues (See: II. Step 4, Establish a Project Baseline, paragraphs 13 - 16)

Findings from First Assessment on 7 September 2010			
The Methodology Developer does not provide a clear process for the selection of appropriate models, variables, outputs, and regional calibration elements and there is ambiguity in how to determine a project baseline. The VCS IFM minimum requirements are noted in 3.3 above, as described in this section the methodology are not in conformance with the required criteria of the VCS standard. (**CAR 09/10**)			
Conformance	Yes ☐	No ☒	N/A ☐

CAR/OBS	**CAR 09/10**

Findings from Second Assessment on 27 October 2010			
The baseline selection process has been improved, and is more clearly defined, including VCS IFM minimum requirements (Section 6). The process however, is confusing and lacks clarity (as noted in 3.1 above).			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 09/10**		

Findings from Third Assessment on 23 December 2010			
The baseline selection process in the revised methodology is clear. The methodology presents understandable standards for determining preference and applicability of different baseline selection approaches. These are presented in a clearly ranked order, with suitability criteria specified as needed. As such **CAR 09/10** is closed. Section 8.1 presents detailed model selection criteria, however several minor issues were identified in section 3.3 above.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 09/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology was found to be in conformance with this requirement. In addition, revisions to section 8.1 addressed previous minor issues identified in the 23rd December 2010 assessment report.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

3.5 The methodology shall estimate the baseline net GHG emissions and removals for each year of the proposed crediting period. (II. Step 4, Establish a Project Baseline, paragraph 17)

Findings from First Assessment on 7 September 2010
The methodology includes a process to estimate carbon emissions from the baseline scenario, however it is not clear how time is incorporated into the baseline equations. Many of the carbon values are annualized (see E.3.2.10), however, as not all parameters included within the calculations are annualized (see AGB_i and BGB_i) it is not clear how time is factored into equations. It is not clear if the baseline is estimated for each year of the crediting period. (**CAR 11/10**) Additionally, further discrepancies within the equations used to estimate baseline carbon stocks create further ambiguity. For example: • P. 17 $f_{BUCKINGLOSS}$. Methodology states, "*This proportion might be specific to each forest type*". This is ambiguous and leaves the Methodology open to interpretation by not requiring important variables to be appropriate by forest type for the baseline scenario. • P. 17. BDW_{PERM} and BDW_{DECAY}. The first term is the "*proportion transferred to permanent storage*" in soil. BDW_{DECAY} is the average annual loss, however the units are not defined. • Page 20 E 3.2.20. $C_{EMITDIRECT}$ is defined as the direct emissions from fossil fuel emissions

from logging and log transport. No units are defined, and the conversion factors for diesel or gasoline to CO_2e are not listed. (**CAR 11/10**)

Finally, the VCS require that IFM LtPF projects calculate emissions from harvested wood products (HWPs). The methodology estimates carbon permanently stored in HWPs in section 2.4.4.1.15 on p.20. However, numerous issues were noted in this equation logic.

- P. 20-E. 3.2.20 . C_{PERMAN} includes losses from the manufacturing process, but C_{LOST} also includes losses from "*processing*" which suggests double counting.
- P.20 E. 3.2.22, the fractions used to estimate RE_k are not derived, and no source, or process for obtaining these values is provided. Furthermore these values are not included in Table 5. One of the values, $f_{PERMHWPk}$ is derived in E.3.2.23, however this equation is reliant on the parameter HL_k, which is not defined. Example values of HL_k are provided in table 3, however it is not explicit if these values shall be used as default values, and if so, how they are conservative if applied globally. (**CAR 13/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 11/10** **CAR 13/10**		

Findings from Second Assessment on 27 October 2010			
The baseline calculations have been significantly refined. The revised calculations now provide a clear process for the estimation of carbon stock changes at annual timesteps throughout the entire project crediting period. However, please see other findings related to **CAR 11/10** for issues identified in the baseline calculations. Regarding the annual estimation of carbon stock changes in HWP pools, see related findings to **CAR 13/10**, specific to the derivation of the parameter $\Delta C_{PERMMAN,t}$.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The revised methodology remains in conformance with this criterion. See section 3.3 above for findings related to **CAR 11/10**, and section 5.1 below related to **CAR 11/10** and **CAR 13/10.**			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

4 Additionality:

4.1 The methodology shall contain an appropriate and adequate methodological procedure for determining whether the project is additional, and demand sufficient information to be presented in the PDD such that the additionality can be validated by a third party. (VCS 2007.1, Section 6.4)

Findings from First Assessment on 7 September 2010			
Additionality is calculated in section 2.3 of the methodology. In this section, the methodology defaults to the use of the latest version of the CDM Tool for the Demonstration and Assessment of Additionality, as well as meeting those requirements of the VCS 2007.1 standard (**OBS 01/10**). Alternatively the methodology allows for the use of the VCS Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities. By deferring to these accepted tools, the methodology is in conformance with the VCS standard regarding the assessment of additionality.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Second Assessment on 27 October 2010			
Section 7 of the revised methodology states: "Project proponents shall use the newest version of the VCS tool: "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" (Voluntary Carbon Standard, 2010b) (Voluntary Carbon Standard, 2010b)." As the methodology defers to the most recent version of the VCS tool, it is in conformance with the VCS standard regarding the assessment of additionality. It should be noted that there is a typographical error (included in the quotation above), where the VCS citation is included twice within the text.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The typographical error has been fixed; the methodology remains in conformance.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5 Emissions:

This section is divided into ex-ante and ex-post emissions calculations. The ex-post emissions will be calculated as a result of the monitoring which is assessed in section 7 below. There is also a separate section which assesses the specific requirements as stated in the VCS documentation.

Ex – ante emissions calculation

5.1 The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the baseline scenario (ex-ante). (VCS 2007.1 6.5.3)

The assessment should consider:

i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps.

Findings from First Assessment on 7 September 2010
In general the methodology provides high level guidance on the process for the estimation of ex ante emissions for the baseline scenario. Fundamental to the necessary input values that lead to the estimation of emissions from the baseline scenarios are the parameters AGB_i and BGB_i. On p.14 of the methodology suggests three methods for the derivation of these variables: 1) Calculated directly from field measurements, or 2) Calculated indirectly from allometric biomass equations (or root:shoot ratio for BGBi), or 3) Derived from growth and yield models (or derived with biomass-based ecosystem simulation models for BGBi). The methodology provides no guidance (in the form of equations or a step by step process) for the derivation of these parameters. Further, the units of AGB_i and BGB_i are defined as "tonnes ha^{-1}" however as tonnes are not defined, it is not clear what units are required. Additionally, the use of three different methods to derive biomass could result in significantly different biomass inputs, which would ultimately result in different estimates of project carbon stock benefits. As no guidance for the use of the three different methods is given, and no process for the assurance of conservative application of the three suggested methods is given, it is not clear how conservative estimates of baseline emissions are calculated. Specifically, it is not clear how the methodology assures the use of conservative allometric equations, accurate field inventories, or conservative parameterization and simulation of carbon stock flux in growth and yield models. (**CAR 11/10**) Finally, the methodology provides insufficient guidance on the procedures for the selection of models (**CAR 10/10**), allometric equations, and field inventory data. The methodology provides examples of Canadian allometric equations, however it is not clear how other regional allometric

equations would be evaluated and deemed sufficient for application in this methodology. (**CAR 14/10**)

Similarly, it is not clear how inventory data that could be used to estimate baseline carbon stocks is validated. Regionally, inventory data quality varies significantly. Currently the methodology does not provide a process for the validation of inventory data used to quantify carbon stocks. The methodology states in section 2.4.2 on p.10:

"*Inventory and data sets need to be, at minimum, consistent with the IPCC "Good Practice Guidance for Land Use, Land Use Change and Forestry (GPG-LULUCF) (IPCC 2003), and compatible with projecting biomass changes within the analysis unit stratifications in the baseline and project scenarios."*

However, it is not clear how the GPG-LULUCF will be used to validate existing inventory data. Further, as the GPG-LULUCF includes explicit requirements for inventory such as noted in Table 4.2.4b of the GPG-LULUCF:

"*The assumptions and methodologies used for an inventory should be clearly explained to facilitate replication and assessment of the inventory by users of the report and taking into account the principles in paragraph 1, items (a), (b), (d), (g), (h) in the Marrakesh Accords, draft decision -/CMP.1 (Land use, landuse change and forestry), cf. document FCCC/CP/2001/13/Add.1, p.56*."

The methodology does not discuss assumptions associated with inventories. Additionally, as noted in section 4.2.4.4 of the GPG-LULUCF:

"*When compiling data, it is good practice to cross-check estimates of emissions and removals of greenhouse gases against independent estimates. The inventory agency should ensure that estimates undergo quality control by:*

- *Cross-referencing aggregated production data (e.g., crop yield, tree growth) and reported area statistics with national totals or other sources of national data (e.g., agriculture / forestry statistics);*
- *Back-calculating national emission/removal factors from aggregated emissions and other data;*
- *Comparing reported national totals with default values and data from other countries.*

It is also good practice to verify that the sum of the disaggregated areas used to estimate the various emissions/removals equals the total area under the activity, reported as per guidance in Chapters 2 and 3 (using the LU/LUC matrix)."

The methodology does not provide a quantification method or qualitative process for cross-referencing aggregated production data or comparing reported national totals with default values and data from other countries (note that GPG-LULUCF is country specific, where in this case it may be more appropriate to find data from similar forest types rather than country specific data). It is not clear how the methodology is in conformance with all of the requirements of the GPG-LULUCF regarding inventory assessment.(**CAR 15/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 10/10** **CAR 11/10**		

	CAR 14/10 **CAR 15/10**

Findings from Second Assessment on 27 October 2010

The revised methodology has significantly changed the carbon calculations for the baseline scenario. Similar to the previous version, the revised equation logic relies heavily on the input of $AGB_{i,t}$. As noted in 3.3 above, this input value is derived from either model outputs, or model outputs combined with the application of BEFs (see findings in 3.3 related to the application of BEFs). (**CAR 11/10**)

Additionally, a gap was found within the equation logic for the calculation of Harvested Wood Products. Specifically, it is not clear how clear how $\Delta C_{PERMMAN,t}$ is derived. It appears that equation 20 and subsequent unnumbered equations in section 8.4 are used to derive this parameter, but the methodology does not provide a clear process to do so. This creates a gap within the equation logic, and it is not clear how input parameters from secondary processing of residual manufacturing waste are used to estimate $\Delta C_{PERMMAN,t}$. As such, it is not clear how harvested wood products are calculated within the *ex ante* calculations (in both baseline and project scenarios). (**CAR 13/10**)

Additionally, as noted in Section 3.3 above, the revised modeling selection Section 8.1 of the methodology does not include clear guidance on the selection of models that provide appropriate outputs required for the input into the equation logic. Furthermore, the methodology does not provide a clear process for the linkage between model outputs and the equation logic. Specifically, the link between the use of simulation models and the equation logic is marginally explained within the parameter description for $AGB_{i,t}$ on p.19 and 30. (**CAR 10/10**)

The revised methodology includes guidance for the derivation of parameters within the equations. However, it should be noted that the suggested sources are focused on North American data. Furthermore, the methodology does not provide clear mandates for the review and determination of what is acceptable data to use. For example, on page 22, the methodology states:

"*Ex ante estimates for the decay parameter appropriate for the project should be derived from peer-reviewed literature (for example, (Harmon, et al., 1986); (Laiho & and Prescott, 2004)).*"

The use of the term "should" means that this is not required, and hence clear guidance on the use of appropriate data sources is not provided. This problem is repeated in other sections of the methodology. For example, see the parameter $C_{MANUFACTUREk}$, this parameter is described on p.27, but the source of this parameter is not provided. (**CAR 12/10**)

The revised methodology includes guidance for the selection of parameter sources from the literature where relevant. Furthermore, the methodology includes the following guidance in section 12:

"*In choosing key parameters or making important assumptions based on information that is not specific to the project circumstances, such as in use of existing published data, project participants must retain a conservative approach: that is, if different values for a parameter are equally plausible, a value that does not lead to over-estimation of net anthropogenic GHG removals by sinks must be selected*."

This guidance is found to be sufficient to close **CAR 14/10**.

