METHODOLOGY FOR TIDAL WETLAND AND SEAGRASS RESTORATION

FIRST ASSESSMENT REPORT

ENVIRONMENTAL SERVICES, INC.

ANSI ACCREDITED PROGRAM GREENHOUSE GAS VALIDATION AND VERIFICATION 0600

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Summary:

Environmental Services Inc. was commissioned by Restore America's Estuaries (RAE) to perform the first methodology assessment of the Methodology for Tidal Wetland and Seagrass Restoration in accordance with the VCS Methodology Approval Process, VCS Standard, VCS Program Guide, and the VCS AFOLU Requirements. The Methodology for Tidal Wetland and Seagrass Restoration provides procedures to estimate net greenhouse gas emission reductions and removals resulting from project activities implemented to restore tidal wetlands. Such activities include creating and/or managing hydrological conditions, sediment supply, salinity characteristics, water quality and/or native plant communities.

The purpose and scope of the methodology first assessment was to evaluate whether or not the methodology was prepared in line with VCS program requirements. ESI's assessment included a detailed review of eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, monitoring, data and parameters, and adherence to the project level principles of the VCS program (relevance, completeness, consistency, accuracy, transparency and conservativeness). ESI's assessment also included a detailed analysis of the methodology, literature reviews, technical reviews and RAE's responses to all non-conformity reports (NCR's), clarifications (CL's) and opportunities for improvement (OFI's). The ESI assessment team identified 53 NCR's/CL's/OFI's. All were addressed satisfactorily by RAE during the methodology assessment process. These NCR's and CL's provided necessary clarity to ensure that the methodology was in compliance with VCS rules and requirements.

ESI confirms all methodology assessment activities, including objectives, scope and criteria, level of assurance and the methodology adherence to the VCS Program Version 3.5 and VCS Standard Version 3.4, as documented in this report, are complete. ESI concludes without any qualifications or limiting conditions that the methodology element (Methodology for Tidal Wetland and Seagrass Restoration, version 20150525, 16 October 2015) meets the requirements of the VCSA. ESI recommends that VCSA approve the revisions to the methodology element.

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1 INTRODUCTION

1.1 Objective

This methodology first assessment was performed to evaluate the likelihood that implementation of the methodology would result in accurate calculations and appropriate eligibility criteria for GHG emission reductions and removals as stated by the methodology authors (ISO 14064-3:2006). This report summarizes the findings of the first methodology assessment of the Verified Carbon Standard (VCS) methodology approval process for a methodology element framework, hereafter referred to as the "Methodology." Restore America's Estuaries, referred to as the "Methodology Developer", has commissioned Environmental Services Inc. (ESI), referred to act as the "Assessment Team" to perform an assessment of the Methodology for Tidal Wetland and Seagrass Restoration.

This report presents the findings of a qualified assessment team of auditors and experts in methodologies for GHG emissions or who have assessed the methodology and modules for compliance under the applicable rules of the Verified Carbon Standard. Section 3 below provides the assessment methods and criteria. Section 2.5 presents summary findings of the methodology assessment and Appendix A provides details of individual findings.

1.2 Summary Description of the Methodology

The Methodology outlines transparent and conservative procedures to estimate net greenhouse gas emission reductions and removals resulting from project activities implemented to restore tidal wetlands. Such activities include creating and/or managing hydrological conditions, sediment supply, salinity characteristics, water quality and/or native plant communities.

Emissions reductions and removals are generated by increasing biomass, increasing soil carbon, reducing N_2O and/or CH_4 emissions and reduced CO_2 emissions from soil loss.

The geographic scope is worldwide. A standardized activity method is used for additionality assessment of non-seagrass wetlands in the United States. For projects outside the United States and for seagrass meadows within the US, additionality is assessed through a project method.

Procedures are provided for estimating peat and soil organic carbon (SOC) depletion times and the maximum eligible quantity of emissions reductions from the SOC pool. Various alternative procedures are available for estimating GHG emissions from the SOC pool.

Tree and shrub biomass changes are determined through an adaptation of CDM methodology AR-ACM0003.

Activity shifting, market and ecological leakage are assumed to be zero, through applicability conditions. The land must have been abandoned, or no market crop can commercially be grown on it. Hydrologic connectivity with surrounding areas must be shown to be insignificant (causing no alteration of mean annual water table depths).

2 ASSESSMENT APPROACH

2.1 Method and Criteria

This assessment is based upon standard auditing techniques in line with VCS Requirements to assess the correctness of the information provided. In accordance with VCS rules, a methodology assessment encompasses applicability conditions, project boundary, procedure for demonstrating additionality, procedure for determining baseline scenario, baseline emissions, leakage, quantification of net GHG emission reduction and/or removals, monitoring, data and parameters, and relationships to approved or pending methodologies.

The criteria will follow the VCS program documents located at *http://v-c-s.org/program-documents*. These documents include the following:

- VCS Program Guide (v3.5, October 2013)
- VCS Standard (v3.4, October 2013)
- Program Definitions (v3.5, October 2013)
- Agriculture, Forestry and Other Land Use (AFOLU) Requirements (v3.4, October 2013)
- Methodology Approval Process (v3.5, October 2013)
- Guidance for Standardized Methods (v3.3, October 2013)

2.2 Document Review

A detailed review of the methodology element documentation was conducted to ensure consistency with, and identify any deviations from, VCS program requirements. The methodology was reviewed by all team members. The approach allocated some members to focus on the methodology's adherence to VCS Program Guide, the VCS Standard, VCS AFOLU Requirements and other guidance documents. Others members, including Luis de la Torre (VCS Standardized Methods Expert), Richard Scharf (ESI Soil and Wetland Scientist), Shawn McMahon (VCS Wetlands Restoration and Conservation Expert), and Kevin Markham and (ESI Wetland Scientist) focused on the technical aspects of the methodology and its adherence to currently accepted principles and methods of wetlands science. The final list of documents received and reviewed by ESI is provided in Appendix A.

2.3 Interviews

The objective of the interview process was to resolve requests for clarifications, corrective actions and other outstanding issues which were required as part of the methodology revision assessment. After issuance of a round of NCRs/CLs, conference calls between the assessment team and the authors were arranged to reconcile understanding of the issues. As a guarantee of transparency in the resolution process, concerns raised and responses given were documented in greater detail, given in Section 3.5.

The official opening meeting was conducted on 24 March 2014 between representatives from the methodology developer with authority to approve the Methodology Assessment Plan; the Lead

Validator and Forestry, Carbon, and GHG Services Director from ESI. The agenda of the meeting consisted of review and mutual understanding of the components in the Methodology Assessment Plan including potential revisions, project timeframes and the standardized processes to solicit feedback from parties.

After confirmation of the Assessment Plan, the methodology assessment audit process commenced and led to a Round 1 of Non-conformance Reports (NCRs), Clarification Requests (CLs), and Opportunities for Improvement (OFIs). Additional interviews were arranged, as needed, after the methodology developer addressed NCRs/CLs in subsequent versions of the methodology and the assessment team required additional clarification on changes applied. The table below lists the individuals involved in the major meetings and their organizational affiliation for this first methodology assessment.

Opening meeting on 24 March 2014: Stephen Emmet-Mattox, Dr. Igino Emmer of Restore America's Estuaries and Silvestrum. Shawn McMahon, Janice McMahon and Kevin Markham of ESI.	Methodology assessment plan was explained by ESI and the schedule agreed upon. A short introduction of the methodology was made by RAE.
Informational meeting on 9 May 2014: Stephen Emmett-Mattox of RAE Luis De La Torre VCS Expert and Richard Scharf of ESI	Several NCRs that were issued during the first round were discussed for clarification.
VCS meeting on 4 April 2014: Sam Hoffer of VCS Shawn McMahon of ESI	Discussion regarding the inclusion of peatlands in the methodology.
Closing meeting on **20 October 2015** : Stephen Emmett-Mattox of RAE Janice McMahon of ESI	First Methodology Assessment closing meeting discussed the finalization of the reconciliation process and assessment debrief.

2.4 Assessment Team

The assessment team consisted of qualified individuals linked to the sectoral scope and technical areas of the methodology. The composition of the assessment team operated at several qualification levels:

- Lead Assessor (L)
- Assessment Team Member (TM)
- Assessment Expert (E)
- Assessment QA/QC (QA/QC)

Team Member	Expertise/Experience
Shawn McMahon (L, E)	Senior Project Manager, Lead Assessor, VCS AFOLU - WRC Expert (non-peat). Approved to conduct third-party carbon sequestration validations and verifications under VCS. Specializes in third-party carbon offset validations and verifications, carbon sequestration project development, development and implementation of management plans for enhancement of carbon stocks, development of carbon and environmental asset tracking programs, and team management.
Dr. Guy Pinjuv (TM)	Senior Scientist, Lead GHG Validator/Verifier. Expertise lies in forest carbon growth modeling, carbon project development, forest offset project validation and/or verification and forestry related methodology assessments. Responsible for team management, client coordination, and performance of senior technical project management. Climate Action Reserve Forest and Urban Forest Project Lead Verifier.
Richard Scharf (TM)	Senior Soil Scientist, NCLSS, SC Soil Classifier. Over twenty-two years of experience in a variety of soils-related projects. Duties include managing and conducting soils work for wastewater projects, stormwater projects and wetland delineation. Provides expertise and experience on carbon offset projects/methodologies associated with agricultural land management and/or soil carbon pools.
Caitlin Sellers (TM)	Senior Scientist. Responsible for project management and client coordination; technical services such as wetland delineation, wetlands and wildlife permitting, vegetative community characterizations, mitigation area monitoring studies, forest inventories and assessments, and GHG validations/verifications. Certifications: Climate Action Reserve – Forest and Urban Forest Project Lead Verifier, Climate Action Reserve – General Project Verification, California Air Resources Board – Lead Verifier, Executive Order H2-12-137.