Furthermore, regarding the validation of inventory data, the methodology requires that all inventory data meet IPCC GPG LULUCF Tier III data (see applicability condition number 2 on p.8). It should be noted that the IPCC GPG LULUCF includes the following guidance on Tier III data:

"*At **Tier 3**, higher order methods are used including models and inventory measurement systems tailored to address national circumstances, repeated over time, and driven by high-resolution activity data and disaggregated at sub-national to fine grid scales. These higher order methods provide estimates of greater certainty than lower tiers and have a closer link between biomass and soil dynamics. Such systems may be GIS-based combinations of age, class/production data systems with connections to soil modules, integrating several types of monitoring. Pieces of land where a land-use change occurs can be tracked over time. In most cases these systems have a climate dependency, and thus provide source estimates with interannual variability. Models should undergo quality checks, audits, and validations."*

However, the methodology provides no process for the validation of such data. The methodology states on p.18:

"*Inventory data used for this purpose must:*

1. Pertain directly to the project area, and
2. Not be more than 10 years old.

Typically, inventory data provide only a generalized description of stand attributes such that only average values (versus species-specific estimates) can be used in the ex ante modelling exercise.
Some models will require estimates for parameter values not traditionally measured in typical forest inventories activities. Project proponents shall make reasonable efforts to acquire sources of such data by this priority:
1. Project area and forest-type specific
2. Regional estimates, from the same or similar ecosystems or forest types
3. National estimates that represent averages for similar forest types
4. Global estimates for generally similar forest types,"

The second part of this quotation creates a confusing situation, where it is not clear how to proceed when inventory data does not meet the above criteria. Specifically, the use of the term "*shall make reasonable effort*" provides a caveat, and creates a loop-hole where the methodology fails to provide guidance on how to proceed once reasonable effort has been made yet the inventory data does not meet the criteria. Furthermore, the methodology has no validation requirements or process for the validation of inventory data. In a response to the findings of the first report the Methodology Developer referenced Section 13.2.1 where the use of filed data to verify inventory in confirming stratum updating is discussed. However, this section does not refer to the use of field data explicitly, and further as this section is discussing the monitoring (*ex post*) data, it is not clear how field data would be used to validate and verify inventory data used for *ex ante* estimates, most notably the baseline estimates. (**CAR 15/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 10/10**		

	CAR 11/10 **CAR 12/10** **CAR 13/10** **CAR 14/10 (Closed)** **CAR 15/10**

Findings from Third Assessment on 23 December 2010

Baseline approach:

As noted in section 3.3 above, the revised methodology now includes clear guidance on the use of BEFs within the equation logic. As such **CAR 11/10** is closed.

Harvested wood products:

The revised methodology splits C_{PERMAN} into two new variables (ΔCPERMMAN1,t and ΔCPERMMAN2,t) and explaining their derivation for primary vs. secondary processing, the methodology has clarified use of this variable, including the new equations 24 and 52 to clearly derive this parameter.

The revisions adding greater detail on calculating transportation-related emissions are a significant improvement. Use of "intensity" functions multiplied by transportation distances is a simple though rigorous accounting method that will considerably improve both efficiency and accuracy for project developers.

Derivation of HLk is now explained in detail on page 27. The recommended process of using IPCC default values unless regional or sub-regional values are available is appropriate. As such **CAR 13/10** is closed.

Model selection:

As noted in section 3.3 above, the revised methodology includes additional guidance on the selection of models and this additional guidance was found to be sufficient to close **CAR 10/10**.

Inventory data validation:

Section 8 of the revised methodology includes a section titled "Valid Starting Inventory Requirements". This section includes 3 criteria that must be met (note the numbering is incorrect as it does not follow numerical order). Footnotes 15 and 16 providing further guidance on the validation of initial inventory data. This additional guidance is found to be sufficient to close **CAR 15/10**.

Parameter derivation:

The origin of the default vales has been added to Table 4 and equations added for the transportation terms (Section 12). These additions were found to sufficiently address those issues highlighted in the previous report regarding the derivation of $C_{MANUFACTUREk}$. Additionally, those issues related to the derivation of $\Delta C_{PERMMAN,t}$ have also been addressed with the additions of equations 24 and 52, as such this portion of **CAR 12/10** is no longer relevant to this criterion, however see section 8.1 below for additional issues related to **CAR 12/10**.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 10/10 (Closed)** **CAR 11/10 (Closed)** **CAR 13/10 (Closed)**		

	CAR 15/10 (Closed)

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.2 The methodology shall contain procedures that result in a *conservative* estimation of the sum of the baseline emissions within the project boundary that would have occurred in the absence of the proposed VCS project activity (ex-ante), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be *carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study*.

Findings from First Assessment on 7 September 2010			
In addition to those issues highlighted in 5.1 above, several inconsistencies were noted that potentially lead to non-conservative estimates of baseline emissions: • P. 21. Section 2.4.1.16, the assumption of a combustion efficiency of 95% is not explained. The methodology does not clearly explain and justify the use of all assumptions made in the calculations of GHG emissions and/or reductions. (**CAR 16/10**) • The methodology does not define *de minimis* (Table 2 on p.5). Furthermore, Table 2 includes CO_2, CH_4 and N_2O emissions from fertilizer as "optional", however it is not clear how these emissions would be calculated in the methodology if a Project Developer wished to include them. (see **CAR 08/10**)		
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 08/10** **CAR 16/10**		

Findings from Second Assessment on 27 October 2010			
Parameterization with models and field data are described with citations as to how they should be selected. Combustion efficiency of 95% has been removed, and *de minimis* is defined. As such the assumption highlighted in the first report is now clearly explained and **CAR 16/10** is no longer relevant to this criterion. In addition, Section 3 of the methodology includes a definition of the term *de minimis*. The revised equation logic now presents a process for the calculation of baseline emissions, however see Section 5.1 related to issues within the calculation of emissions from harvested wood products.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 08/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.3 The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the project scenario (ex-ante). (VCS 2007.1 6.5.3)

The Assessment should consider:

i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps:

Findings from First Assessment on 7 September 2010
As the same set of equations are used for the project scenario as the baseline (see section 2.5 of the methodology), those issues highlighted in 5.2 and 5.3 above are also relevant for project scenario ex ante emission estimates. Additionally, in section 2.5 of the methodology the allowed project activities are defined. However, numerous issues with the allowed project activities were noted by the audit team. On p.25 Section 2.5 the methodology states: "*Within this Logged to Protected Forests methodology project scenario activities may include:* *-Ongoing low level forest management harvesting for the purposes of restoration, pest/disease/fire risk management, salvage, or community/stakeholder engagement and/or changes to baseline non-forested or baseline non-timber harvesting land base area biomass stocks due to restoration or other project activities.* *-Direct emissions due to project management and monitoring activities (if non-de minimis).* *-Net emissions related to community economic development, or other leakage mitigation activities planned for the project land base.* *-Any expected change in illegal land activities or constant annual natural disturbance regimes in the project scenario as compared to the baseline scenario (if applicable)."* Several issues arise from this statement: • The term "ongoing low level forest management" is not defined. Salvage logging can be used loosely as a term to describe a variety of silvicultural prescriptions. For example, in

western Ukraine, as a result of intensive root rot fungus within large Norway spruce forests of the Carpathian Mountains, the term sanitation cutting is used to describe intensive clearcutting of forests in advance of the spread of the fungus, and then replanting with native forests. Under this current definition, a project that foresees a threat of insect infestation (for example the Emerald Ash Borer in northeastern North American temperate forests), could employ sanitation harvests to remove biomass within the methodology conditions. This type of intensive management is not included within the VCS description of LtPF project types. The VCS states there are two types of LtPF projects: 1) protecting currently logged or degraded forests and plantations from further logging and degradation; and 2) protecting unlogged forests that would be logged in the absence of carbon finance. It is not clear how continued management would not cause "further logging and degradation". Additional clarification and definition of terms is required to assure that continued active management within the project scenario maintains conformance with the VCS requirements for LtPF projects (**CAR 02/10**)

- No guidance on how to calculate *de minimis* emissions due to project management and monitoring is provided (**CAR 08/10**). Further, it is not clear how non-harvest related project emissions would be incorporated in the equation logic presented in section 2.3. In this section, emissions are restricted to biomass decomposition and harvesting activity emissions. It is not clear if this clause is meant to incorporate emissions associated with field inventories, project validation and verification, and allowed management activities. Further, as emissions would likely vary significantly between the baseline scenario and project scenario, it is not clear how harvest emissions ratios such as $f_{PERMHWPk}$, $f_{BUCKINGLOSS}$, $f_{PROCESSk}$, etc. would differ from those related to actively managed forests. Specifically, it would be expected that HWP product calculation for sanitation cuts would require different default values than those for forests managed for timber products (e.g. allowed management in the project scenario vs. planned management in the baseline scenario).

  The methodology does not provide guidance on the use management specific default parameters, nor does it provide guidance on how emissions in the project scenario from allowed management practices would differ from those of the baseline scenario, and how the parameters to be used in E3.2.21 through E3.2.26 will be obtained. (**CAR 17/10**)
- Page 37. Section 3.5. Last paragraph. The methodology suggests that if net results change by more than 5% annually (from the original projection), an action plan should be developed and the problem resolved within 24 months. It is not clear as currently written, how project developers should handle this issue. Per the VCS guidelines, all carbon stock losses must be accounted for, and if the losses were so great that the verified period resulted in net emissions, then no credits would be awarded until the debt attributable to losses was eliminated. As the VCS already has a clear process for handling this, it is not clear what is being suggested in the methodology document as currently written. (**CAR 17/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See CARs related to baseline emission estimates **CAR 08/10** **CAR 17/10**		

Findings from Second Assessment on 27 October 2010
In order to maintain consistency between the baseline and project scenario emissions calculations, virtually the same set of equations is used for the estimation of carbon stock changes in both scenarios. As such, those identified issues with the baseline calculations are all relevant to the project calculations.

As noted in 2.3 above, the revised methodology now includes a definition of the term *de minimis* and guidance on how to calculate *de minimis* values, as such **CAR 08/10** is closed.

In addition, it should be noted that the key parameter in the project scenario, $AGB_{i,t}$ is the exact same as the baseline scenario. As no distinction is made in the parameter name, it is not clear how this parameter differs from that used in the baseline calculations (see the unnumbered equation on p.30 between equations 24 and 25, and also equation 7). The same is true for other parameters within the project scenario such as $f_{HARVEST,l,t}$ and $f_{BRANCH,l,t}$, despite the fact that these parameters would likely significantly change in the project scenario. In some cases the methodology clearly denotes those parameters specific to the project scenario, see equation 34 for example. It is not clear why this approach is not maintained for consistency, and in order to differentiate between those parameters that are specific to the project scenario, and those that are specific to the baseline scenario.

The methodology does provide a process for the calculations of emission changes between the project and baseline scenario, however, ambiguity within the project scenario equations is created as key parameter changes are not identified within the equations. (**CAR 17/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See CARs related to baseline emission estimates **CAR 08/10 (Closed)** **CAR 17/10**		

Findings from Third Assessment on 23 December 2010			
The methodology has been revised to more clearly specify whether parameters pertain to either the baseline or project scenario. Parameters have been assigned new names (or terms) differentiating between baseline vs. project. As such, the methodology now clearly distinguishes between baseline and project parameters, which were found to be sufficient to resolve those ambiguities related to **CAR 17/10**. Otherwise parameter calculations remain largely the same as the previous draft. The method for calculating the project carbon balance is now clearly presented. Net emissions reductions calculations (Section 11) are likewise clear, though issues remain regarding the validity of using an "uncertainty factor" to establish over-riding project confidence levels and related deductions (see below).			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 17/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.4 The methodology shall contain procedures that result in a *conservative* estimation of the sum of the project emissions within the project boundary (ex-ante), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be carried out in an *unambiguous way, replicated, and subjected to a validation and/or verification study*.

Findings from First Assessment on 7 September 2010			
In addition to the previous findings regarding baseline and project scenario *ex ante* estimates noted in section 5.1-5.3 above, the methodology provides no assessment of uncertainty associated with baseline and project scenario emission estimates. Equation 3.2.28 states that the uncertainty calculation is taken from the PD (see $VCU_{UNCERTAIN}$ parameter description). Section 3.10 on p.40 of the methodology discusses the need for inclusion of uncertainty, however there is not a clear process for the quantification included within the methodology. The VCS Guidance for AFOLU Projects and Tool for AFOLU Methodological Issues state: "*The IPCC 2006 Guidelines shall be used for estimating: CO2 and non-CO2 emissions; forest regrowth (carbon accumulation) if degradation is reduced; and, reductions in forest carbon stocks caused by removals of biomass exceeding regrowth. These Guidelines shall also be followed in terms of quality assurance/control and uncertainty analysis."* The methodology refers to the IPCC 2006 guidelines as a resource, however, it is not mandated that these guidelines regarding uncertainty analysis shall be used. The VCS Standard clearly states that the IPCC 2006 Guidelines "*shall be followed in terms of quality assurance/control and uncertainty analysis*". As such, the methodology does not present a process with which to estimate uncertainty associated with estimated reduced carbon emissions. It should be noted that the revised 2011 VCS Draft Standard includes additional guidance regarding the assessment of uncertainty. (**CAR 18/10**).			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 18/10**		

Findings from Second Assessment on 27 October 2010
Per **CAR 11/10** & **CAR 18/10**, parameterization of models is mentioned and refers to field data collection, with a stock precision target of +/-10% at the 90% Confidence Interval using temporary or permanent plots (Section 13.2.2). This type of specificity was absent in the previous version of the methodology. It also includes the requirement to use published data. But how models, field data, and literature values will be worked together are sometimes conflicting or unclear. For example, Section 11.4 states: "*over-riding project confidence deductions will be loosely based on the Climate Action Reserve's Confidence Deduction Module*." If Sampling error {of field inventory data} is >10% it appears that the confidence deduction is always 5%. Even when the sampling error exceeds 20%. Whereas in the CAR document, the Confidence deduction factor is more specific. The deduction factor under CAR is 5% for up to a 10% sampling error, but if the sampling error is more than 20% the project is ineligible. The current approach described by the Methodology Developer appears to be lacking in conservatism for the calculation of uncertainty. Since this factor is applied to a variety of calculations in the document, it may lead to a non-conservative approach that is not in compliance with VCS Guidelines. (**CAR 18/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 18/10**		

Findings from Third Assessment on 23 December 2010			
The revised methodology has significantly improved the uncertainty section in 11.4 of the methodology. This section is now much more robust than previous version, and is largely founded on the Confidence Deduction module of the Climate Action Reserve's uncertainty assessment, which was developed with significant stakeholder input. As such the findings related to **CAR 18/10** are no longer relevant to this criterion. For additional findings on the uncertainty analysis, see section 5.20 below.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology has further revised section 11.4 to increase the clarity of the uncertainty calculation procedures. The revisions were found to be in conformance with the VCS 2007.1 standard, and as such the revised methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.5 The methodology shall provide steps to calculate the net GHG benefit of the project ex ante. The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emission reductions and removal enhancements during project implementation. GHG emission reductions or removal enhancements shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario. (VCS 2007.1 6.5.3)

Note, an ex-ante calculation of the net carbon benefits of the project is only required to determine whether decreases in carbon pools or increases in GHG emissions are insignificant and need not be measured and monitored. (II. Step 0, paragraph 1)

Findings from First Assessment on 7 September 2010
The Methodology Developer does not provide sufficient procedures for quantifying net GHG benefits of the project. In addition to the findings raised in 5.1-5.4: • P. 11, Section 2.4.4.1.1 The Methodology Developer currently states, "…*{that}… calculations must be repeated and summed dynamically over time by forest type* ***or*** *analysis unit,* ***or*** *utilize weighted average values to capture stand level differences in biomass dynamics*". However, the methodology does not provide detailed descriptions and step-by-step instructions of the baseline quantification analysis approach that are applicable to regional silvicultural variations. For example, single tree selection in tropical forests may be difficult to detect or track if the analysis unit is "forest type". By contrast, biomass dynamics in clear-cuts in the Pacific Northwest forests of the US and Canada will be relatively easier to track and the analysis unit might simply be the projected baseline clear-cut areas (the

Methodology Developer correctly highlights this on p.9 of their document). However, since the baseline carbon estimation approach and accounting dynamics will be very different by geographic region & harvest type, the methodology must provide specific guidance that is applicable to all regions within the geographic scope of the methodology. (**CAR 19/10**)

- P.12, 2.4.4.1.3 the methodology notes that growth factors of existing forests will be applied to each "forested polygon" within the timber harvesting land base. This implies that sequestration from growth will be totaled at the forest level following project area stratification. Further, numerous equations indicate that project area will be stratified by forest type (for example see E. 3.2.3 and 3.2.4). However, the methodology does not provide explicit guidance on the stratification of the project area. On p.9 of the methodology in the second paragraph, it states:

  "*Further, projects will need to further stratify, at minimum, the timber harvesting landbase area into spatially based analysis units based on forest types and/or other ecosystem attributes that indicate similarities in terms of biomass, carbon content and flows over time."*

  The methodology goes on to state:

  "*…a single analysis unit based on forest type will need to be stratified into different harvest types…"*

  However, the methodology does not provide a method for summing carbon stocks by "other ecosystem attributes" or by "different harvest types". Furthermore, in Table 5 of the methodology, forest type is defined as derived from maps, it is not clear how the project area is stratified in areas where forest type mapping is unavailable. The methodology does not present a clear process for the stratification of the project area. (**CAR 20/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 19/10** **CAR 20/10**		

Findings from Second Assessment on 27 October 2010
The revised methodology is applicable to only boreal and temperate forest types, and includes guidance for the estimation of emissions relative to these forest types. As such **CAR 19/10** is closed. In Section 2.1, Step 8a, ii "analysis unit" is defined as either forest type, age or other ecosystem factors and is the basis of stratification. Analysis unit is used consistently but "polygon" is still used with it interchangeably (for example, page 31, Section 9.3.1). When multiple descriptors are used, they should be added to the definitions section. (**CAR 20/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 19/10 (Closed)** **CAR 20/10**		

Findings from Third Assessment on 23 December 2010
Revised wording in the methodology provides sufficient clarity for the reader to understand the concepts of stratum and polygons. These are fairly conventional concepts and appear to be used accurately in this methodology. The use of the term "analysis unit" is clearly defined in Step 1 of

Section 8 Baseline Scenario Area Stratification. The addition of text was found to be sufficient to address previously noted ambiguities related to the use of this term; as such **CAR 20/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 20/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.6 All significant GHG sources and leakage shall be measured, estimated and monitored in both the baseline and project case. Certain GHG sources may be considered "insignificant" and do not have to be accounted for if together such omitted decreases in carbon pools and increases in GHG emissions amount to less than 5% of the total CO2-eqbenefits generated by the project. Pools can be omitted if their exclusion leads to conservative estimates of the number of carbon credits generated. (II. Step 0, paragraph 2 and 3)

Findings from First Assessment on 7 September 2010			
See findings described above regarding the use of the *de minimis* rule.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See findings for **CAR 08/10**		

Findings from Second Assessment on 27 October 2010			
De minimis is now defined in Section 3 Definitions.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 08/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Ex-Post Emissions Calculation

5.7 The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the baseline scenario (ex-post). (VCS 2007.1 6.5.3)

The assessment should consider:

i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps.

Findings from First Assessment on 7 September 2010			
Ex post project scenario emissions are discussed in section 3.5 of the methodology. The methodology states: "*The project proponent must develop a combination of remote sensing, field monitoring, and operational data collection to determine the area and carbon impacts of planned and unplanned disturbance, and reconcile against the ex ante project scenario projections on an annual basis."* This section describes what needs to be monitored, however, no equations showing how *ex post* data feeds back into the equation logic is provided. It is not clear how *ex post* data is used to quantify VCUs. VCUs are estimated in section 2.4.5 of the methodology, utilizing ex ante baseline and project estimates, however it is not clear how ex post data is incorporated into the equations in this section. (**CAR 21/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Second Assessment on 27 October 2010
Ex-post calculations are explained in Section 9.2.1 but there remain conditional statements that create uncertainty with how they should be applied. For example, Section 9.3.1 either *ex-ante* or *ex-post* calculations are described as those that: "…*will most likely occur with models that require inputs derived, in part, from forest inventory data updated from monitoring sample plots.*" While it is true that not every variable in a model will be measured, it is ambiguous to state that the *ex-post* and ex-ante calculations will "*most likely*" be derived from models that "*may*" include field data. The methodology should be specific as to which variables will be modeled and which will be measured.

Furthermore, in this section the methodology defers to the Ecotrust methodology for the procedure for estimating $C_{LB,l,t}$. The audit team does not find the general reference to another methodology for the source of the *ex post* calculations to be sufficient. Specifically, it is not clear what inputs are required from project developers in these equations, and linking this methodology to another methodology in this way creates additional confusion for project developers. At a minimum, all relevant *ex post* equations should be presented within the methodology. (**CAR 21/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Third Assessment on 23 December 2010			
Section 9.2 has been revised to provide a detailed description of the parameters and calculations, rather than referencing the Ecotrust methodology. Additionally, the revised methodology as a whole has strived to use more direct language in order to remove ambiguities noted in the previous report. For example, in section 9.3.1 quoted in the findings from the 27 October 2010 assessment report, the terms "most likely" and "may" were removed. The methodology now provides clear guidance on what is required of project developers. These revisions are sufficient to address **CAR 21/10**.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 21/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.8 The methodology shall contain procedures that result in a conservative estimation of the sum of the baseline emissions within the project boundary that would have occurred in the absence of the proposed VCS project activity (ex-post), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study.

Findings from First Assessment on 7 September 2010			
As noted in section 3.3 of the methodology, by "*nature an IFM-LtPF project is based on avoiding the baseline scenario*", hence it is impossible to measure and monitor the baseline *ex post*. However, the methodology does include a stipulation that developing data sources should be monitored on an annual basis, and the baseline model adjusted to reflect the "*best current thinking (and data)*". The use of this qualifier opens the door for *ex post* changes to the baseline throughout the crediting period. The VCS Guidance for AFOLU Project and Tool for Methodological Issues state: "The baseline for the IFM project is then the management plan projected through the life of the project, satisfying at a minimum the three standards given above." It is not clear how the baseline would be revised throughout the crediting period, as changes in "*the best current thinking (and data)*", will not impact the original management plan used to estimate the baseline scenario. (**CAR 22/10**)			
Conformance	Yes ☐	No ☒	N/A ☐

CAR/OBS	**CAR 22/10**

Findings from Second Assessment on 27 October 2010			
In the Methodology Developers response to Public Comments (from the Nature Conservancy), they indicate that the baseline is fixed for the project length, but this is not stated anywhere in the methodology. The references to revising the baseline have been removed from the methodology. Hence the suggestive text included in the first version has been removed, although the current version does not explicitly state that the baseline shall be changed. As such this is no longer a non-conformance, however the Methodology Developer should consider clarifying this, especially as this was expressed as a concern rose during the public review. (**OBS 06/10**)			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 22/10 (Closed)** **OBS 06/10**		

Findings from Third Assessment on 23 December 2010			
The methodology still does not explicitly address the question of whether the baseline is fixed for the project length. Rather it provides guidance for the process of updating the baseline throughout the crediting period. For example, in section 9.2, the 6th bullet points states that if any changes are made to the model assumptions of parameters used in Section 9 of the methodology, the calculation of the baseline emissions (from the current date forward) must be redone. Additionally, the methodology includes provisions for updating the baseline inventory data with ex post monitoring results. As such the methodology includes provisions for updating the baseline, however, what is not clear is if the actual baseline scenario identified in section 6 of the methodology can be updated. It is implied through sections 6, 7 and 8 that the identified most likely baseline scenario will be fixed, but that the actual calculation of carbon stocks within the baseline scenario will be updated as needed based on more recent ex post forest inventory throughout the monitoring process. As such it is not explicitly clear how the revised methodology (v8.3) conforms with the statements made by 3GT/ERA Inc. in response to the public comments regarding concerns over the updating of the baseline. In order to fully address those public stakeholder comments related to the revision of the baseline throughout the project crediting period, the methodology should provide explicit guidance noting that the previsions for updating the baseline do not apply to the identified baseline scenario in section 6, but rather are specific to the actual estimations of the identified baseline scenario. (**OBS 06/10**)			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**OBS 06/10**		

Findings from Final Assessment on 04 April 2011
The following clarifying statement has been added to the beginning of section 8 of the revised methodology: The baseline emissions are calculated from the baseline scenario selected in Section 6. This baseline scenario does not change during the project duration, however, as outlined in Section 9.2, certain data or model parameter changes may require remodeling baseline carbon pools in future verifications. As such the revised methodology now fully and clearly addresses all comments raised during the public consultation conducted by the VCSA. The revisions were assessed and found to increase the methodology clarity, and the revised methodology remains in conformance with this

requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.9 The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the project scenario (ex-post). (VCS 2007.1 6.5.3)

The Assessment should consider:

i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps:

Findings from First Assessment on 7 September 2010			
As noted in 5.7, the methodology does not present a process for the estimation of *ex post* carbon stock emissions. Hence, it is not possible to evaluate this process under this criterion.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Second Assessment on 27 October 2010			
Ex-post calculations for the project scenario are defined for stock emissions per Section 9 but it says that "many of the calculations" are listed in Section 8 (baseline stock emissions). The Methodology Developer should be specific as to which calculations within Section 8 are required for use under Section 9. (**CAR 21/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Third Assessment on 23 December 2010			
The revised methodology includes a greatly expanded Section 9.2, complete with a thorough description of the equations and processes used to analyze monitoring data. The revised methodology includes clear guidance on the selection of use of allometric equations and models, parameters derived from the literature and other sources, and a hierarchical process for the selection of default values where appropriate. As such **CAR 21/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 21/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

5.10 The methodology shall contain procedures that result in a conservative estimation of the sum of the project emissions within the project boundary (ex-post), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study.

Findings from First Assessment on 7 September 2010			
As noted in 5.7, the methodology does not present a process for the estimation of *ex post* carbon stock emissions. Hence, it is not possible to evaluate this process under this criterion.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Second Assessment on 27 October 2010			
A process is presented for summing *ex-post* project emissions (section 9.2.1). However, as noted in 5.7 above, the process is incomplete, and not sufficient for the estimation of *ex post* carbon stock changes. (**CAR 21/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Third Assessment on 23 December 2010			
The revised methodology has adequately addressed these concerns and includes a detailed process for estimating ex post stock changes (see Section 9.3). The methodology is now in conformance with this requirement and **CAR 21/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 21/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.11 The methodology shall provide steps to calculate the net GHG benefit of the project ex-post. The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emission reductions and removal enhancements during project implementation. GHG emission reductions or removal enhancements shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario. (VCS 2007.1 6.5.3)

Findings from First Assessment on 7 September 2010
As noted in 5.7, the methodology does not present a process for the estimation of *ex post* carbon stock emissions. Hence, it is not possible to evaluate this process under this criterion.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Second Assessment on 27 October 2010			
See comments in 5.7 above.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 21/10**		

Findings from Third Assessment on 23 December 2010			
As noted in sections 5.7 through 5.10 above, the methodology is now in conformance with this requirement, and **CAR 21/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 21/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.12 The methodology shall provide the steps for calculating the number if VCUs to be issued at any given verification event, considering net GHG reductions, leakage, risk buffer credit deduction and any other deductions or alternations that may be needed.