Matthew Perkowski (TM)	Project Forester and Forest Biometrician. Responsibilities include meeting the internal and external client objectives in the fields of forest inventory and sampling, growth and yield modeling, and directly in support of offset validation/verification projects. In addition, he is focusing on streamlining and developing quantitative tools for the GHG group to increase product service value for clients.
Kevin Markham (E)	Wetlands Expert/Assessment Team Member. A Vice President and Senior Manager for ESI, Mr. Markham provides technical oversight and QA/QC for compliance with the CWA, CAMA, NEPS and ESA. He has extensive experience in wetland delineation, assessment, mitigation planning and permitting.
Luis de la Torre (E)	VCS Approved Standardized Methods Expert and VCS-AFOLU Expert/Validation Team Member. Mr. de la Torre is a member of the technical bodies at the UNFCCC and VCS. At UNFCCC he was a member of the registration and issuance team and is a member of both the Methodologies Panel and the CDM Assessor of Accreditation Panel. At VCS he was part of the committee in charge of new additionality guidelines for the voluntary carbon market.
Janice McMahon (QA/QC)	GHG Services Division Director for ESI. Specializes in natural resource management projects including carbon sequestration feasibility assessments, development/implementation of management plans for enhancement of ecosystem services, assessment of GHG emissions and reductions, development of environmental asset tracking programs, GHG validations and verifications, endangered/ threatened species assessments, habitat management plans, and integrated ecosystem services plans. Responsible for leading the Forestry, Carbon, and GHG Services Division, which includes client and team coordination, proposal preparation and review, marketing presentations, maintenance of ESI's ANSI accreditation and management System, and quality assurance and quality control for projects in the United States as well as the international market.

2.5 Resolution of Findings

The process of the methodology assessment involved 2 formal rounds of evaluation by the assessment team and resulted in a methodology version which was in conformance to VCS rules. Findings related to corrective action, clarification requests or other findings were resolved during communication between the assessment team and the methodology developer. More specifically, where noted by the assessment team, the methodology developer implemented corrective actions by amending methodology modules and providing written clarification responses. Types of findings were characterized in the following manner:

Non-Conformance Reports (NCRs) were issued as a response to material discrepancies in a part of the methodology and generally fell into one of the following categories:

- Non-conformance to a VCS program document listed in Section 2.1
- Default values from literature were inaccurately reported.
- Additional information was required by the assessment team in order to confirm reasonable assurance for compliance
- **Clarifications** (CL) were issued when language within a module needed extra clarification to avoid ambiguity.
- **Opportunities for Improvement** (OFI) were issued to the methodology developer when an opportunity for improvement was identified.
- During the course of the methodology revision assessment, 53 NCRs, CLs, and OFIs were identified. All NCRs/CLs were satisfactorily addressed. The NCRs/CLs provided necessary clarity to ensure the methodology was in compliance with the requirements of the VCS. Detailed summaries of each finding, including the issue raised, responses and final conclusions are provided in Appendix A. Selected important findings and points of discussion from all components of the methodology assessment are presented in the table below.

There was a question about the qualifications of the two experts the methodology developer used in support of the methodology	Information provided to the validators demonstrated they had enough peer-reviewed publications, years of experience and academic background to support the methodology.
Several NCRs are pending the approval of another methodology that is currently undergoing second assessment, because the methodology relies on the pending methodology as a reference a number of times.	The methodology assessment cannot be closed until the referenced methodology is approved.
Some clarification regarding accounting for wetland soil materials piled on the surface and the burial of soil materials by hydrological processes in the baseline scenario was requested.	Methodology developers clarified how these situations are to be treated.

3 ASSESSMENT FINDINGS

The methodology was found to be in full compliance with the principles set out in the VCS Standard and other VCS rules and requirements. The new methodology provides a way for determination of soil carbon depletion time in wetland soils, establishing the time limit for claiming emissions reductions for WRC project activities; provides a way to account for soil organic carbon added to the project area via sedimentation apart from soil carbon formed onsite; and a way for

estimation of CH4 and N2O emissions from burns and marsh soils, and accounts for the eventual submergence of project areas due to sea level rise. The assessment team evaluated adherence of the methodology to the VCS Standard and further concluded that the methodology references specific VCS approved methodologies and modules.

The assessment addressed specific issues that arose in the methodology which are pertinent to the principles set forth by the VCS Standard, including relevance, completeness, consistency, accuracy, transparency, and conservativeness.

3.1 Relationship to Approved or Pending Methodologies

This methodology integrates the procedures from one existing VCS methodology, one pending VCS methodology, two VCS modules and a CDM methodology. The list below is a complete list of these related methodologies:

- VCS methodology *Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs* (under development). This methodology only covers domed peatlands in the tropics and not coastal wetlands, nor does it cover non-peat soils. The hydrologic conditions under which the two wetland types exist and form are different, largely because one is controlled at least partially by tides and potentially sediment-laden waters from rivers, while the other exists due to high rainfall and landscape characteristics conducive to poor drainage. Many of the ways in which human activity has impacted coastal versus peat dome wetlands also differ. The main similarity between the two is that some coastal wetlands have a soil material with similar characteristics to that of peat domes. In addition, the Tidal Wetland and Seagrass Restoration methodology deals with lands with no commercial value, while the agents of peat dome degradation are often seeking to conduct a commercial enterprise on these lands. These are different ecosystems facing often different threats. It is therefore more practical and efficient to write a new methodology and borrow from the pre-existing one for the cases when peat soils are present in a coastal wetland project area.

- VCS methodology VM0024, *Methodology for Coastal Wetland Creation*. This methodology cannot be modified to meet the purpose of the RAE methodology. Its purpose is creating wetlands in open water, while the Methodology for Tidal Wetland and Seagrass Restoration is for the restoration of degraded tidal wetlands. Further, the geographic scope of this methodology is the United States of America, whereas scope for the Methodology for Tidal Wetland and Seagrass Restoration is global.

- CDM methodology AR-ACM0003 *Afforestation and reforestation of lands except wetlands.* Does not include wetlands. Therefore AR-ACM0003 does not provide the needed guidance on the manipulation of hydrology nor account for emissions of GHGs from soil, especially in regard to the elevated levels of CH_4 and N_2O that may be emitted from wetland soils. Soil is the primary sink and emissions source in wetland systems. AR-ACM0003 includes soil carbon as an optional accounting pool, but does not account for CH_4 and N_2O.

- VCS module VMD0016 *Methods for stratification of the project area*. This is a module and not a complete methodology that could be reasonably revised.

- VCS module VMD0019 *Methods to Project Future Conditions.* This is a module and not a complete methodology that could be reasonably revised.

The following procedures have been confirmed to not exist within previous methodologies or modules, including:

- Determination of soil organic carbon (SOC) depletion time (SDT).

- Default factors for soil carbon sequestration in marshes and mangroves.

- Distinction between allochthonous and autochthonous SOC

- Establishes a consistent reference plane for SOC estimation

- Default factors for CH4 emissions from wetlands

- Estimation of CH4 and N2O emissions from burns of herbaceous marsh vegetation.

- Accounting for sea level rise in project boundary setting and future project area submergence.

- Calculation of long-term average GHG benefits for ARR activities.

As required the methodology developer has provided a list of the approved or pending methodologies, under the VCS or an approved GHG program, that fall under the same sectoral scope or the same AFOLU project category or combination of sectoral scopes or AFOLU project categories. These are also the methodologies that the Methodology for Tidal Wetland and Seagrass Restoration integrates procedures from. The conclusion of this assessment is that revising any of the existing methodologies would require major revisions and add unnecessary complication to them.

3.2 Stakeholder Comments

No comments on the methodology were received during the public comment period.

3.3 Structure and Clarity of Methodology

The Methodology for Tidal Wetland and Seagrass Restoration was reviewed by the assessment team for clarity and logical consistency in accordance with VCS rules for methodology assessments (Methodology Approval process v3.4 October 2012). Methodology developers have followed the VCS templates closely and have included the specific criteria and procedures in the appropriate sections. The terminology used in the proposed methodology is consistent with the VCS Program and GHG accounting and language chosen is precise. Definitions are defined at the beginning of the methodology for the reader's reference. Specific key terms were used appropriately; must, should, and may to indicate a firm requirement and permissible or allowable

options, respectively. Key words for outlining mandatory requirements are used consistently for permissible or allowable options. Criteria and procedures for the methodology were written by the methodology developers in a clear, concise and coherent manner to allow the project to be unambiguously audited by the assessment team. The notation of the methodology makes sufficient use of VCS rules and procedures. Overall, it is of the assessment team's opinion that the structure of the document meets the strict requirements of the VCS Program.