Findings from First Assessment on 7 September 2010
The methodology presents a process for the calculation of VCUs in section 2.4.5 of the methodology. Multiple issues were noted within this section. (**CAR 23/10**) • E.3.2.27 presents the calculation of the gross carbon emissions reduction created by the carbon project (note in the first sentence "ARE" is written in all capitalize, it is not clear if this is a typo or for emphasis). In this equation, it is not clear why the change in baseline carbon stocks is added to the change in project carbon stocks. This would only be mathematically correct if baseline carbon stocks were negative (representing emissions), however, in the case where baseline carbon stocks were not negative, as would be likely with single-tree selection silviculture where significant biomass remains in the harvested forest, this would represent an overestimation of carbon stocks. • E.3.2.28 includes two parameters related to leakage, however these parameters are not derived within the methodology (see findings in section 6 below). • The VCS defines VCUs in the VCS Guidance for AFOLU Projects as "…the tradable carbon credits (VCUs) are estimated by subtracting out the leakage from the total estimated "credits" and then subtracting out the non-permanence buffer". Hence the actual VCUs are not calculated until E.3.2.30, and equations E. 3.2.27 – E. 3.2.29 are actually calculating "credits", and as such the use of the term "VCU" in these equations is incorrect. • E.3.2.29 calculates the net VCU's submitted to VCS permanence risk buffer pool. The equation logic used in this equation does not appear to be in conformance with the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination. Specifically, it is not clear why: "$((VCU_{PERMBUFFERFACTIORt} - VCU_{BUFFERFACTORt-5}))$" is subtracted in the equation. • The VCS Guidance for AFOLU project presents a table on p.24 showing the process by which VCUs are calculated. This table clearly shows that the risk buffer is to be applied to

the total credits, not the net credits that have already accounted for leakage (as is the case in E.3.2.30, as leakage is discounted to calculate VCU_{NET} in E. 3.2.28). • Finally, the parameter VCU_{NETt} is used in E 3.2.29, it is not clear why a similar time specific parameter is not used in E.3.2.30, where $VCU_{PERMBUFFERt}$ is time specific. The methodology must have a process for calculating the number of VCUs specific to each verification period, and as VCU_{NET} in E.3.2.30 is not time specific, it is not clear how time is included in this equation.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 23/10**		

Findings from Second Assessment on 27 October 2010			
The final equation used to calculate VCUs is equation 51. This equation presents a process consistent with the VCS Standard for the calculation of VCUs. However, it should be noted that little guidance is given within the methodology regarding the derivation of BR_y. The description for this parameter states: "BRY = estimated VCU-equivalent tCO2e issued to the VCS Buffer Pool in year 'y', calculated using the latest version of the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer (Voluntary Carbon Standard, 2008c)" By defaulting to the VCS Tool, the methodology is in conformance with the VCS Standard, however, as the methodology provides little guidance on the correct use of this tool, it may lead to inconsistent application of the buffer determination within equation 51. (**OBS 07/10**)			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 23/10 (Closed)** **OBS 07/10**		

Findings from Third Assessment on 23 December 2010			
In order to address **OBS 07/10** the methodology has been revised to include the following clarifying text: "*Note according the current tool (2008), BRy is calculated by multiplying the most current verified permanence risk Buffer Withholding Percentage for the project multiplied by (ERy,GROSS.-ΔCPRJ,EMITFOSSIL,t), as shown in the VCS Guidance for AFOLU Projects (Voluntary Carbon Standard, 2008a) page 24."* As found in the previous assessment, the methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

VCS Specific Requirements for Emissions (ex-ante and ex-post)

5.13 Based on selected or established criteria and procedures, the methodology shall enable the quantification of GHG emissions and/or removals separately for:

i. each relevant GHG for each GHG source, sink and/or reservoir relevant for the project; and

ii. each GHG source, sink and/or reservoir relevant for the baseline scenario. (VCS 2007.1 6.5.2)

Findings from First Assessment on 7 September 2010			
As noted in the findings above, the same equations are used for both project and baseline scenarios, hence those identified non-conformances related to the equations are applicable to both. The methodology includes a process for the calculation of all mandatory carbon pools, however as noted above, non-conformances within these equations exist, most notably in the lack of guidance provided in the use of all parameters utilized in equations (**CAR 12/10**). Additionally, as noted above, the methodology does not provide guidance for the calculation of optional pools (see **CAR 05/10**), and non-CO_2 GHG emissions (see **CAR 07/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 05/10** **CAR 07/10** **CAR 12/10**		

Findings from Second Assessment on 27 October 2010			
The revised methodology no longer includes soil carbon pools, as such the findings relevant to **CAR 05/10** in the previous assessment are no longer valid. However, findings related to **CAR 12/10** and **07/10** are still relevant.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 07/10** **CAR 12/10**		

Findings from Third Assessment on 23 December 2010			
Fertilizer derived emissions have been excluded from the methodology as an optional pool, and thus **CAR 07/10** is no longer valid. Additional parameters and default values have been added for transportation emissions and to the parameter table (Section 12). These are sufficient to guide a project developer through this section of the methodology. Additional guidance has been provided within the methodology regarding the use of parameters (including the identification of the source of parameters). As such, the reference to **CAR 12/10** is no longer relevant to this criterion.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 07/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

5.14 When highly uncertain data and information are relied upon, the methodology shall ensure the selection of assumptions and values available to the project developer do not lead to an overestimation of GHG emission reductions or removal enhancements. (VCS 2007.1, 6.5.2)

Findings from First Assessment on 7 September 2010			
See findings related to uncertainty above in section 5.4, and findings related to assumptions in 5.2.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 16/10** **CAR 18/10**		

Findings from Second Assessment on 27 October 2010			
The revised methodology now clearly explains assumptions related to carbon calculations, and specifically the parameters used within the equations, as such **CAR 16/10** is closed. Additionally, the methodology includes section 11.4 regarding the calculation of an uncertainty factor. However, as noted in section 5.4 above, the use of the uncertainty confidence deduction derived from the Climate Action Reserve is not clear. (**CAR 18/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 16/10 (Closed)** **CAR 18/10**		

Findings from Third Assessment on 23 December 2010			
As noted in the findings from the previous assessment dated 27 October 2010, the revised methodology clearly identifies assumptions related to carbon calculations. Furthermore, section 11.4 regarding the calculation of uncertainty has been significantly improved in version 8.3 of the revised methodology. As such, the findings highlighted in the previous report related to **CAR 18/10** are no longer relevant to this criterion. Findings related to the uncertainty calculation and the evidence to address **CAR 18/10** is presented in 5.20 below.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.15 The methodology shall estimate GHG emissions and/or removals by GHG sources, sinks and reservoirs relevant for the project and relevant for the baseline scenario, but not selected for regular monitoring. (VCS 2007.1, 6.5.2)

Findings from First Assessment on 7 September 2010
As noted in 5.7 above, the methodology does not present a clear process for the calculation of *ex post* estimates, hence a comparison to *ex ante* calculations is not possible.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See CARs related to *ex post* calculations		

Findings from Second Assessment on 27 October 2010			
In Section 12, Developer list the data and parameters that are relevant to both the baseline and project scenarios but that are not monitored and states: "*if different values for a parameter are equally plausible, a value that does not lead to over-estimation of net anthropogenic GHG removals by sinks must be selected.*"			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The revised methodology remains in conformance with this requirement. Furthermore, relevant GHG SSRs are identified within the methodology and a clear process for the estimation of emissions and/or removals from these SSRs are included within the equation logic of the methodology.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.16 The methodology shall establish and apply criteria, procedures and/or methodologies to assess the risk of a reversal of a GHG emission reduction or removal enhancement (i.e. permanence of GHG emission reduction or removal enhancement) (VCS 2007.1, 6.5.2).

Findings from First Assessment on 7 September 2010			
The methodology includes guidance on the VCS Risk and Permanence Buffer Pool contribution in section 2.4.5.3. In this section the methodology defers to the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (Voluntary Carbon Standard 2008). As the reference is specific to the 2008 tool, it is not clear how the recent VCS Program Updates are included, and how future changes to the risk tools would be referenced. (**OBS 01/10**) Additionally, please see findings related to E. 3.2.29 in section 5.12.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**OBS 01/10**		

Findings from Second Assessment on 27 October 2010			
Equation 51 of the methodology refers to the latest version of the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination, and as such is in conformance with the VCS Standard. However, also see findings from 5.12 above regarding the application of the calculated VCS Buffer Determination within the methodological equations.			
Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

Findings from Third Assessment on 23 December 2010			
The revised methodology refers to the latest version of the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination in the parameter descriptions under Equation 59. As such the methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.17 If applicable, the methodology shall provide guidance for the selection or development of GHG emissions or removal factors that:

i. are derived from a recognized origin;

ii. are appropriate for the GHG source or sink concerned;

iii. are current at the time of quantification;

iv. take account of the quantification uncertainty and are calculated in a manner intended to yield accurate and reproducible results; and

v. are consistent with the intended use of the VCS PD or monitoring report as applicable (VCS 2007.1, 6.2.5).

Findings from First Assessment on 7 September 2010
As noted in section 3.3 and 5.13 above, the methodology does not provide clear guidance on the selection of multiple parameters used in equations. Furthermore, Table 5 is included in the methodology on p.29. This Table includes a variety of information, however as written it is difficult to interpret (**CAR 24/10**). For example, • It is not clear what the "ID Number" refers to. It is not clear why the parameter is not presented in this column as this makes it difficult to interpret how the column corresponds to the parameters used in the methodology. • The "Data unit" column is not consistently filled in, making it unclear if no units are specified or any units can be used. • The column "Measured, calculated, estimated, observed" does not correspond to the guidance provided in the methodology. For example, "Branch Biomass" and "Foliage Biomass" are listed as "measured", however the methodology does not provide guidance as to how these are measured. Furtherer, if no guidance is provided on how parameters will be measured/calculated/estimated by project developers, it is not clear how conservative estimates will be maintained, as the methodology does not require a process for the derivation or validation of these input values. • ID Number refers to Li et al. 2003 for the source of the input root:shoot ratio used in E. 3.2.4, however as this reference is not included in the references section (section 4.3 of the methodology), it is not clear if this citation is applicable to the geographic scope of the methodology (globally).

- The comments section inconsistently includes those equations where parameters are used. For example ID Number "J" Stemwood biomass (including bark) is listed. This parameter is measured in the field (though no guidance as to how is provided), and it is not clear where this parameter is used in the equation and what the actual parameter is, as defined in the equations (e.g. $B_{STEMWOOD}$).
- The table does not consistently describe the source of data. For example, ID Number "N" describes the source of the parameter as "root:shoot ratio. However, the parameter description of BGB_i (which is not directly referenced in the table making it very difficult to follow the linkage between the table and the methodology equation logic), states that BGB_i "will be estimated from the root:shoot ratio", but also offers other methods for the estimation and calculation of this parameter (see second paragraph of the methodology p.14). These other methods include direct field measurements and biomass-based ecosystem simulations models. Inconsistencies between table 5 and the methodology create confusion.
- Other variables are listed as "measured" where it is unclear how this is possible. For example, ID Number U "litter mass from harvesting" is described as "measured" in the field (TSPs). However, as the project is preventing logging (LtPF) it is not clear how this will be measured if the logging does not occur. Furthermore, this parameter appears to be measured through sample plots, yet the units are presented as kg. It is not clear how total values will be obtained from sample measurements. As sample plots are being used, it would seem that these units would be in mass per unit area rather than a mass only. This is also true for a variety of other measured parameters (see for example ID Numbers J,K, L,O, P and others).
- Some parameters are described as the source is "calculated" yet the derivation is "observed", for example see ID Number "X". It is not clear how mass of standing dead trees will be observed, or what "observed" means.
- Furthermore, in the standing dead trees section, in the comments field for ID Numbers AB-AD the Table states "as a component of row X calculation". It is not clear what is meant by this. Further, it is not clear if laboratory measurements of oven-dry disc mass are required for all dead wood calculations. As the methodology does not provide guidance on this topic, it is not clear if laboratory measurements are required for all projects interested in using this methodology.
- The soil section includes a list of 4 parameters, however the methodology does not include guidance on how soil carbon is calculated, and no equations for the use of these parameters are provided. Hence it is not clear how this information is used.
- The Table includes guidance on the parameters needed for Fire and uncontrolled deforestation, however it is not clear how the methodology will measure other forms of disturbance. The VCS requires that methodologies provide guidance on the *ex post* calculations of all carbon stock loses throughout the entire project area, not only those from specific disturbances. For example, it is not clear how this methodology would account for carbon stock losses from wind disturbance, or large scale pest infestations. (**CAR 25/10**)
- In the Fire and Uncontrolled deforestation sections of Table 5, the parameters are described as "observed", however it would seem from the units associated with each parameter that these are actually measured. Furthermore, measurements would be required for the calculation of carbon stock loses from these disturbances.
- ID Number "AT" describes the total annual harvest area. It is not clear how this parameter is used. Fundamentally, this methodology is to be employed on those lands where proposed harvesting is simulated using guidance from section 2.4. It is not clear how

remotely sensed data will be used to measure the parameter $A_{HARVESTi}$, as it appears within the text of the methodology that this is determined from the formal management plans (that must meet the VCS requirements as noted within the methodology that projects must meet VCS IFM LtPF requirements). This is a significant non-conformance, creating confusion as to how the baseline is projected.

As the table does not differentiate between parameters used in baseline and project scenarios, it is not clear if this is meant to be used in project scenario measurements, where the methodology allows for specified types of active management. However, if this is the case, it is not clear how satellite imagery would be able to detect the very low intensive practices allowed by the methodology. (**CAR 11/10**)

- As noted in sections 3.3 and 5.13, it is not clear how all parameters will be derived. For example, in Table 5 $f_{BUCKINGLOSS}$ is described as measured in the field, however no guidance as to how to do this is provided by the methodology. Specifically, it is not clear how project developers would be able to do this, if they are not harvesting, hence they have nothing to measure. Take the case where an NGO purchases land that was scheduled for harvest, and uses this methodology for the estimation of reduced emissions as an LtPF project. It is not clear how the project proponent in this case, with no history of logging, would measure this parameter. This is true for other harvesting related parameters. (**CAR 12/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 11/10** **CAR 12/10** **CAR 24/10** **CAR 25/10**		

Findings from Second Assessment on 27 October 2010

Table 5 has been removed from the revised methodology as such the issues within this table related to **CAR 11/10** and **CAR 12/10** are no longer relevant, and such the findings from the previous assessment related to Table 5 are no longer relevant. Although, it should be noted that Table 5 has been replaced by parameter tables in Sections 12 and 14. It should be noted that similarly to Table 5, the parameter tables include numerous errors, some of which may be linked to their sourcing from the Ecotrust methodology. For example:

- P.51: It is not clear why measurement procedures are not included for the parameter $A_{BSL,i}$. As noted in section 2.2 above, the methodology includes specific requirements for this parameter, yet it does not include guidance on measurement. As the use of GPS and remote sensing requires measurements, it is not clear why this would then be listed as not applicable in the parameter table.
- P.53: The parameter D_{DW} is included in the tables, but it is not clear how this parameter is applied within the methodology.
- P.$D_{n,l,t}$: This parameter is not included within the methodological equations. This is also true for the parameters L and N.
- P.53: The parameter tables within this page are joined together.
- General: not all of the input parameters denoted with the letter "f" are included within these tables. It is not clear why only some parameters are included and some are excluded. For example, as $f_{HARVEST,t}$ from the baseline equations is not included in the tables in section 12, is it then assumed that this parameter is monitored. If so, it is not clear how the portion of harvest in the estimated baseline scenario would be monitored. This is true for a variety of other parameters, as only one parameter was presented here for illustrative purposes.

- Many of the parameter tables in Section 14 do not have any inputs in the "measurement procedures", as such it is not clear if this is an error, or if not measurement procedures are required.
- P.57-58: Height and DBH are included, yet these parameters are not included within the equations. It is assumed that these parameters are included for use in allometric equations or as inputs to simulation models, however this is not clearly specified. Furthermore, the Height parameter table includes a QA/QC procedures row that no other table includes, and it is blank. (**CAR 31/10**)

Additionally, it should be noted that the revised methodology includes a process for the calculation of biomass loss in the project scenario. Section 9.3.2 of the methodology outlines the procedure for the calculation of carbon stock loss from natural mortality, commercial round wood felling (as a small portion of commercial harvesting is allowed within the methodology), and incidental sources. It should be noted that the numbering of this list in section 9.3.2 begins at 4 for no apparent reason.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 24/10 (Closed)** **CAR 25/10 (Closed)** **CAR 31/10**		

Findings from Third Assessment on 23 December 2010

The tables in Sections 12 and 14 have been significantly revised. They now include consistent information for the parameters listed, with one minor exception. On p.58 the parameter tables for $A_{BSL,I}$ and $\Delta C_{,t}$ do not include the row "Used in", which is included in all other parameter tables. This is not a significant issue, and as such **CAR 31/10** will be closed, however this issue will be highlighted as **OBS 12/10**.

Information has been added to the tables indicating that height and DBH are used in calculation aboveground biomass in sections 13.2 and 9.2.1. Presumably these would be used for both volumetric and allometric estimates of biomass, though this is not stated explicitly.

One peculiarity in the tables in Section 12 and 14 is that the "measurement procedure" row is blank for all but a few of the parameters. This seems like a missed opportunity to provide valuable information to project developers, helping them understand and connect the entire process, from measurement, to parameter generation, to use in the equations. It seems inconsistent to provide measurement information for just a handful of parameters, selected for no clear reason, while leaving the rest blank. (**OBS 13/10**)

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 31/10 (Closed)** **OBS 12/10** **OBS 13/10**		

Findings from Final Assessment on 04 April 2011

The revised methodology remains in conformance with this criterion. Additionally, the parameter tables for $A_{BSL,I}$ and $\Delta C_{,t}$ have been revised to include the row "used in". Additional information has been provided to some of the parameter tables included in section 12 and 14, however, numerous parameter tables, such as $f_{BSL,NATURAL,I,t}$ and $f_{BSL,HARVEST,I,t}$ still do not include guidance in the "Measurement procedures" row. As noted in the findings of the previous report, this is not a material error; however the findings related to **OBS 13/10** in the 23 December 2010 assessment report are still relevant.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**OBS 13/10**		

5.18 The methodology shall use metric tonnes as the unit of measure and shall convert the quantity of each type of GHG to tonnes of CO_{2e} using appropriate global warming potentials.

Findings from First Assessment on 7 September 2010			
The methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Second Assessment on 27 October 2010			
The methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

5.19 The methodology shall be compatible with the project type specific rules in the VCS Tool for AFOLU methodological issues for the estimation and monitoring of GHG benefits (See II. Step 6, Estimate and Monitor net GHG Benefits, paragraphs 28, 29, 30 & 31)

Findings from First Assessment on 7 September 2010			
The methodology is in conformance with paragraphs 28 and 29 of the VCS Tool for AFOLU Methodological Issues as rotational forestry is not included within allowed project activities. Criterion 30 is only applicable to ALM projects. See findings from 5.20 of this report regarding the methodologies non-conformance with paragraph 31 of the VCS Tool for AFOLU Methodological Issues.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See section 5.20		

Findings from Second Assessment on 27 October 2010			
The findings from the previous assessment are still relevant.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See section 5.20		

Findings from Third Assessment on 23 December 2010			
The revised methodology now includes explicit guidance on quality control and assurance in section 13.2.4 of the methodology. Additionally, section 11.4 of the methodological process for the estimation of uncertainty has been significantly revised. Findings related to these revisions are discussed in section 5.20 below, however the methodology is now in conformance with this criterion.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Quality Control and Uncertainty (ex-ante and ex-post)

5.20 The IPCC 2006 Guidelines shall be followed in terms of quality assurance/control and uncertainty analysis. (II. Step 6, Estimate and Monitor net GHG Benefits, paragraph 31)

Findings from First Assessment on 7 September 2010			
See comments related to uncertainty in sections 5.4 and 5.14, as well as those related to inventory validation in section 5.1. Further, section 3.10 of the methodology refers to the IPCC 2006 Guidelines regarding uncertainty analysis. However, it does not require that at a minimum these guidelines are followed. The methodology provides a descriptive approach of the types of ways to analyze uncertainty, however there is no specific guidance on the calculation of uncertainty. (**CAR 18/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 18/10**		

Findings from Second Assessment on 27 October 2010			
As noted in 5.4 and 5.14 above, the revised methodology now includes Section 11.4 regarding uncertainty. However, issues within the calculation of uncertainty were found during the assessment (see 5.4 above).			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 18/10**		

Findings from Third Assessment on 23 December 2010
As noted in section 5.4 above, section 11.4 of the methodology has been significantly revised to include a much more robust uncertainty calculation process than in previous versions. This process is partly based on the Climate Action Reserve's Confidence Deduction module, and is adapted for use in this methodology. It should be noted that in the first paragraph of section 11.4 the methodology acknowledges potential sources of uncertainty, which is a very useful tool for project developers when assessing high risk areas of uncertainty. However, not included in this list are models, which are a key component of the methodological process for the estimation of GHG emissions reductions and/or removals. (**OBS 14/10**)

Step 1:
The revised methodology includes a step-wise process for the estimation of uncertainty. In the first step, the uncertainty associated with model error is estimated. It should be noted that in equations 60a and 60b the parameters $Y_{d,l,i}$ and $Y_{m,l,i}$ are used, and defined. However, the subscripts "d" and "m" are not defined with in the parameter description. As these parameters are not included within section 12 or 14, no additional information as to the definition of these subscripts is provided. (**CAR 12/10**)

Step 2:
In Step 2, the inventory error at a 90% CI is estimated. As part of this step, the term SE is used in equation 60c, but is described below the equation as SE_i. It is not clear if the additional subscript "i" is a typo. Additionally, the parameter "N" is used in equation 60c, and this parameter is not defined in the parameter definitions below the equation, as such it is not clear what N represents. (**CAR 12/10**)

Step 3:
In this step, the total estimated error is calculated by summing the model and inventory error estimated in Steps 1 and 2. This value is then transferred into the uncertainty factor (applied as a deduction in equation 59 in order to calculate the number of actual VCUs earned) following the process outlined in Table 4.

In general, the revised uncertainty calculation process outlined in section 11.4 of the methodology was found to be much more robust than previous versions. With the exception of the minor parameter description errors highlighted in Step 1 (see **CAR 12/10**) and 2 (see **CAR 12/10**), the outlined process was found to sufficiently meet the IPCC 2006 guidelines for the calculation of uncertainty. As such **CAR 18/10** is closed.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 12/10** **CAR 18/10 (Closed)** **OBS 14/10**		

Findings from Final Assessment on 04 April 2011
Section 11.4 has been revised and now specifically identifies modeling error as an additional source of uncertainty associated with GHG assertion calculations. Step 1: Additional review of the methodology clarified that the subscripts "d", "m" and "p" are used in equations 60a and 60b to identified the "area weighted **d**ifference", "carbon storage **m**easured", and "carbon storage **p**redicted" respectively. As such, additional clarification is not required to address the findings from the previous assessment report. To further clarify this, the revised methodology has included additional guidance in the parameter definition of y_d on p.56. Step 2: The parameter "N" in equation 60c is now defined in the revised methodology in the parameter descriptions following Equation 60c. The revisions to Step 1 and 2 of the methodology were found to be sufficient to address the findings relevant to **CAR 12/10** identified in the previous assessment. As such **CAR 12/10** is closed.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 12/10 (Closed)**		

5.21 The methodology shall provide guidance for the establishment and application of quality management procedures to manage data and information, including the assessment of uncertainty, relevant to the project and baseline scenario. (VSC 2007.1, 6.5.4)

Findings from First Assessment on 7 September 2010			
The methodology states in section 3.10: "*Each project **should** develop an uncertainties assessment which outlines the key uncertainties and sources of potential error in the project, mitigation methods, and related monitoring methods which serve to rapidly reduce uncertainty with field tested site data."* The use of the term "should" implies that it is not mandatory. This is not in conformance for project developers with the minimum VCS requirements noted in section 6.5.4 of the VCS which requires conformance with ISO 14064-2:2006, clause 5.9. The VCS states: "*The project proponent **shall** establish and apply quality management procedures to manage data and information.*			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**OBS 02/10**		

Findings from Second Assessment on 27 October 2010			
The revised methodology requires a QA/QC plan (per Pearson *et al.,* 2005) and recommends the IPCC GPG.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Third Assessment on 23 December 2010			
The revised methodology includes section 13.2.4 which outlines QA/QC methods to be employed by project developers. This was found to be sufficient to meet this criterion.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
The revised methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

6 Leakage:

The methodology shall contain an approach for calculating leakage that is appropriate and adequate.

6.1 Leakage is defined by The VCS Tool for AFOLU Methodological Issues as, "any increase in greenhouse gas emissions that occurs outside a project's boundary (but within the same country), but is measurable and attributable to the project Activities". Its effects on all carbon pools shall be assessed and significant effects taken into account when calculating net emission reductions. Accounting for positive leakage is not allowed. (II. Step 5, Assess and Manage Leakage, paragraph 18)

The methodology shall assess and account for leakage in accordance with the project type specific rules in VCS Tool for AFOLU methodological issues (II. Step 5, Assess and Manage Leakage, paragraphs 20, 21, 22)

The methodology shall identify all possible leakage sources and provide mathematically correct procedures to quantify their effect on the net GHG benefits of the project.

Findings from First Assessment on 7 September 2010			
Leakage related to project activities is described in section 2.6 of the methodology. The methodology refers to "an optional default table of leakage reduction factors" that project developers may prefer to use. However, the table included in the VCS Tool for AFOLU Methodological Issues is only specific to market leakage, and does not account for activity shifting leakage. Further, the VCS includes additional IFM specific guidance in number 20: "*IFM project developers must demonstrate that there is no leakage within their operations – i.e. on other lands they manage/operate outside the bounds of the VCS carbon project*." This type of leakage is referred to as activity shifting leakage, and is described in number 1 of section 2.6 in the methodology. The methodology includes high level guidance to demonstrate that activity shifting leakage is not occurring, and requires an assessment of the recent operation on the property by both the project developer and other property users. Further the methodology requires an assessment of anticipated local, regional, and sub-national labor market capacity to absorb displaced workers, and an evaluation of expected impacts of leakage mitigation efforts. These are all valid points, however the methodology provides no guidance as to how to conduct these assessments. Further, the methodology includes no guidance on the actual quantification of activity shifting leakage, and how this calculated value is incorporated into the methodological equation logic. Additionally, the methodology does not provide a process for the identification of potential activity shifting leakage agents, but rather defers to quality assessments with no guidance as to how to conduct such assessments. (**CAR 26/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 26/10**		

Findings from Second Assessment on 27 October 2010
As noted in Section 1.3 above, the methodology uses the following applicability condition: "*Projects which can demonstrate there will be no leakage through activity shifting to other lands owned or managed by project participants outside the project boundary*."