3.4 Definitions

The key terms defined in the proposed methodology are presented clearly and appropriately in a definition section (section 3) at the beginning of the document for ease of use by project proponents, as the VCS methodology template requires. The comprehensive list of terms relevant to the methodology is ordered alphabetically and definitions are provided. Definitions of key terms are presented concisely and assist the reader in comprehension for effective implementation of the methodology.

3.5 Applicability Conditions

This assessment determined that the applicability conditions contained within the methodology are appropriate, adequate and in compliance with the VCS rules. The following table summarizes applicability conditions as written, changes made during the revision of the methodology, and the final evaluation of those changes during the assessment.

The methodology provides a finite list of project activities directed toward the restoration of degraded wetlands, as required by the VCS Standard, v3.4.

The methodology has the following applicability conditions:

1. Project activities which restore tidal wetlands (including seagrass meadows, per this methodology's definition of *tidal wetland*) are eligible	As defined by this methodology a Tidal Wetland is a subset of wetlands under the influence of the wetting and drying cycles of the tides (e.g., marshes, seagrass meadows, tidal forested wetlands and mangroves). Sub-tidal seagrass meadows are not subject to drying cycles, but are still included in this definition.
2. Project activities may include any of the following, or combinations of the following: a) Creating, restoring and/or managing hydrological conditions (e.g., removing tidal barriers, improving hydrological connectivity, restoring tidal flow to wetlands or lowering water levels on impounded wetlands) b) Altering sediment supply (e.g., beneficial use of dredge material or diverting river sediments to	The methodology allows restoration efforts described in AFOLU Requirements WRC v3.4, 4.2.19 that allow lowering of "water levels" in impounded areas to restore wetland function, while excluding the lowering of water tables in wetlands, other than these flooded, open-water conditions. As stated in 4.2.19 of the AFOLU Requirements, "Activities that actively lower the water table depth in wetlands are not

sediment-starved areas) c) Changing salinity characteristics (e.g., restoring tidal flow to tidally-restricted areas) d) Improving water quality (e.g., reducing nutrient loads leading to improved water clarity to expand seagrass meadows, recovering tidal and other hydrologic flushing and exchange, or reducing nutrient residence time) e) (Re-)introducing native plant communities (e.g., reseeding or replanting) f) Improving management practice(s) (e.g., removing invasive species, reduced grazing)	eligible." However, under the same section activities that restore hydrological function to an impounded wetland or lower the water table depth are allowed as long as they restore hydrological flow. The determination that hydrologic flow is restored should be determined at each project level validation/verification.
3. Prior to the project start date, the project area: a. Is free of any land use that could be displaced outside the project area as demonstrated by at least one of the following, where relevant: i. The project area is abandoned for two or more years prior to the project start date, or ii. Use of the area for commercial purposes is not profitable as a result of salinity intrusion, market forces or other factors. In addition, timber harvesting in the baseline scenario within the project area does not occur; or iii. Degradation of additional wetlands for new agricultural sites within the country will not occur or is prohibited by enforced law. OR b. Is under a land use that could be displaced outside the project area (e.g. timber harvesting), though in such case	This set of requirements is provided as a measure to ensure activity shifting leakage will not occur as the result of a project.

emissions from this land use shall not be accounted for. OR c. Is under land use that will continue at a similar level of service or production during the project crediting period (e.g., reed or hay harvesting, collection of fuelwood and subsistence harvesting); (a) , (b), or (c) above to be demonstrated by the project proponent based on verifiable information such as laws and bylaws, management plans, annual reports, annual accounts, market studies, government studies, or land use planning reports and documents.	
4) Live tree vegetation may be present and subject to carbon stock changes (e.g., due to harvesting) in both the baseline and project scenarios.	While commercial harvest is excluded, section 4.2.19 allows "selective harvesting where harvesting does not lower the water table". This applicability condition excludes leakage due to subsistence harvesting of tree vegetation.
5) The prescribed burning of herbaceous and shrub aboveground biomass (cover burns) as a project activity may occur	For projects where prescribed burning is to be employed, calculations to estimate CH4 and N2O emissions are appropriately included. Section 4.3.3, (2) of the VCS AFOLU Requirements state that in WRC methodologies, the burning of herbaceous vegetation is deemed de minimis.
6) Where the project proponent intends to claim emission reductions from reduced frequency of peat fires, the project activities must include a combination of rewetting and fire management.	Fulfills part of the requirements of section 4.2.19 of the AFOLU requirements.
7) Where the project proponent intends to	Fulfills the requirement of section 4.4.13 of

claim emission reductions from reducing peat fires, it must be demonstrated that a threat of frequent on-site fires exists and the overwhelming cause of ignition of the organic soil is anthropogenic (e.g., drainage of the peat, arson).	the AFOLU requirements.
8) In strata with organic soil, afforestation, reforestation, and revegetation (ARR) activities must be combined with rewetting	Satisfies AFOLU requirement 4.2.20, (1) ARR on Wetland (ARR+RWE).

The methodology is not applicable under the following conditions:

9) Project activities qualify as IFM or REDD	This methodology does not address IFM or REDD AFOLU requirements.
10) Baseline activities include commercial forestry.	The methodology does not have provisions for including commercial forestry in the baseline, including harvesting, in order to eliminate activity shifting or market leakage from shifting commercial forestry activities. Also, if commercial forestry occurs in the baseline, opportunity costs would out-compete carbon finance.
11) Project activities lower the water table, unless the project converts open water to tidal wetlands, or improves the hydrological connection to impounded waters.	As stated in 4.2.19 of the AFOLU Requirements, "Activities that actively lower the water table depth in wetlands are not eligible." However, under the same section activities that restore hydrological function to an impounded wetland or lower the water table depth are allowed as long as they restore hydrological flow. The determination that hydrologic flow is restored should be determined at each project level validation/verification.
12) Hydrological connectivity of the project area with adjacent areas leads to a significant increase in GHG emissions	Eliminates the possibility of ecological leakage.

outside the project area.	
13) Project activities include the burning of organic soils.	Organic soil is a major carbon source/sink in ecosystems where it exists.
14) Nitrogen fertilizer(s), such as chemical fertilizer or manure, are applied in the project area during the project crediting period	Eliminates the problem of estimating N_2O emissions from fertilizers and allows the conservative exclusion of N_2O emissions in the baseline scenario.

3.6 Project Boundary

The VCS Standard requires that the methodology establish criteria and procedures for describing the project boundary and identifying and selecting optional carbon pools, i.e. sources, sinks, and reservoirs relevant to the baseline and project scenarios. Procedures to quantify emissions are appropriately included in the *Methodology for Tidal Wetland and Seagrass Restoration* for all relevant pools and sources.

The methodology appropriately addresses the establishment of spatial, temporal and gaseous boundaries to meet VCS AFOLU Requirements for ARR, and WRC project categories. Mandatory and optional pools in this methodology are confirmed suitable based on the choosing of appropriate modules for a project specific methodology.

The spatial boundaries in this methodology were assessed for conformance to VCS rules and found to be sufficiently detailed, appropriate, and adequate for project scenarios and in compliance with AFOLU Requirements. Similarly, temporal boundaries were reviewed within the context of VCS rules and found to detailed and sufficient. The methodology further defines temporal boundaries according to project category for historical reference period, project crediting period, and monitoring period. The methodology provides for reassessment of spatial boundaries periodically to account for loss in area or shift in the area due to sea level rise, wetland migration and other coastal forces.

The methodology allows for flexibility in selecting carbon pools depending on project category and associated scenario or otherwise demonstrable conservative exclusion. The assessment team evaluated the appropriateness of mandatory or optional carbon pools and sources of GHG for project scenarios under the methodology and determined the project developers' choices were justified. The assessment team concludes that procedures outlined in the methodology for selection of pools, sources, sinks, and reservoirs are clearly specified and suitable for the project activities covered by the methodology.

Temporal boundaries include both a peat depletion time (PDT) and soil depletion time (SDT) as required in section 4.5.25 of the VCS AFOLU Requirements.

3.7 Baseline Scenario

The methodology uses the *CDM Combined tool to identify the baseline scenario and demonstrate additionality for A/R CDM project activities* to compare continuations of pre-project land uses in various alternative scenarios. The methodology specifies some changes in definitions of words, phrases and acronyms to be used when using the CDM tool for this methodology. Applying the CDM tool with these alterations appropriately allows for transparent identification of baseline scenarios and encourages conservative baseline net greenhouse gas removals by reductions.