It is understandable why the methodology has chosen this path given that the VCS standard requires IFM project developers to demonstrate that there is no leakage within their operations. However, through the use of this applicability condition, the methodology removes a process for dealing with those scenarios where activity shifting leakage does occur. Additionally, the VCS standard states on p.26 of the VCS Guidance for AFOLU Projects:

"*IFM project developers are responsible for demonstrating that there is no leakage within their operations – e.g., on other lands they operate outside the bounds of the specific project. The project developer must demonstrate to the VCS verifier that the management plans and/or land-use designations of other owned lands have not materially changed as a result of the IFM project (e.g., increasing harvest rates, or clearing lands that would otherwise have been set aside) because such changes could lead to reductions in carbon stocks or increases in GHG emissions. At each verification, documentation must be provided covering the other owned lands where leakage could occur, including, at a minimum, their location(s), existing land use(s), and management plans."*

On page 56 of the methodology (note this section is labeled 3.1 but it is embedded within section 13), it states:

"*Activity shifting is excluded by eligibility, so no additional monitoring is required*."

It is not clear then how evidence will be gathered to present to verifiers, as required as per the VCS Guidance for AFOLU Projects citation above. Additionally. Step 2 of Section 10.1 requires that project proponents shall demonstrate that there is no activity shifting leakage, however, as no monitoring is required it is not clear how this would be done throughout the project crediting period. Further, #2 within Step requires records from the "with-project time period", which seems to contradict the fact that monitoring will not be done. Section 10.1 does not clearly articulate the time period through which demonstration of no activity shifting leakage will be required.

Furthermore, the use of activity shifting leakage within the applicability conditions creates possible scenarios where a project would cease to conform to the methodology mid-way through the project crediting period. As the VCS does not have a mechanism to account for this, the methodology must include a process for which carbon stock losses associated with activity shifting leakage will be accounted for.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 26/10**		

Findings from Third Assessment on 23 December 2010
The methodology has been revised to clarify applicability criteria 7, specifying demonstration of no activity shifting leakage as an eligibility requirement. A new footnote (#4) provides guidance to project developers, but largely defaults to the VSC methodology revision process if activity shifting leakage is found later. Section 10.1 provides general guidance on the types of procedures that could be used to quantify activity shifting leakage prior to project initiation, including historical information and conformance with management plans. Furthermore, section 13.3 mandates that annual monitoring of activity shifting leakage is conducted following those criteria outlined in section 10.3 of the methodology. Through acknowledging the limitations of the methodology, and outlining a clear process for those projects where activity shifting leakage is detected through the required monitoring process outlined

in 13.3, the methodology now includes a clear process for assessing activity shifting leakage, as such **CAR 26/10** is closed.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 26/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

6.2 The methodology shall account for market leakage if timber production is significantly affected, even if the illegal production is prevented or reduced. (II. Step 5, Assess and Manage Leakage, paragraphs 23, 24, 25, 26 and 27)

Note that the VCS provides a default table of market leakage deductions that can be referenced by a methodology.

Findings from First Assessment on 7 September 2010			
Similarly to the findings noted in 6.1, the guidance present in the methodology on p.26 regarding the quantification of market effects leakage is not sufficient. The methodology does not provide a quantitative process for the calculation of market effects leakage, and how this calculated value feeds back into the methodological equations to ultimately calculate the net GHG benefits of the project activities. Conversations with the methodology developers on Tuesday August 31st, confirmed that the methodology does not intend to use default market leakage values from the VCS standard. If default values are not used, the methodology must provide clear guidance for the quantification of market leakage effects. The VCS Tool for AFOLU Methodological Issues states in number 26: "*Instead of applying default market leakage discounts (from Table 2), project proponents may opt to estimate the project's market leakage effects across the entire country and/or use analysis(es) from other similar projects to justify a different market leakage value.*" The methodology does not provide a process for the estimation of project market leakage effects across the entire country and/or reference other projects. (**CAR 27/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 27/10**		

Findings from Second Assessment on 27 October 2010			
The methodology describes criteria and procedures for measuring market leakage (Section 10.2). Users of the methodology can select either a) VCS Default values, b) CAR formulas if the project is based in the US, or c) determine it specifically for the project using variables suggested by the Developer. For option (c), Table 5 outlines a risk analysis to identify associated risks with market leakage. These risks are then used in a semi-arbitrary numeric scale based on qualitative risk assessment, in a similar context to the VCS 2001 Tool for AFOLU Non-Permanence Risk Analysis and Buffer			

Determination. The risk analysis determines the proportion of the VCS default buffer determinations that can be deducted as a result of international leakage.

It should be noted that errors were found in the calculation of the International Leakage Factor in relation to the example provided in footnote 21. These errors were discussed with the Methodology Developer on 26 October 2010, and it was acknowledge by the Methodology Developers that inconsistencies between the ILF parameters and footnote 21 existed. Furthermore, the Methodology Developer noted that revisions to Table 5 (Market Leakage Table) have already begun, including the removal element 6.

Following the application of the ILF to the VCS default buffer determination, deductions are made relative to identified elements L3 through L6 (noting that L6 will likely be removed). As the numbers associated with these deductions are not founded in empirical evidence, the audit team finds that more conservative deductions shall be required unless the deductions can be defended with empirical evidence. For L3 deductions of -5, -3 or 0 are used. As is the case with numerous "market condition" descriptions within Table 5, failure to define key terms results in ambiguity. For instance in L3, the term regional is not defined. If a forest was adjacent to federal lands, where allowable cuts determined primarily by non-market factors were present, the project would automatically be granted a 5% deduction. However, this does not take into consideration, the project area may be a different forest type, producing a different product, and as such the relation to market effects in adjacent lands is irrelevant.

For L4 deductions of -5, -3 or +5 are used. This factor does not include what is legally available (specifically in the second option). Furthermore, this is an oversimplification of the likely transfer in many countries from private concessions to concessions on public lands, and the subsequent reactionary speed of the transfer of these concessions. Additionally, it is not clear how the availability of unmanaged/inactive private mature forests will be acquired. This information may be available and of high quality within some regions of the world, but may not be available or of unreliable quality in other boreal and temperate regions. As no guidance is provided regarding the validation or sourcing of data, it is not clear how this can conservatively be used to potentially reduce market leakage buffers by 5%.

L5 and L6 appear to be related to activity shifting leakage rather than market leakage. As such, it is not clear why deductions would be made from the market leakage for lower risk in activity shifting leakage, especially when activity shifting leakage is not allowed in IFM projects. As such it is not clear how this does not represent a double counting in the deductions associated with activity shifting leakage.

Finally, equation 50 applies the calculated leakage associated with project activities. This equation is listed as:

$ERy = ERy,GROSS + LEy$

It is not clear why leakage LE_y is being added to the gross difference in the overall annual carbon change. This does not result in a net GHG emissions reduction as is described in the parameter description of ER_y on p.50.

Conformance	Yes ☐	No ☒	N/A ☐

CAR/OBS	**CAR 27/10**

Findings from Third Assessment on 23 December 2010			
The revised methodology still includes three procedures for the calculation of market leakage. Option 1, described in 10.2.1 was revised to reflect the VCS Default Market Leakage defined in the 24 May 2010 VCS Program Update. Option 2 defers to the use of the Climate Action Reserve Market Leakage formula. The use of this option is restricted to only those projects within the eligible CAR jurisdictions, and as such was found to be appropriate. Option 3 was significantly revised from the previous version of the methodology. In order to address those issues identified in the 27 October 2010 assessment, those sections where empirical evidence to justify additional deductions from the required market leakage value, were removed. Option 3 now includes two steps; the first step is to identify the portion of the likely leakage that will be outside of the national boundaries. This process was found to be sufficient given that project developers are able to find the appropriate data required to conduct the assessment, and as this was a precursory requirement for the application of Option 3, this was found to be appropriate. The second step of this option requires the project developer to determine a weighted average of the relative VCS default values depending on where the market leakage is expected to occur (specifically identifying those forests of lower, equal, or greater biomass ratios). As both of these steps are founded in empirical evidence, and are verifiable, the process for the estimation of market leakage outlined in section 10.2 of the revised methodology was found to be sufficient. As such **CAR 27/10** is closed.		
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 27/10 (Closed)**		

Findings from Final Assessment on 04 April 2011			
The methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

7 Monitoring:

7.1 The methodology shall select or establish criteria and procedures for selecting relevant GHG sources, sinks and reservoirs for either regular monitoring or estimation (VCS 2007.1, S6.5.1).

Findings from First Assessment on 7 September 2010
Section 3.1 of the methodology presents the guidance on the three primary monitoring needs for implementing an IFM-LtPF Project: 1) Land use/Forest changes 2) Forest Biomass monitoring 3) Ex ante Baseline Scenario Monitoring The descriptive guidance here does not provide a clear approach for the monitoring procedures, and how monitoring data will be fed back into the methodological equations to calculate carbon

stock changes. Specifically, what parameters will be monitored? How will these monitored parameters feed back into the methodological equations?

It is not clear if Table 5 is specific to parameters to be used in monitoring. The Table 5 heading states: "Data necessary for determining the baseline net GHG removals by sinks". As the table includes multiple literature values used as default values, it appears that this is not a specific list of parameters to be monitored.

The monitoring methodology presents guidance on the sampling design, and multiple options are offered to the project developers. The methodology states in section 3.2:

"*It is expected each project will have a different land use patterns and data availability, and therefore each will develop an efficient and effective combination of remote sensing, field monitoring, and field sampling to meet the IPCC guidelines (IPCC 2000), (IPCC 2003)* ***or other method providing similar statistical accuracy and precision.****"*

During a phone conversation with the methodology developers it was explained to RA that the goal of the methodology was to be as widely applicable and flexible as possible. Hence the rational for adding caveat statements such as the last option in the quote above. However, by doing this, and not providing a clear process for the assurance of the use of conservative measures, it is not clear how the methodology presents a conservative approach for the quantification of net GHG emission reductions. Furthermore, using qualitative statements such as "similar statistical accuracy and precision", allows for potential loop-holes within the methodology. If the methodology intends to use statements such as this, it must provide additional guidance for the selection of appropriate techniques.

Additionally, the methodology provides no quantitative guidance on the degree of confidence, accuracy, or other assessment criteria of the rigor and robustness of monitoring data. As written, the monitoring section provides no concrete guidance on the development of a monitoring plan, no requirements of the accuracy of monitoring parameters, no specification of which parameters shall be included in the monitoring plans, and no guidance on the periodicity of monitoring.

Finally, it is not clear how leakage will be monitored and as there is no clear guidance on the application of ex post calculations, it is not clear how carbon stock losses from the entire project area will be calculated. (**CAR 28/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 28/10**		

Findings from Second Assessment on 27 October 2010

The Methodology Document has a section on Monitoring (Section 13) and refers to the elements of a monitoring plan. However, key monitoring terms and elements are also woven into the document which is difficult to clearly follow. For example Section 9.3.1 states that data in models (for *ex ante* and *ex-post* calculations) will "*most likely include inputs from forest inventory data updated from monitoring plots*". The methodology also states that prism or fixed radius plots can be used (see section 9.2.1).

Section 13 of the methodology includes guidance on a variety of key components of project activities. Included in Section 13.1 is a list of guiding principles for project monitoring including:

assessment and documentation of project boundary, establishment of SOPs and QA/QC protocols for forest inventory, and maintenance of a forest management plan.

Furthermore, Section 13.2 includes guidance on the stratification of the project area, as well as the process for updating project strata. Included in this section is guidance for the establishment of a sampling framework following the guidance of the latest version of the CDM Tool Calculation of the number of sample plots for measurements within A/R CDM project activities. With the one exception that temporary plots are acceptable for *ex post* monitoring.

Finally the section includes guidance on the monitoring of leakage. However see Section 6.1 above regarding the omission of monitoring of activity shifting leakage.

In addition to the prescriptive guidance provided in Section 13, Section 14 of the methodology includes a list of data and parameters to be monitored. Though it should be noted that numerous errors were found in this section (see findings in 5.17 above).

Recognizing the revisions to Section 13 and 14, the audit team finds that **CAR 28/10** can be closed, however it should be noted that concerns with the calculation of *ex post* carbon stock changes as well as errors within the parameter tables included in Section 14 were noted earlier in this report.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 28/10 (Closed)**		

Findings from Third Assessment on 23 December 2010
Section 13 of the methodology has been revised, however these revisions represent an improvement on the previous version which was found to be in conformance with the VCS requirements. The revised methodology includes greater guidance on the sampling design, and has replaced the reference to the CDM tool to a reference to Pearson, Brown and Birdsey 2007 for the calculation of the number of sampling plots. Additionally, the methodology includes greater guidance on the use of permanent sampling plots, and QA/QC procedures. Additionally, section 13 includes guidance on the monitoring of leakage (both activity shifting leakage and market leakage). However, as noted in section 1.3 above, there is not guidance on the monitoring of carbon stock loses from illegal logging. Specifically, the methodology states in footnote 3 on p.8 that "if project conditions change during the project duration…." projects would no longer be eligible to use the methodology without a revision. However, it is not clear how such a change would be detected without a clear process for monitoring impacts of illegal or unplanned logging and fuelwood removals. See section 1.3 above for more detailed findings. However, in general, the procedures for monitoring (with the exception of those related to the applicability criteria outlined in section 1.3 above) were found to be sufficient to meet this criterion.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011
The revised methodology includes significant revisions to section 13 of the methodology. The revised section 13 was found to remain in conformance with the VCS standard, and revised sections were found to add clarity to the monitoring procedures and requirements outlined in the methodology, as such the revised methodology remains in conformance with this requirement.

Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

7.2 The methodology shall contain a procedure to monitor and document the implementation of the project on land areas within the project boundary.