The CDM tool is very generic, and with minor changes, can apply to many land use scenarios aside from A/R activities. Its steps include start date screening, identification of alternative scenarios, barrier analysis, investment analysis and common practice analysis. Aside from replacing the terms, “A/R, afforestation, reforestation, or forestation” with “WRC, or rewetting,” most of the alterations to the tool replace CDM terms with equivalent VCS terms. The other change substitutes “net greenhouse gas removals by sinks” with “net greenhouse gas emissions reductions.” Growing trees remove GHGs from the atmosphere, restoring wetlands generally reduces emissions over most likely scenarios.

The baseline scenario is reassessed every 10 years to account for changes in land use and land management practices. PDT is also reassessed every 10 years. These timeframes are reasonable and appropriate because the lands which fit the applicability conditions of the methodology are affected by changes in sea level, which affects salinity, water tables and potential for inundation of the project area. Sea level change is a slow process which may not proceed smoothly, without fluctuations in rate. Shorter reassessment periods will be unlikely to measure significant change. Sea level changes may also change options for land use, particularly along coastlines affected by uplift.

3.8 Additionality

The methodology uses an activity method for demonstrating additionality for tidal wetlands and seagrass restoration within the USA.

The activity method requires a regulatory surplus test, in accordance with the VCS Standard, and a positive list, showing a project meets the applicability conditions. The positive list was established using the activity penetration method (Option A), where the % activity penetration in a given year is calculated by dividing observed adoption by maximum potential adoption of the activity, in the VCS Standard. For restoration projects meeting applicability conditions, within the 35 coastal states, commonwealths and territories of the USA, activity penetration level (APy) was calculated to be 2.74% (or lower), and therefore additional.

The data used to calculate activity penetration was reported by the National Estuary Programs (NEP) to the U.S. Environmental Protection Agency, FEMA and the US Fish and Wildlife Service. It is publicly available. The time period of the data was shown to be appropriate, because it coincides with the inception of laws, programs and organizations that provide an increased funding capacity for restoration projects. All requirements for the data sources, as described in section 4.5.6 of the VCS Standard, were met.

The activity method was assessed through an extensive review and data analysis performed by Luis de la Torre, VCS Approved Standardized Methods Expert and ESI Assessment Team Member. As part of the review, historical guidance documents issued by the EPA were reviewed as relevant for the setting of goals under this method. For example, the oldest public document on this is a document titled THE NATIONAL ESTUARY PROGRAM: FINAL GUIDANCE ON THE CONTENTS OF A GOVERNOR'S NOMINATION issued in January 1990 by EPA, which contains

1. the environmental importance from an strategic point of view for estuaries based on (1) toxicants, (2) pathogen contamination, (3) (S) eutrophication, (4) habitat loss/modification, and changes in living resources.

2. Environmental Quality Goals and Actions Plans for all estuaries in the program, as guidelines for managers. These goals could range from maintaining current conditions to restoring the estuary to past conditions to restoring or maintaining pristine quality. These goals should be long term in spirit with clear environmental criteria or preferred uses that the Conference considered appropriate for a segment. In general, national significance must be clear and their impacts for the nomination (economy around the wetland, relationships with other initiatives, lessons learned, etc.)

3. The financial structure for the program, defining conditions and level of federal budgeting based on the scale of the program, open to millions of expense to develop the estuaries.

The team then further assessed specific detailed reports and budgeting summaries of specific programs from NEP, which included documents explaining the strategy and economics of NEP and Non NEP estuaries and the criteria used. The most important are the strategy/guidelines of NEP issued in 1990 (outlines above) and the NEP conditions reports for program sites snapshot. Also specific program descriptions and agreements for Albermarle-Pamlico, Massachusetts, Long Island and Tampa program were reviewed. These documents confirmed the market conditions and guidelines of the NEP program, their economics and why the Non NEP program did not qualify.

The methodology developer provided a spreadsheet with the calculation of APy and a sample of all the datasets provided were carefully analysed. The data was checked and additional information was downloaded from EPA web site to confirm the validity of the calculation. One observation was the age of the data, in some cases over one decade and explained by client, in order. The number of years of the dataset was discussed with client and justified the 3 years data presented in the methodology. The basis for this is the typical schedule of an estuary project. ESI also carefully considered additional information provided by the methodology developer from experts Tanner and Devore. Both experts demonstrated adequate peer review of their publications, years of experience in the field and academic background to support the methodology.

For tidal wetland restoration projects located outside the USA, the *CDM Combined tool to identify the baseline scenario and demonstrate additionality for A/R CDM project activities* applies, using the language changes described in section *3.7 Baseline Scenario*, above.

In summary, the assessment team concludes that the procedures for demonstrating additionality are appropriate, adequate and conform to VCS rules.

3.9 Quantification of GHG Emission Reductions and Removals

3.9.1 Baseline Emissions

The methodology establishes procedures for GHG quantification, by summing emissions from biomass, soil and fuel use in the baseline scenario. Biomass emissions are estimated through stock changes, using the CDM methodology AR-ACM0003 Afforestation and Reforestation of Lands except Wetlands, but ignoring the exclusion for wetlands and using a formula that excludes deadwood and litter. This is appropriate, because measuring biomass is not affected by whether or not land is wetland, except that dead plant material may be shifted around due to water movement (thus the exclusion of dead wood and litter). The reason wetlands were excluded from this methodology appears to be the more complicated nature of managing soils whose carbon content is at least partially controlled by water tables.

Soil emissions are estimated by summing the emissions of CO2, N2O and CH4, minus a deduction for allochthonous soil carbon (soil carbon transported into the project area via sedimentation). Following the requirements of the VCS standard, soil emissions may be determined by proxy, model, or relevant, peer-reviewed published data in the same or similar systems. Default factors for soil emissions are also provided, which were taken from peer-reviewed literature and found by the auditors to be appropriately used and correctly reported. Emissions from fuel use may be conservatively omitted, but procedures for estimation are also provided. Procedures include all sources and sinks considered, and include methods to calculate time-dependent emissions sources, including emissions from peat, soil, and accounting for emission changes due to sea level rise.

In summary, the procedures for calculating baseline emissions in the methodology are appropriate and adequate. The equations and formulas are used without error and parameters for quantification of baseline emissions are used appropriately in calculating all significant baseline emissions.

3.9.2 Project Emissions

Ex-ante estimates of project emissions are calculated using the latest version of VMD0019 *Methods to Project Future Conditions*. Emissions are estimated as the sum of emissions from biomass, from soil, from prescribed burning and fuel use. As with baseline emissions, the CDM methodology AR-ACM0003 is used to estimate emissions from biomass, neglecting the exclusion of wetlands and using a formula that excludes litter and dead wood carbon pools. These changes are properly justified for the same reasons as mentioned above.

Project emissions from soils are estimated in the same ways as baseline emissions: summing CO_2, CH_4 and N_2O emissions, and making a deduction for allochthonous soil carbon. The various methods provided by the methodology for determining each are also identical to the methods for estimating baseline emissions. For projects where prescribed burning is to be employed, calculations to estimate CH_4 and N_2O emissions are appropriately included.

The methodology incorporates procedures to account for sea level rise, carbon stock changes in the biomass pools, emissions and removals from soil, non-CO2 emissions from prescribed burning emissions from fossil fuel use and emission reductions due to rewetting and fire management on organic soil.

The procedures for calculating project emissions are appropriate and adequate for estimating emissions. The equations and formulas are used without error and parameters for quantification of emissions are used appropriately in calculating all significant project emissions. The procedures for calculating project emissions conform to VCS rules.

3.9.3 Leakage

Meeting applicability conditions eliminates the possibility of activity shifting and market leakage. The project area must have no commercial use, and subsistence gathering of materials that occurs in the baseline scenario is not prevented in the project scenario.

Ecological leakage from a project of this nature would be caused if hydrological changes within the project boundary caused changes that increase GHG emissions outside the boundary. Applicability condition 7 rules out changes cause by hydrological connectivity.

The assessment team considers the lack of marketable products coming from the land, the condition that subsistence gathering of materials be uninterrupted and the lack of hydrologic connectivity with surrounding lands to be good cause to assume leakage is zero.

3.9.4 Net GHG Emission Reductions and Removals

Net GHG emissions reductions and removals are calculated by subtracting the net GHG emission in the project scenario and emissions due to leakage from GHG emissions in the baseline scenario. A default fire reduction premium is also added when rewetting and fire management is involved.

These calculations are appropriate for the methodology, adequate and in compliance with the VCS Standard section 4.7.1.

Any uncertainties associated with the quantification of net GHG emission reductions and removals are addressed appropriately.

3.10 Monitoring

The methodology establishes criteria for monitoring by requiring project proponents to develop a monitoring plan to guide monitoring efforts. The scope of this assessment therefore includes new data and parameters available at validation and to be monitored (Tables 6 and 7). However, the general procedures for determining baseline emissions and emissions in the project scenario remain the same as validated and in accordance with the VCS Standard section 4.8. The methodology element notes appropriately that data and parameters for leakage, proxy areas, and project accounting areas must be measured at a minimum of every 5 years or after a significant event that changes carbon stocks. Measurement interval is cited correctly per AFOLU Requirements section 4.5.23. The methodology element identifies default factors used which may

become out of date and properly identifies those which may require periodic re-assessment per the VCS Standard section 4.1.7.