Findings from First Assessment on 7 SEPTEMBER 2010			
As noted in 7.1 above, the methodology does not include a procedure to monitor and document anything related to the project or baseline, but rather presents high level guidance regarding those considerations that should be accounted for during the development of a project specific monitoring plan. As such, the methodology does not include a procedure to monitor and document the implementation of the project on land areas within the project boundary. (**CAR 28/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 28/10**		

Findings from Second Assessment on 27 October 2010			
See findings in 7.1 above.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 28/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
See findings in 7.1 above.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
As noted in 7.1 above, the revised methodology includes revisions to the monitoring section of the methodology which were assessed by the audit team and found to be in conformance with the VCS 2007.1 standard.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

7.3 The methodology shall contain appropriate and correct sampling design procedures for the ex-post calculation of actual GHG emissions and determination of the ex-post baseline GHG emissions by sinks (if required). The sampling design may, include determination of number of plots, and plot distribution, etc.

Findings from First Assessment on 7 September 2010
See findings from 7.1 and 7.2. As noted above, clear guidance is not provided. Regarding the development of a sampling design, the methodology states: "*The "Sourcebook for Land Use, Land-Use Change and Forestry Projects" (Pearson, Walker, & Brown 2005)* ***can*** *provide additional guidance for methods and procedures to produce accurate and precise estimates of changes in carbon stocks. (Pearson, Brown & Birdsey 2007)* ***can*** *provide additional guidance on field measurement techniques for carbon."* Through the use of qualifying statements such as "can" the methodology assures that it provides no procedural guidance. Section 3.2 includes no requirements, but rather lists several helpful

documents (see 7.1 for more findings related to this). (**CAR 28/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 28/10**		

Findings from Second Assessment on 27 October 2010			
Section 13 of the methodology provides clear guidance for sampling design. As noted in section 7.1 above, section 13.2.2 defers to the latest version of the CDM Tool for the Calculation of the number of sample plots for measurements within A/R CDM project activities.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 28/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
As noted in section 7.1 above, the revised monitoring section provides clear guidance to project developers, and was found to be sufficient to meet this criterion.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
As noted in 7.1 above, the revised methodology includes revisions to the monitoring section of the methodology which were assessed by the audit team and found to be in conformance with the VCS 2007.1 standard.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

7.4 The monitoring plan in the methodology shall be compatible and consistent with the proposed baseline methodology and be described in an adequate and transparent manner.

Findings from First Assessment on 7 September 2010			
As no specific monitoring plan is included in the methodology, it is not possible to assess the compatibility of such a plan with the proposed baseline methodology. (**CAR 28/10**)			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 28/10**		

Findings from Second Assessment on 27 October 2010			
The proposed monitoring guidance does not conflict with the proposed baseline methodology. It should be noted that the concerns with *ex post* calculations were noted earlier in the report, however these concerns do not affect the compatibility of the monitoring section with the baseline methodology.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 28/10 (Closed)**		

Findings from Third Assessment on 23 December 2010
The monitoring guidance in section 13 of the revised methodology is compatible and consistent with the proposed baseline methodology. It should be noted that in section 5.8 above, one observation was raised regarding the updating of the baseline throughout the crediting period.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011			
As noted in 7.1 above, the revised methodology includes revisions to the monitoring section of the methodology which were assessed by the audit team and found to be in conformance with the VCS 2007.1 standard.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Note: The monitoring methodology and results will determine the ex-post emissions estimation for the baseline, project emissions and leakage which are assessed in the sections above.

8 Data and parameters:

8.1 The methodology shall have appropriate procedures for how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.)

Findings from First Assessment on 7 September 2010

As noted above, a variety of issues were identified within those parameter and data used in the methodology (see findings in 3.3 and 5.13).

Typographical errors

P. 14, Section 2.4.4.1.5. There appears to be a typo or place where they meant to add actual literature references. For example it says, “Provide equations for Canadian Forests” (first paragraph on page 14). The same sentence needs clarifying which currently says “for from biomass-based ecosystem simulation models”.

P. 14. 2.4.4.1.6 Last paragraph. There may be a typo with the word “fines”.

P. 18. Section 2.4.4.1.11. $BLT_{cwdecay}$ There may be a typo with the word “transfer”

P. 28. Section 3.2. First paragraph should be clarified. Second sentence of the second paragraph starts with a parenthesis ()

P. 39. Section 3.10. Paragraph starting “Further, project proponents….”, second sentence should be clarified.

Parameter labeling

The methodology does not consistently label all parameters used in each equation. The methodology consistently includes the description of the dependent variable within each equation embedded in the text above the equation, instead of including the description in the parameter list below the equation as is done for the independent variables. By not including all parameter definitions immediately below each equation, it is very difficult for project developers to follow the linkages between each equation. Examples of parameter labeling can be seen in approved CDM A/R methodologies such as AR-AMS00001. (**CAR 29/10**)

Finally, as Table 5 includes additional information specific to parameters, the table must clearly and consistently describe the parameters in accordance with how parameters are described within the text (see **CAR 24/10**)

Parameter accuracy

P. 14. E.3.2.7. Methodology Developer shall provide more clarity on the units being used for example "1-$f_{ACTUALi}$". Since this equation (and many others in the document) use a combination of dry matter, tonnes, carbon, & proportions it is difficult to determine if they are correct or not. For example, E.3.2.7 –$LB_{FUELWOOD}$ units are not defined. $A_{HARVESTi}$ is in hectares, AGB_i & BGB_i are tonnes, 1- $f_{ACTUALi}$ & $LB_{FUELWOOD}$ are proportions. For many of these parameters, the methodology does not provide sufficient detail and literature references as to how they are to be obtained. Therefore, there is no assurance that they are conservative. Table 3 on p. 21 offers examples of several parameters but they may not be conservative globally. Table 4 on p. 22 provides default values for several parameters, however it is not clear how these are conservative globally. Specifically, milling efficiencies which vary drastically by country and region hence it is incorrect to assume one constant default value globally. (**CAR 12/10**)

P. 16. Section 2.4.4.10 and E 3.2.11 units shall be defined by the methodology. Throughout the document, many of the equations use "d.m multiplied by carbon fraction (CF)" for the calculation of carbon. However the equations do not seem to be consistent in all cases. Sometimes (d.m * CF) is used, in other cases just tonnes per hectare, sometimes tonnes C per hectare. (**CAR 12/10**)

P. 18. Section 2.4.4.1.10. The methodology states "*This decay factor might be specific to a given forest type*". It is not clear where this parameter is derived. No guidance is provided within the text or table 5. (**CAR 12/10**)

Data references

P. 39, Section 4.0 contains headings for variables, acronyms, and references. However with the exception of the references, this section lacks detail. For example, section 4.1 simply says "refer to section 2.4". Section 4.2 (Acronyms) says "refer to VCS program and guidance documents". These sections do not add to the clear presentation of all parameter and definitions throughout the document.

Furthermore, p. 23. Section 2.4.5 refers to "Section 4.3 and 4.4". There is no section 4.4 in the document and section 4.3 contains literature references. In addition, not all literature cited within the text is included in Section 4.3, for example Li et al. 2003 (the source of the root:shoot default value) is not listed. (**CAR 29/10**)

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 12/10** **CAR 24/10** **CAR 29/10**		

Findings from Second Assessment on 27 October 2010

Literature resources are improved. Ambiguity has been removed from most equations and parameters. Tables include clear descriptions of parameters used with the exceptions of those tables included in sections 12 and 14.

As noted in the findings above, a variety of issues were identified within those parameter and data used in the methodology (see findings in 5.17).

Typographical errors

P. 6 and 7 In the definition of *Boreal* and *Temperate* superscripts are not used to delineate the degree marking for the temperatures associated with boreal and temperate forests.

P.12 In Step 2a 1.3.d a reference to Step 3-1a and 3-1b above is made, however these sections are not included.

P. 16 The parameter description of $\Delta C_{BSL,P,t}$ is incorrectly labeled as $\Delta CC_{BSL,P,t}$

P.30 The following equation is not numbered: CLB,i,t = (AGBi,t + BGBi,t) ·CF

P. 31 Numerous strata specific parameters do not include "i" to identify as such. For example see $A_{PRJ,t}$ in equation 28. Also see similar errors in equation 30, 36

P. 48 Footnote 22 is included, but no text is included within the footer. (**OBS 03/10**)

Parameter labeling

The revised methodology includes parameter labels beneath the tables. It should be noted that in latter equations, when parameters are used repeatedly, the tables beneath equations do not include parameter descriptions; however they do refer to previous equations where the parameters are defined. As such **CAR 29/10** is closed.

Furthermore, Table 5 has been removed from the methodology, as such **CAR 24/10** is no longer relevant.

Parameter accuracy

Errors identified in the previous assessment have been corrected in the revised methodology. Furthermore, the revised methodology now clearly labels units associated with each parameter.

Parameter derivation

Two parameters used in the calculation of carbon emissions from harvested wood products are not clearly derived, nor is a clear source for this information included. $C_{HARVEST}$ and $C_{MANUCFACTURE,K}$ are used in equations 22 and 23 respectively. The methodology does not provide a clear source or derivation for these parameters. (**CAR 12/10**)

Furthermore, derivation equations for $\Delta C_{EMITTRANSPORRT,t}$ is not included within the methodology. Rather the methodology includes qualitative prescriptive guidance with example data. It is not clear why equations for the derivation of this parameter are not included. (**CAR 12/10**)

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**OBS 03/10** **CAR 12/10** **CAR 24/10 (Closed)** **CAR 29/10 (Closed)**		

Findings from Third Assessment on 23 December 2010

Typographical errors: (**OBS 03/10**)

P.9 Footnote 4 states that *"[projects] must demonstrate mitigative activities are implemented to come into compliance with the latest VCS guidance…*" As the VCS Standard is a voluntary standard, projects can only demonstrate conformance, as compliance only applies to regulated laws.

P10 Footnote 5 states that emissions sources can be excluded if found to be *de minimis*, however Table 2 states that these emissions sources are excluded, as such testing for *de minimis* would not be required. It is not clear if this is a residual footnote from previous versions.

P11 Step 1 #1 States "Comply with IFP-LtPF…", it is not clear if this is meant to be "IF**M**-LtPF"

P.13 2.a.3.i States "at least 24 month prior", 24 month**s** should be pluralized

P.14 2.c.2.d States "species and log utilization specs…" it is not clear if this is meant to be specifications.

P23 Equation 14b the parameter $\mathbf{Snag}_{BSL,I,t+1}$ does not include all capitals as other parameters. It is not clear if this is meant to be $\mathbf{SNAG}_{BSL,I,t+1}$. The same error exists in Equation 42b.

P.25 Parameter description for $DBG_{BSL,I,t}$ it states "The ex ante estimation of the **decay** of dead…", it is not clear if this is meant to be "**decay**".

P.30 Last paragraph, the parameter $C_{HARVEST}$ is repeated.

P.32 4th Paragraph it states "project activities other than those involving the removal of timber which affect non-diminimis…" It is not clear if this is meant to read "non-de minimis"

P.33 9.2.1 It states "Actual (**ex poste**) annual…" it is not clear if this is meant to read "**ex post**".

P.34 First paragraph, the parameter BTOTAL,I,t is described, however it is not clear why subscripts are not used and if this is meant to be $B_{TOTAL,I,t}$.

P.34 It appears the section heading "9.2.1" is missing from "Dead Organic Matter" subsection header.

P.47 Footnote 24 states "(**refered** to in **Eligibility** criteria 7)" it is not clear if this is meant to be "(**referred** to in **Applicability** criteria 7)"

P.86 First paragraph states "Samples of deadwood in each class **will should** then be collected to determine their density…", it is not clear if the word "**should**" should be removed.

P.86 Last paragraph, the methodology states "Standing deadwood should be measured **as part same** plots used for measuring live trees." This sentence is unclear and should be re-written.

P.86 Last paragraph states "…depending on the degree to which branches **are** twigs are still present" it is not clear if this is meant to be "**and**".

P.90 First parameter table is for "$A_{p,\ ,I,t}$" it appears there is an extra comma within the parameter

label.

Parameter labeling: (**CAR 12/10**)
P.18 Equation 1 Parameter description states "$\Delta CC_{BSL,P,t}$" it appears that the letter C has been duplicated, it is not clear if this is meant to be "$\Delta \mathbf{C}_{BSL,P,t}$"

P.34 First paragraph, the parameter BTOTAL,I,t is described, however it is not clear why subscripts are not used and if this is meant to be $B_{TOTAL,I,t}$.

P.35 Parameter headings for $LBL_{PRJ,NATURAL,I,t}$ and $LBL_{PRJ,FELLINGS,I,t}$ both describe "annual loss of **aboveground** live tree biomass. It appears these parameter descriptions have not been updated since the parameter LBL was revised in the most recent revision to include belowground biomass as well. In other parameter descriptions where LBL is used it is described as live tree biomass.

P.38 The paragraph above equation 37 describes the incidental loss as the additional aboveground live biomass removed; however as $LB_{PRJ,I,t}$ is employed, this is actually calculating all live biomass removed, including belowground biomass.

P.50 Equation 56c.1 in the parameter descriptions, the parameter CF is not defined.

Parameter derivation: (**CAR 12/10**)
The methodology now includes derivations for $C_{HARVEST}$ and $C_{MANUCFACTURE,K.}$ Detail has been added describing a rigorous and readily applicable procedure for calculating $\Delta C_{EMITTRANSPORRT,t.}$

However, several parameters are not clearly labeled (as noted above), and several gaps in derivation still exist. For example, in equation 17c $BGB_{BSL,I,t}$ is described as derived from equation 5b, however, 5b does not include this parameter. The methodology relies on the user to derive this parameter using incremental growth rates. No equation is included where time and area are applied to $G_{BSL,BG,I,t}$ to derive this parameter. The same problem exists in Equation 45c.