Data and parameters for monitoring measure the success of project implementation as outlined and measured by module REDD+MF. Monitoring guidance within modules REDD+ MF module is appropriate for project activities applicable to this methodology. The methodology establishes criteria for monitoring by requiring methodology developers to develop a monitoring plan to guide monitoring efforts and the revision now includes variables pertaining to peatland soils.

Data and Parameters Available At Validation

Data Parameter	Assessment team findings
$Depth_{peat,i,t0}$ – Depth of organic soil in stratum i at start of project, measured in meters.	Appropriate and required to calculate baseline emissions in organic soils, and is used to calculate the maximum quantity of GHG emission reductions that may be claimed. Direct measurement or literature pertaining to the project area is the source.
$Rate_{peatloss-BSL,I}$ – rate of organic soil loss from subsidence and fire in baseline scenario, statum i, in m yr^{-1}	Appropriate, as the rate of peat loss in the baseline is vital to calculate soil emissions, in project areas with organic soils. Expert judgement, area-relevant literature, direct measurement or proxies.
$Rate_{Closs-BSL,i,t}$ – Rate of organic C loss from mineral soils in baseline.	Appropriate and required to calculate baseline emissions from mineral soils in project areas with mineral soils, and is used to calculate the maximum quantity of emission reductions that may be claimed. Estimated through published values, historical data on site, or chronosequence data from similar sites. Conservatively low value may be applied.
$Rate_{Closs-WPS,i,t}$ – Rate of organic C loss from mineral soils in project scenario, in t C ha^{-1} yr^{-1}	Appropriate and conservatively set to zero, as loss of SOC in the project scenario is likely negative.
$C_{BSL-soil,i,t}$ – SOC stock in baseline scenario, in t C ha^{-1} yr^{-1}	Appropriate and required to calculate baseline emissions. This value is estimated through direct measurement with soil cores, collected within 2 years prior to start date.
$C_{min,i,t0}$ – SOC content in	Appropriate and required for calculation of baseline emissions

mineral soil at project start date, in t C m^{-3}	and maximum emissions reductions that may be claimed in projects with mineral soils. Estimated through direct measurement with soil cores.
$Depth_{soil,i,t0}$ – Average mineral soil depth in a stratum at project start, in meters	Appropriate and required for the calculation of baseline emissions and the maximum amount of emissions reductions that can be claimed. Estimated through direct measurements or literature involving the project area.
VC – volumetric organic carbon content of any soil, organic or mineral, in t C m^{-3}.	Appropriate and required for the calculation of baseline emissions and the maximum emissions reductions that may be claimed. Can be estimated through direct measurement or literature involving the project area.
$A_{i,t}$ – Area of a baseline stratum in year t, in ha.	Appropriate and required to calculate baseline emissions, preferably measured through a GIS, including GPS coordinates and remote sensing data.
$C_{BSL\text{-}herb,i,t}$ – C stock in herbaceous vegetation in a baseline stratum, in t C ha^{-1}.	Appropriate and required to calculate baseline emissions. May be estimated through measurements or a default factor.
%OM – percentage of soil organic matter, in percent.	Appropriate and required to calculate baseline and project emissions. Measurements based on loss-on-ignition or through formulas to calculate %OM from $\%C_{soil}$.
$\%C_{soil}$ – percent of SOC, in percent.	Appropriate and required to calculate baseline and project emissions. Can be derived from direct measurements or indirectly through %OM, above.
BD – dry bulk density of soil, in kg m^{-3}.	Appropriate and required to calculate baseline and project emissions. Can be from measurements or, in the case of allochthonous carbon, calculated from $\%C_{soil}$.
$\%OM_{depositedsediment}$ – percentage of organic matter in deposited sediment.	Appropriate and required to calculated baseline and project emissions. Can be estimated through direct measurements using loss on ignition, or indirectly through $\%C_{soil}$.
$\%C_{depositedsediment}$ –	Appropriate and required to calculate baseline and project

percentage of C in deposited sediment.	emissions. May be estimated through loss on ignition, or through $\%C_{soil}$ on sediment samples, or through a default factor.
$EF_{N2O,burn}$ – Emissions factor for vegetation burning, in g N_2O/kg $biomass_{dry}$.	Appropriate and required to calculate project emissions. Factor is taken from factors determined for grassland vegetation. An IPCC Guidelines default factor is suggested.
$EF_{CH4,burn}$ – emissions factor for CH4 for vegetation burning, in g CH_4/kg biomass $_{dry}$	Appropriate and required to calculate project emissions. Factor is taken from factors determined for grassland vegetation. An IPCC Guidelines default factor is suggested.

Data and Parameters Monitored

Data Parameter	Assessment team findings
$Biomass_{i,t}$ – aboveground shrub biomass in a stratum, in kg dry matter ha^{-1}.	Appropriate and required to calculate project emissions. Measured using field data collected at time of burning or conservatively through data collected during period of greater biomass.
$Rate_{peatloss\text{-}WPS,i,t}$ – Rate of organic soil loss due to subsidence in the project scenario in a stratum, year t, in m yr^{-1}.	Appropriate and required to calculate the maximum quantity of GHG emission reductions that can be claimed. May be made from expert judgement, data sets or literature on areas similar to the project area, based on surface height measurements. Or may be derived from GHG emission proxies.
$C_{WPS\text{-}herb,i,t}$ – C stock in herbaceous vegetation in a stratum in the project scenario, year t, in t C ha^{-1}.	Appropriate and required to calculate project emissions. May be made from direct measurements or a default factor.
$A_{i,t}$ – Area of a project stratum, year t, in ha.	Appropriate and required to calculate project emissions, preferably measured through a GIS, including GPS coordinates and remote sensing data.
$C_{WPS\text{-}soil,i,t}$ – SOC stock in the project scenario in a stratum,	Appropriate and required to calculate project emissions. Estimated through direct measurements using soil cores.

year t, in t C ha^{-1}	

4 ASSESSMENT CONCLUSION

ESI confirms that all first assessment activities for the *Methodology for Tidal Wetland and Seagrass Restoration* adhere to the criteria established for this assessment as documented in this report and are complete. ESI concludes without any qualifications or limiting conditions that the methodology element documentation (*Methodology for Tidal Wetland and Seagrass Restoration, Version 20150525, dated 16 October 2015*) meets the requirements of VCS Program Guide, VCS Standard, VCS AFLOU Requirements, and the VCS Methodology Approval Process. Therefore, ESI recommends that VCSA approve the methodology element (*Methodology for Tidal Wetland and Seagrass Restoration, Version 20150525*) as prepared by Restore America's Estuaries.

5 REPORT RECONCILIATION

Once the second assessment of the methodology was completed, ESI undertook review of the methodology to determine if changes made during the second assessment resulted in additional questions from the first assessor. The reconciliation reviewed the current version of the methodology and included a detailed reviewed the level of specification for project activities and focus on the activity method, which was not available at the time of our initial review. The following issues/questions were raised with VCS and the methodology developer during the reconciliation process:

- The addition of depth requirement in the organic soil definition in the baseline scenario creates the potential for grossly underestimating carbon emitted. It seems the methodology could specify a reasonable depth for organic soil material.
- Section 3 Definitions – regarding degraded wetland. Why does degraded only refer to wetlands degraded only by human impact? What about hurricanes, floods, etc.
- Section 5.2 Table needs corrected. Left margin header for baseline can't be read.
- Section 8.1.4.5 - CH4 is included under N2O emissions from the soil, but seems this belongs elsewhere; this is covered again under page 40 so appears it can be removed from section 8.1.4.5.

All issues/questions raised within the reconciliation process have now been sufficiently addressed and closed.

6 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

As set out in the VCS Methodology Approval Process for WRC and ARR AFOLU Methodology Elements:

1) Both validation/verification bodies shall be eligible under the VCS Program to perform validation for sectoral scope 14 (AFOLU); AND

2) At least one of the validation/verification bodies shall use an AFOLU expert in the assessment; AND

3) At least one of the validation/verification bodies shall have completed at least ten project validations in any sectoral scope. Project validations can be under the VCS Program or an approved GHG program, with the projects having been registered under the applicable program. A validation of a single project under more than one program (e.g., VCS and CDM) counts as one project validation. The validation/ verification body that meets this eligibility requirement may be the same validation/verification body that uses an AFOLU expert.

ESI fulfils the eligibility requirements in the following ways:

1) ESI is accredited by the American Standards Institute under ISO 14065:2007 for GHG Validation and Verification Bodied; including validation/verification of assertions related to GHG emission reductions and removals at the project level for Land Use and Forestry (Group 3). VCS accepts this accreditation.

2) Shawn McMahon of ESI, the lead assessor, is a VCS AFOLU-Wetlands Expert (non-peat). Additionally, ESI added Luis de la Torre, a VCS Approved Standardized Methods Expert. Both were full team members, who attended meetings and completed the technical review. Note that although this methodology includes peatlands, a peatlands expert has not been included on the ESI team assessment.