Additionally, in section 11.1, the parameter $ER_{y,GROSS}$ is derived in equation 57. In order to derive this parameter the total net baseline scenario emissions are summed with the total net project scenario emissions. It is not clear why these two are added, as $ER_{y,GROSS}$ is described as the difference in the overall annual carbon change between the baseline and project scenario. As such it would be expected that the net baseline emissions would be subtracted from the net project scenario emissions.

As issues are still present with both parameter labeling and derivation, **CAR 12/10** remains open.

Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 12/10** **OBS 03/10**		

Findings from Final Assessment on 04 April 2011
All typographical errors identified in the 23rd December 2010 assessment were corrected. Further, the revised methodology includes numerous corrections to the parameter descriptions throughout the methodology. The revised methodology has addressed all identified errors from previous assessments within the parameter descriptions. As such, **CAR 12/10** is closed. It should be noted that several minor typographical errors are still present in the parameter tables in section 14 (**OBS 03/10**):

p.86 Parameter table for $B_{AG,l,t}$: The parameter label does not include a comma in the subscript between “AG” and “l”.

p.86 Parameter table for $B_{BG,l,t}$: The parameter label does not include a comma in the subscript between “BG” and “l”.

p.89-90 Parameter tables for “$f_{PRJ,SNAGFALLDOWN,l,t}$” and “$f_{PRJ,lwDECAY,l,t}$” include numbering within the parameter label. This appears to be a formatting error within the word document.

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	**CAR 12/10 (Closed)** **OBS 03/10**		

8.2 The methodology shall present equations in a clear, consistent, mathematically correct format which allows data to be traced through them.

Findings from First Assessment on 7 September 2010			
Those equations presented within the methodology are mathematically correct. However, as noted in numerous sections within this report, a variety of parameters are not clearly derived, and complete guidance on the calculation of all carbon pools and leakage is not included within the methodology. Hence, it is not possible to assure the use the equations presented in the methodology in a clear, transparent and conservative manor. Furthermore, by not clearly deriving all parameters or specifying the source for those parameters employing default values from the literature or a specified source, the methodology currently has “gaps” within the equation flow, that would not allow for a project developer to use the methodology.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See list of CAR and OBS		

Findings from Second Assessment on 27 October 2010			
The findings from the previous assessment are still applicable.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See list of CAR and OBS in section 2.2 and 2.3 above.		

Findings from Third Assessment on 23 December 2010			
The revised methodology demonstrates substantial effort invested in clarifying equation/parameter derivation, carbon pool calculation, and leakage estimation. Equation flow is more consistent in this draft, however several minor errors were noted linked to parameter labeling and derivation. These issues were highlighted in section 8.1 above.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See section 8.1 above.		

Findings from Final Assessment on 04 April 2011			
As noted in 8.1, the revised methodology includes multiple corrections to all identified errors in previous assessment reports. As such the methodology presents equations in a clear, consistent, mathematically correct format which allows data to be traced through them, and is in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐

CAR/OBS	No CAR or OBS raised

9 Adherence to the project-level principles of the VCS Program:

The methodology shall adhere to the project-level principles of the VCS Program (VCS 2007.1, 5.1), summarised below and the full principals at the top of this report.

9.1 The methodology shall be compatible with the VCS project level principles, as explained in more detail in section 1.3 of this report. These principles are relevancy, completeness, consistency, accuracy, transparency and conservativeness.

Findings from First Assessment on 7 September 2010			
As noted in the findings above, numerous non-conformances are currently present in the methodology, and as such the methodology is not compatible with the VCS project level principals. Most notably, the methodology does not present a complete and transparent process for the conservative estimation of net GHG emissions.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See list of CAR and OBS		

Findings from Second Assessment on 27 October 2010			
As noted in the findings above, numerous non-conformances are currently present in the methodology, and as such the methodology is not compatible with the VCS project level principals. Most notably, the methodology does not present a complete and transparent process for the conservative estimation of net GHG emissions.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	See list of CAR and OBS in section 2.2 and 2.3 above.		

Findings from Third Assessment on 23 December 2010			
As noted in the findings above, several minor issues still exist with the methodology. However, in general the methodology is in conformance with the guiding project level principles of the VCS. As such this criterion is met.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised.		

Findings from Final Assessment on 04 April 2011			
As noted in the findings above for the 04 April 2011 assessment, all material discrepancies identified within previous versions of the methodology have been resolved. The revised methodology is now in conformance with the VCSA guiding principles identified within section 1.3 of this report.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

10 Special case of previous rejection from other GHG program

10.1 Methodologies rejected by other GHG Programs, due to procedural or eligibility requirements where the GHG Program applied has been approved by the VCS Board; can be considered for VCUs but Methodology Developers in this case shall:

i. document the methodology; and

ii. clearly state in its VCS PD all GHG Programs for which the methodology has applied for approval and why the methodology was rejected, such information shall not be deemed commercially sensitive information; and

iii. provide the VCS Program verifier with the actual rejection document(s) including explanation of why the methodology was rejected (VCS 2007.1, S6.1).

Findings from First Assessment on 7 September 2010			
The audit team is not aware of this methodology being submitted to any other GHG programs. It is not listed on the ACR website, and the Methodology Developers have stated that it has not been rejected elsewhere.			
Conformance	Yes ☐	No ☐	N/A ☒
CAR/OBS	Not applicable		

Findings from Second Assessment on 27 October 2010			
The audit team is not aware of this methodology being submitted to any other GHG programs. It is not listed on the ACR website, and the Methodology Developers have stated that it has not been rejected elsewhere.			
Conformance	Yes ☐	No ☐	N/A ☒
CAR/OBS	Not applicable		

Findings from Third Assessment on 23 December 2010			
The audit team is not aware of this methodology being submitted to any other GHG programs. It is not listed on the ACR website, and the Methodology Developers have stated that it has not been rejected elsewhere.			
Conformance	Yes ☐	No ☐	N/A ☒
CAR/OBS	Not applicable		

Findings from Final Assessment on 04 April 2011			
As noted in previous assessment reports, the audit team is not aware of any previous submissions of the methodology to any other standards.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

11 Public Review

11.1 The Methodology shall be posted for public comment in accordance with VCS guidelines. The methodology developer shall demonstrate how it has taken due account of all and any such comments.

Findings from First Assessment on 7 September 2010
As the public comment period is scheduled to close on the 3rd of September 2010, the current version of the methodology has not included any public comments. Along with the submission of the revised methodology 3GT/ERA Inc. must submit evidence of how any public comments have been addressed. At the time of this report, no public comments have been posted on the VCS website (http://www.v-c-s.org/methodology_ifm.html). Prior to the next assessment RA will confirm with VCS that no

public comments have been received. If no comments on the methodology were received during the public comment period, **CAR 30/10** will be closed. If comments were received by VCS and not yet posted to the website, then 3GT/ERA Inc. must present evidence of a response to all public comments received.			
Conformance	Yes ☐	No ☒	N/A ☐
CAR/OBS	**CAR 30/10**		

Findings from Second Assessment on 27 October 2010

The public comments raised a number of important points, in particular about project applicability. Most of these appear to have been addressed by adding definitional language, however ambiguity remains. Reviewers felt the methodology left open the possibility of subjective decision making and inconsistency among projects. Much of that potential remains deeply imbedded in the methodology, relating to word choices such as "minimal", "may" and "best available". In part this reflects the reality of the rapidly developing science of carbon management and variability in available information, models, and resources that will be encountered in the real world. For that reason some flexibility is beneficial. However, there remains room for greater stringency in the methodology.

A total of six comments were submitted during the public notice period. 3GT/ERA Inc. provided Rainforest Alliance with a summary document describing how each of the public comments received during the public notice period was addressed in the revised methodology. Below are findings relevant to the public comments received. It should be noted that those issues were the audit team has identified as disagreeing with the response submitted by 3GT/ERA Inc. are largely covered by those CARs identified above. As such **CAR 30/10** will be closed with the understanding that those additional CARs identified within the second assessment audit report include those public comments remaining unaddressed in the revised methodology.

<u>Brinkman & Associates Reforestation Ltd.:</u>
Comment 2—lack of clarity on definition of fee simple
Developer response—The applicability criteria have been changed and made clear
RA audit team—Agree

Comment 4 & 18—clarifying terms such as "minimal risk" of significant illegal logging
Developer response—the applicability criteria have been changed and defined
RA audit team—by making illegal logging part of the applicability criteria, creates possibility that the project can be become ineligible if illegal logging does take place. The same is true for fuelwood gathering (per comment CP i below) (see **CAR 03/10**)

Comment 9—Soil carbon accounting should be eliminated
Developer response—Soil carbon is excluded
RA audit team—Agree

Comment 13—Level of accounting & consistency for GPG of LULUCF
Developer response—Working with IPCC Tier III as stated in the methodology document
RA audit team—Agree

Comment 15—ABG and BGB should be determined by stratum not forest type
Developer response—Agree
RA audit team—Agree for AGB and BGB, but terms like "forest polygon" and other "analysis units"

still used in the document and should be clarified per the CARs above.

Carbon Planet Limited:
CP 1—Eligibility of IFM-LtPF if "timber production is a minor component"
Developer response—clarifications made to permissible levels of conservation/protected forest management practices involved in the project scenario
RA Audit team—Agree.

CP 2—definitions of AGB and other carbon pools
Developer response—now clarified in Table 1
RA Audit team—Agree

CP 4—use of "Leakage risk withholding" is not used by the VCS
Developer response—terminology has been changed to "Leakage discount factor" which is correctly aligned with VCS terminology
RA Audit team—Agree

CP 5—Methodology discusses the preparation of a new harvesting plan prior to the carbon project for baseline projection and has suggested robust modeling tools but does not mention the legitimacy of such document and technical validation.
Developer Response—Section 6 now contains an extensive description of the baseline scenario
RA Audit team—Disagree. Section 6 includes unclear guidance as highlighted in the findings above. (see **CAR 09/10**)

CP-(i)—Time value (t) has not been employed in the equations in the document
Developer response—"t" has been included in the sequence of equations to calculate GHG balance to delineate the fact that each stratum is summed per year.
RA Audit team—Agree

CP 7—Equation E.3.2.27 for the calculation of VCU provides an overestimation of carbon emission reductions and is in contrast to text in Section 2.4.5.1
Developer response—VCU calculations have been modified
RA Audit team—Agree

CP 8—Accounting for C losses due to illegal logging and natural disturbance absent in methodology
Developer response—now part of eligibility criteria
RA Audit team—Disagree. See "Comment 4 & 18" above (see **CAR 09/10**)

CP 11 (i)—Document contains ambiguous statements without providing detail
Developer response—We have endeavored to correct this
RA Audit team—Ambiguous terms remain (See Section 3.1)

ClearSky Climate Solutions:
Comment—Methodology does not specify whether or not public lands are eligible.
Developer response—Section 4 specifies public lands are excluded
RA Audit team—Agree

Forest Carbon Offsets and McGuire Woods LLP:
Comment 2—Clarification on definition of upland forest
Developer response—eligibility has been modified to exclude this term

RA Audit team—Agree

Comment 3—Clarify what happens if fee-simple land has a mortgage, lien or is otherwise encumbered and what happens if there is a transfer event during probate?
Developer response—Encumbrances would be issues included in the validation of the project. We have treated the issue similar to the VCS permanence risk tool.
RA Audit team—Agree

Comment 4—Clarify if the project area can be a subset or subdivision of the project owners' property
Developer response—this has been clarified, and a project may be a sub-set of a bigger property
RA Audit team—Disagree, lands defined as "non-forest" per the THLB definition in the Methodology document do not meet VCS Guidelines for IFM eligibility. (see **OBS 05/10**)

The Nature Conservancy:
Comment 4—baseline reassessment Annual monitoring is not required by the VCS and could make the project expensive. With a frequently changing baseline, return on investment in new practices would be uncertain.
Developer response—The baseline is no longer monitored on an annual basis (static baseline for the project length)
RA Audit team—Disagree. Document does not state the use of a static baseline (see section 5.10 above) (see **OBS 06/10**)

Terra Global Capital:
General statement—Methodology provides 'qualitative' and suggestive procedures and not enough qualitative criteria
Developers response—We have thoroughly revised the methodology and hopefully provided much clearer guidance on procedures
RA Audit team—Disagree. See CARs above

Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	See findings and CARs above related to those public comments that remain to be addressed. **CAR 30/10 (Closed)**		

Findings from Third Assessment on 23 December 2010			
3GT and ERA Inc. have provided Rainforest Alliance with a detailed response to each of the public comments. Rainforest Alliance reviewed these responses in the previous assessment dated 27 October 2010. During the current assessment, Rainforest Alliance found no significant changes from those findings reviewed in the previous assessment, with the exception of the issues highlighted in section 5.8 above related to the revision of the baseline (See comments from The Nature Conservancy). The revised methodology in combination with the Methodology Developers response to public comments was found to be sufficient to be in conformance with this criterion.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		

Findings from Final Assessment on 04 April 2011

As identified in the findings from the 23 December 2010 assessment, the revised methodology remains in conformance with this requirement.			
Conformance	Yes ☒	No ☐	N/A ☐
CAR/OBS	No CAR or OBS raised		