3) To date, ESI has completed 18 VCS project validations under AFOLU. Please see Appendix C for the required evidence.

7 SIGNATURE

Signed for and on behalf of:

Name of entity: Environmental Services, Inc.

Signature: _____

Name of signatory: Janice McMahon
Vice President & Regional Technical Manager

Date: 03 November 2015

SMM/JPM/rb/VO13068.00_REA_FirstMethAssessReport_Finalv2-20151103.doc
K pf 11/03/15f

APPENDIX A – SUMMARY OF NCRS/CL/OFIS

Item Number	1
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	1) Models shall be publicly available, though not necessarily free of charge, from a reputable and recognized source (e.g. the model developer's website, IPCC or government agency). 2) Model parameters shall be determined based upon studies by appropriately qualified experts that identify the parameters as important drivers of the model output variable(s). 3) Models shall have been appropriately reviewed and tested (e.g. ground-truthed using empirical data or results compared against results of similar models) by a recognized, competent organization, or an appropriate peer review group. 4) All plausible sources of model uncertainty, such as structural uncertainty or parameter uncertainty, shall be assessed using recognized statistical approaches such as those described in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1, Chapter 3. 5) Models shall have comprehensive and appropriate requirements for estimating uncertainty in keeping with IPCC or other appropriate guidance, and the model shall be calibrated by parameters such as geographic location and local climate data. 6) Models shall apply conservative factors to discount for model uncertainty (in accordance with the requirements set out in Section 4.1.4), and shall use conservative assumptions and parameters that are likely to underestimate, rather than overestimate, the GHG emission reductions or removals.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Methodology 8.1.3.1
ESI Findings - Round 1 22 April 2014	Not clear that sufficient guidelines in the methodology exist to ensure that each of these requirements are met.
Round 1 NCR/CL/OFI	NCR: Please ensure sufficient guidance exists within the methodology to ensure the elements of this requirement will be met by intended users.
Round 1 Response from Methodology Developer 29 May 2014	We are not referring to a specific model. We refer to these requirements to make sure that when PPs use methodologies the requirement is met.
ESI Findings - Round 2 19 September 2014	The methodology authors are correct, no specific model is required in this methodology. Item closed.

Item Number	2
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	1) Where the methodology uses third party default factors and/or standards, such default factors and standards shall meet with the requirements for data set out in Section 4.5.6, mutatis mutandis. 2) Where the methodology itself establishes a default factor, the following applies: a) The data used to establish the default factor shall comply with the requirements for data set out in Section 4.5.6, mutatis mutandis. b) The methodology shall describe in detail the study or other method used to establish the default factor. c) The methodology developer shall identify default factors which may become out of date (i.e., those default factors that do not represent physical constants or otherwise would not be expected to change significantly over time). Such default factors are subject to periodic re-assessment, as set out in VCS document Methodology Approval Process. 3) Where methodologies allow project proponents to establish a project-specific factor, the methodology shall provide a procedure for establishing such factors.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Sections 8.1.2, 8.1.3.1, 8.1.3.4.4
ESI Findings - Round 1 22 April 2014	The methodology establishes a default factor for SOC sequestration in marshes and mangroves and for CH4 emissions from wetland soils. The FRP default value is from a module pending approval. A literature-derived default factor is used for the carbon stock of herbaceous vegetation. Default factors are subject to periodic reassessment.
Round 1 NCR/CL/OFI	NCR: Please provide Poffenbarger article, Andrews article, Anisfeld article (not in literature citations) and Smith articles for review. Where does the value for Calloch (section 8.1.3.2.7) come from? Where does the value for Cwps-herb,I,t come from?
Round 1 Response from Methodology Developer 29 May 2014	Articles provided via email. Default value for %C_alloch was dropped. C_wps-herb,i,t of 3 t C/ha was justified in a footnote in Section 8.1.3. We now refer to that section in 8.2.3.
ESI Findings - Round 2 19 September 2014	Articles received. Default value for Cwps-herb, i, t is explained in section 8.1.3. Conversion of default factors from Smith, et al, unclear. 28 August 2014
Round 2 NCR/CL/OFI	CL: Please show the conversion of the N emission values provided in Smith, et al, to the default N2O emission default values provided in equations 48 - 50.

Round 2 Response from Methodology Developer 08 October 2014	These default values are direct unit conversions from the data presented in the Smith et al. 1983 paper, in their Table 2, column 2. The units used in that table are mg N2O-N m-2 yr-1. We converted these units to units of t N2O ha-1 yr-1 using the following conversion factors: mg to tons: multiply by 10^-9 N2O-N to N2O: multiply by 44/28 m2 to ha: multiply by 10,000 Note that while checking these default values we noticed some errors in our original calculations; these values have been corrected in the revised methodology.
Final ESI Findings	Default values now clearly reflect those in Smith, et al. Item closed.

Item Number	3
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	4.1.8 Where proxies are used, it shall be demonstrated that they are strongly correlated with the value of interest and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine the value of interest than direct measurement of the value itself.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.1
ESI Findings - Round 1 22 April 2014	This is largely pending the review of other NCRs on proxies. Additionally the section 8.1.3.1 under "Use of Proxies" should include a requirement that ensures "Where proxies are used, it shall be demonstrated that they are strongly correlated with the value of interest and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine the value of interest than direct measurement of the value itself."
Round 1 NCR/CL/OFI	NCR: The section 8.1.3.1 under "Use of Proxies" should include a requirement that ensures "Where proxies are used, it shall be demonstrated that they are strongly correlated with the value of interest and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine the value of interest than direct measurement of the value itself."
Round 1 Response from Methodology Developer 29 May 2014	The text between parentheses "as defined in the VCS Standard" was intended to cover exactly what is required. To make this more explicit we added "proxies are strongly correlated with the value of interest".
ESI Findings - Round 2 19 September 2014	Methodology authors added, "Project proponents must justify that these proxies are *strongly correlated with the values of interest…"* but did not add any language explaining the use of proxies must be shown to be equivalent or better than direct measurement. The expectation seems to be that the project developer would read this section of the VCS Standard. NCR closed.

Round 2 NCR/CL/OFI	OFI: As this requirement for proxy areas is listed in the methodological section of the Standard there is a concern that during validation a validator may miss this requirement. It would be very helpful to include the additional language that proxies "must be shown to be equivalent or better than direct measurement".
Round 2 Response from Methodology Developer 08 October 2014	"That they are strongly correlated with the value of interest and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine the value of interest than direct measurement of the value itself," was added to the sentence.
Final ESI Findings	This additional language is included in section 8.1.4.1 of the latest methodology version. Item closed.

Item Number	4
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	4.1.12 Methodologies shall include sufficient information and evidence to allow the reader to reach the same assessment conclusion on the appropriateness and rigor of the standardized method reached by the two validation/verification bodies in the methodology approval process, noting that the confidentiality of proprietary data may be protected as set out in Section 4.5.6(5). To aid the readability and clarity of methodologies, such information and evidence may be included in appendices to methodology documents rather than in the body of the documents themselves. Following their initial approval, methodologies are subject to periodic re-assessment, as set out in VCS document Methodology Approval Process.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	The methodology does not offer enough guidance and information to allow any reader to reach the same conclusion. Details are explained below; basically the APy is not solid enough and the references are not easily traceable
Round 1 NCR/CL/OFI	NCR: The methodology does not offer enough guidance and information to allow any reader to reach the same conclusion. Details are explained below; basically the APy is not solid enough and the references are not easily traceable. Please address.
Round 1 Response from Methodology Developer 29 May 2014	Resolved per emails with Luis
ESI Findings - Round 2 19 September 2014	The client supplied a spreadsheet with the calculation of APy and a sample of all the datasets (e-mail sent by 19.05.2014). The data was checked and extra information was downloaded from EPA web site to confirm the validity of the calculation. One observation was the age of the data, in some cases over one decade and explained by client, in order. The number of years of the dataset was discussed with client and justified the 3 years data presented in the methodology. The basis for this is the typical schedule of an estuary project. Also 2009 was explained separately as outlier in the development of NEP. NCR

	addressed.
Round 2 NCR/CL/OFI	CL: Recommend Client to insert in the meth the APy calculation and justification for 3 years dataset.
Round 2 Response from Methodology Developer 08 October 2014	The 3-year justification was included in the July 25 revisions provided to ESI. The APy calculation is now included in the methodology.
Final ESI Findings	3-year justification and calculation of APy included in Annex 1. Item closed.

Item Number	5
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	4.3.8 The methodology shall clearly specify the project activity in terms of a technology or measure and its context of application. A technology or measure encompasses the plant, equipment, process, management and conservation measure or other practice that directly or indirectly generates GHG emission reductions and/or removals. The context of application refers to the conditions or circumstances under which such technology or measure may be implemented.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	The introduction to the list of project activities ends with, "Project activities include, but are not limited to the following…"
Round 1 NCR/CL/OFI	NCR: This item requires clearly specifying activities, but the activity list is open ended. Please address.
Round 1 Response from Methodology Developer 29 May 2014	Text in methodology revised.
ESI Findings - Round 2 19 September 2014	The methodology authors removed "…but are not limited to…" from the list of project activities, addressing this NCR. Item closed.

Item Number	6
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	1) Set out criteria and procedures used for identifying the GHG sources, sinks and reservoirs relevant for the project.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	section 5

ESI Findings - Round 1 **22 April 2014**	The methodology identifies the SSRs, and explains why they are included or excluded. Pending NCR on litter. In the methodology it is inferred that the "Above-ground non-tree biomass" pool includes the "aboveground herbaceous mass" and stated (table 5.1) that "Litter is only included in association with the quantification of herbal mass." This is somewhat confusing as litter is its own optional pool, yet it's included in the "aboveground non-tree biomass". As the "litter" component referenced is essentially the dead material that could not be segregated from the live herbaceous sample, please just state in the "aboveground non-tree biomass" part of table 5.1 that it includes herbaceous live and standing herbaceous dead material. The mention of this in the "litter" portion of the table would then be removed.
Round 1 **NCR/CL/OFI**	NCR: Please see and address the finding.
Round 1 Response from Methodology Developer **29 May 2014**	The selection of litter is changed back to 'Excluded' as we have no procedures for this pool in particular and for WRC project the pool is optional. Only when sampling herbal biomass there is an issue with separating biomass from litter and therefore in normal scientific practice the litter is sampled as well. We suggest to indicate that the litter pool is excluded, with the given justification, and keep the note that litter is included in herbal biomass sampling.
ESI Findings - Round 2 **19 September 2014**	Litter is now excluded. See table 5.1. Item closed.

Item Number	7
VCS Standard **VCS Version 3 Requirements Document** **08 October 2013, v3.4**	i) Resource availability is the limitation imposed by the supply of raw materials or energy resources to the activity. ii) Technological capability is the limitation imposed by the technical efficiency of the project activity. iii) Level of service is the limitation imposed by the technical reliability or quality of the service provided by the project activity relative to its alternatives. iv) Implementation potential is the limitation imposed by the availability of appropriate locations for implementing the project activity. v) Total demand is the limitation imposed by demand for the product or service provided by, or associated with, the project activity and all relevant alternative sources of the product or service. vi) Market access is the limitation imposed by current infrastructure and the degree to which the outputs of project activity can be practically supplied to the market. vii) Market price is the limitation imposed by the current price achievable for outputs from the project activity. Cost of adoption is the limitation imposed by the cost of switching to the project activity from an alternative activity. Consumer education is the public knowledge or awareness of the activity and its benefits. Behavioral or cultural barriers

	are limitations resulting from social or cultural inertia with respect to the adoption of the project activity.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	The market information is based on a program called NEP, a table with data of the tidal wetlands restoration is included but it has no analysis just a presentation of a dataset; even searching in internet is a difficult process to conclude clearly the market issues. For non NEP estuaries assumptions are made based on the anecdotal situation of NEP.
Round 1 NCR/CL/OFI	NCR: The market information is based on a program called NEP, a table with data of the tidal wetlands restoration is included but it has no analysis just a presentation of a dataset; even searching in internet is a difficult process to conclude clearly the market issues. For non NEP estuaries assumptions are made based on the anecdotal situation of NEP. Please address.
Round 1 Response from Methodology Developer 29 May 2014	Resolved per emails with Luis.
ESI Findings - Round 2 19 September 2014	The client supplied many documents to explain the strategy and economics of the NEP and Non NEP estuaries and the criteria used. The most important are the strategy/guidelines of NEP issued in 1990 and the NEP conditions reports for program sites snapshot. Also they supplied specific program description and agreements for Albemarle-Pamlico, Massachusetts, Long island and Tampa. These documents confirmed the market conditions and guidelines of the NEP program, their economics and why the Non NEP program did not qualify. Item closed.

Item Number	8
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	b) The level of penetration of the project activity shall be no higher than five percent.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Annex 1
ESI Findings - Round 1 22 April 2014	The methodology refers to an APy of 1.08% but there is no evidence of this protocol. In the other hand, there are two sets of answers (two questions) to two experts who apparently work in this sector but there is no evidence to check their credentials, years in direct service in the industry, peer review and education; so the numbers and support of experts are anecdotal.
Round 1 NCR/CL/OFI	NCR: See finding.

Round 1 Response from Methodology Developer 29 May 2014	Email discussions between the client and Luis.
ESI Findings - Round 2 19 September 2014	The Client requested additional information from experts Tanner and Devore by mail sent on 14 and 23 July 2014. Both experts demonstrated enough peer review of their publications, years of experience in the field and academic background to support the methodology. NCR closed. It is recommended to insert additional working and research references from Mrs. DeVore as this part look liked weak in the meth.
Round 2 NCR/CL/OFI	CL: Please include the additional working and research references from Mrs. DeVore into the methodology.
Round 2 Response from Methodology Developer 08 October 2014	Resumes and additional research references for both experts have been added to Annex 1.
Final ESI Findings	Resumes and research references added to Annex 1. Item closed.

Item Number	9
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	1) Models shall be publicly available, though not necessarily free of charge, from a reputable and recognized source (e.g. the model developer's website, IPCC or government agency). 2) Model parameters shall be determined based upon studies by appropriately qualified experts that identify the parameters as important drivers of the model output variable(s). 3) Models shall have been appropriately reviewed and tested (e.g. ground-truthed using empirical data or results compared against results of similar models) by a recognized, competent organization, or an appropriate peer review group. 4) All plausible sources of model uncertainty, such as structural uncertainty or parameter uncertainty, shall be assessed using recognized statistical approaches such as those described in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1, Chapter 3. 5) Models shall have comprehensive and appropriate requirements for estimating uncertainty in keeping with IPCC or other appropriate guidance, and the model shall be calibrated by parameters such as geographic location and local climate data. 6) Models shall apply conservative factors to discount for model uncertainty (in accordance with the requirements set out in Section 4.1.4), and shall use conservative assumptions and parameters that are likely to underestimate, rather than overestimate, the GHG emission reductions or removals.

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Methodology 8.1.3.1
ESI Findings - Round 1 22 April 2014	Not clear that sufficient guidelines in the methodology exist to ensure each of these requirement are met.
Round 1 NCR/CL/OFI	NCR: Please ensure sufficient guidance exists within the methodology to ensure the elements of this requirement will be met by intended users.
Round 1 Response from Methodology Developer 29 May 2014	We are not referring to a specific model. We refer to these requirements to make sure that when PPs use methodologies the requirement is met.
ESI Findings - Round 2 19 September 2014	The methodology authors are correct, no specific model is required in this methodology. Item closed.

Item Number	10
VCS AFOLU Requirements Version 3.4	4.1.2 As set out in the VCS Standard, default factors and standards used to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality shall be publicly available from a recognized, credible source, such as IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidelines for Land Use, Land-Use Change and Forestry. See the VCS Standard for the full rules and requirements for the use of default factors and standards.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	sections 8.1.2, 8.1.3.1, 8.1.3.2.3, 8.1.3.2.7, 8.1.3.3.4
ESI Findings - Round 1 22 April 2014	Default factor for FRP is based on a methodology not yet approved. Default factor for $C_{BSL\text{-}HERB,l,t}$ is from Mitsch and Gosselink. Default factor for SOC may be from IPCC. A default for baseline CO2 emissions from soil has no reference, though it may be footnote 10 on page 29 (Poffenbarger). No part of the text has a "10" superscript. Default values for % OM in various soil materials are taken from assorted published articles, one of which (Anisfeld) does not appear in the references on its own line. Title of the Anisfeld article does not indicate a globally applicable default factor. Default factor for $\%C_{alloch}$ has no reference. Default factors for N2O emissions from soil are from Smith, et al.
Round 1 NCR/CL/OFI	NCR: Please provide references for all default factor. Please provide articles in the reference section to the auditors so statements in the methodology may be checked. Also note that the auditors cannot accept a default factor from a methodology that has not been fully validated. Ensure that the article by Anisfeld is placed on its own line in the references section.

Round 1 Response from Methodology Developer 29 May 2014	Articles provided via email. See also row 208 in tab VCS Standard_v3.4. On Anisfeld: The relationship between dry bulk density and organic matter percentage is recognized as consistent across systems by coastal wetland scientists, but to date a global analysis has not been performed and published. In lieu of such an analysis and given the broad consistency of this relationship, we are comfortable using the results from the Anisfeld et al. 1999 publication (Fig. 5 in this paper), which is the most widely used and cited publication on this relationship. We have amended the methodology to allow for site-specific information on this relationship where available. For example, Callaway et al. 2012 chose to use site-specific data for their analysis (see Fig. 8 in this paper). A visual comparison of these data with those from the Anisfeld et al. study shows the strong similarity in the relationships. We compared the results of the two equations published in these papers for the organic matter % range between 5 and 30% (the range in which this equation is expected to be applied) and found that all results were within 0.1 bulk density units, which is within the general range of error of bulk density measurements themselves.
ESI Findings - Round 2 19 September 2014	Articles received. Please show the conversion of the N emission values provided in Smith, et al, to the default N2O emission default values provided in equations 48 - 50 (also see line 208 of VCS Standard tab). Please provide a copy of Mitsch and Gosselink.
Round 2 NCR/CL/OFI	CL: Please show the conversion of the N emission values provided in Smith, et al; to the default N2O emission default values provided in equations 48 - 50 (also see line 208 of VCS Standard tab). Please provide a copy of Mitsch and Gosselink.
Round 2 Response from Methodology Developer 08 October 2014	See response to comment on Row 2. The Mitsch and Gosselink book has been provided.
Final ESI Findings	Default values now clearly reflect those in Smith, et al. Mitsch and Gosselink was provided. Item closed.

Item Number	11
VCS AFOLU Requirements Version 3.4	ii) Impounded wetlands have a water table that has been artificially raised, intentionally or unintentionally, as a result of impaired natural drainage behind a constructed feature and can result in CH4 emissions. Examples of impounded wetlands include flooded areas behind artificial barriers to natural drainage (such as road or rail embankments or levees), flooded areas for the purpose of subsidence reversal, man-made reservoirs and fish and shrimp ponds. Activities that restore hydrological function to an impounded wetland or lower the water table depth shall restore hydrological flow, considering the dynamics of the system and the hydrological connectivity necessary to maintain carbon stock and GHG fluxes.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4,

ESI Findings - Round 1 22 April 2014	Nothing specifies that lowering water tables in impounded wetlands must restore hydrologic flow necessary to maintain C stock and GHG fluxes.
Round 1 NCR/CL/OFI	NCR: Given the mixed wording in VCS AFOLU Requirements on lowering water tables in wetlands vs. lowering water levels on impoundments, please specifically address the restoration of hydrological function in activities that lower water levels in impounded wetlands.
Round 1 Response from Methodology Developer 29 May 2014	This is a definitional issue, not something to elaborate in a methodology. The AFOLU requirements referred to provide a description of eligible situations and do require this to be elaborated in the methodology. See email 29 May 2014.
ESI Findings - Round 2 19 September 2014	Confirmed this is a definitional issue. Clarification received from VCS by email on 4/21/2014. Item closed.

Item Number	12
VCS AFOLU Requirements Version 3.4	iii) Open water is an area continuously flooded or subject to natural periods of flooding, without in-situ vegetation contributing to soil carbon accumulation. Wetlands convert to open water in response to impaired sediment supply, sea level rise and/or impaired water quality. Activities that restore hydrological function to an open water wetland shall restore the hydrological flow, considering the dynamics of the system and the hydrological connectivity necessary to maintain carbon stock and GHG fluxes.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	Nothing specifies that lowering water tables in impounded wetlands must restore hydrologic flow necessary to maintain C stock and GHG fluxes.
Round 1 NCR/CL/OFI	NCR: Given the mixed wording in VCS AFOLU Requirements on lowering water tables in wetlands vs. lowering water levels on impoundments, please specifically address the restoration of hydrological function in activities that lower water levels in impounded wetlands.
Round 1 Response from Methodology Developer 29 May 2014	This is a definitional issue, not something to elaborate in a methodology. The AFOLU requirements referred to provide a description of eligible situations and do require this to be elaborated in the methodology. See email 29 May 2014.
ESI Findings - Round 2 19 September 2014	Confirmed this is a definitional issue. Clarification received from VCS by email on 4/21/2014. Item closed.

Item Number	13
VCS AFOLU Requirements Version 3.4	1) ARR on Wetland (ARR+RWE): RWE may be implemented in combination with ARR, for example by planting a native or adapted tree or shrub species on peatland or in mangroves. While existing oxidation in drained conditions is accounted for in the baseline, ARR activities on peatland shall not enhance peat oxidation; therefore, this activity requires at least some degree of rewetting. ARR+RWE on already drained peatland without full rewetting is permitted in cases where the biomass carbon stock increases more than the peat carbon stock decreases by oxidation over a period of centuries.5
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4, #5.
ESI Findings - Round 1 22 April 2014	No requirement for some degree of rewetting if part of the project includes peatlands
Round 1 NCR/CL/OFI	CL: Please clarify that in the case of peatlands, some rewetting is required.
Round 1 Response from Methodology Developer 29 May 2014	Added as applicability condition 6: "In peatland strata, ARR activities must be combined with rewetting".
ESI Findings - Round 2 19 September 2014	Clarification added; item closed.

Item Number	14
VCS AFOLU Requirements Version 3.4	2) The long-term average climate variables influencing water table depths and the timing and quantity of water flow. The long-term average climate variables shall be determined using data from climate stations that are representative of the project area and shall include at least 20 years of data.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Sections 8.1.1, 8.1.3.2.1
ESI Findings - Round 1 22 April 2014	The methodology lacks the requirement that the data is from a climate station representative of the project area.
Round 1 NCR/CL/OFI	NCR: Please specify that climate data be from representative stations.
Round 1 Response from Methodology Developer 29 May 2014	We added: "from two climate stations nearest to the project area" as in the GEST methodology.
ESI Findings - Round 2 19 September 2014	Section 8.1.4.2.1 (Proxy Based Approaches) now includes this specification. Item closed.

Item Number	15
VCS AFOLU Requirements Version 3.4	4.4.13 The criteria and procedures for identifying fire in the baseline scenario shall demonstrate with fire maps and historical databases on fires that the project area is now and in future would be under risk of anthropogenic fires. The procedure for identifying fire in the baseline scenario shall also consider any relevant current and planned land use conditions that may affect the occurrence of fire in order to establish the most plausible scenario for fire in the baseline.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Sections 4, #4
ESI Findings - Round 1 22 April 2014	This information is not included in the methodology, and the reference to the pending method appears to have the wrong document title.
Round 1 NCR/CL/OFI	CL: Please clarify the title of the referenced document. What is the approval status of this module?
Round 1 Response from Methodology Developer 29 May 2014	Adjust title to: "Methods for monitoring soil carbon stock changes and GHG emissions in peatland rewetting and conservation project activities". The modules have entered the 2nd validation in May 2014.
ESI Findings - Round 2 19 September 2014	Title was adjusted in section 8.2.7 of the updated methodology. Fully closing item pending approval of referenced methodology.

Item Number	16
VCS AFOLU Requirements Version 3.4	4.4.14 Many land use activities on wetlands (e.g., aquaculture and agriculture) involve the exposure of wetland soils to aerobic decomposition through piling, dredging (expansion of existing channels) or channelization (cutting through wetland plains). Where relevant, WRC baseline scenarios shall account for such processes as they expose disturbed carbon stocks to aerobic decomposition thus increasing the rate of organic matter decomposition and GHG emissions that may continue for years from the stockpiles. Methodologies shall include credible methods for quantifying and forecasting GHG emissions from such degradation.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Nothing found
ESI Findings - Round 1 22 April 2014	There is no accounting for wetland soil materials degrading on exposure to the atmosphere after being piled on the soil surface, or additional oxidation to walls of drainage ditches, etc. 07 April 2014
Round 1 NCR/CL/OFI	NCR: Please account for wetland soil materials excavated and piled on the soil surface and similar exposures to oxidizing conditions.

Round 1 Response from Methodology Developer 29 May 2014	What exactly is missing? Chapter 8.1 provides all sorts of approaches that may be applied to piled and dredged soil materials. We argue that piled and dredged materials do no need to be specifically mentioned, as they may form the soil material in the baseline scenario. Piled and dredged material must be accounted for in separate strata. This does not need to be stated explicitly because the concept of stratification applies to the entire methodology. See email 29 May 2014.
ESI Findings - Round 2 19 September 2014	Abandoned land formerly used in agriculture with drainage ditches and the associated piles of dredged material fit the applicability conditions of this methodology. Not all concepts of stratification are stated specifically in the VCS AFOLU requirements, yet for this one, "methodologies shall account for such processes."
Round 2 NCR/CL/OFI	NCR: Please account for wetland soil materials excavated and piled on the soil surface and similar exposures to oxidizing conditions.
Round 2 Response from Methodology Developer 08 October 2014	Added to Section 8.1.4.1: "GHG emissions from disturbed carbon stocks in stockpiles (originating from piling, dredging, channelization) exposed to aerobic decomposition must be accounted for in the baseline scenario. Such stockpiles must be identified in the stratification of the project area and accounting procedures as provided in this chapter may be used."
Final ESI Findings	Materials excavated and piled on soil surface now mentioned in section 8.1.4.1 Item closed.

Item Number	17
VCS AFOLU Requirements Version 3.4	4.4.15 Where relevant, WRC baseline scenarios shall take account of hydrological processes that lead to increased carbon burial and GHG reductions within the project area. Such processes include changes in the landscape form (i.e., construction of levees to constrain flow and flooding patterns or dams to hold water) and changes in land surface (i.e., forest clearing, and ditching or paving leading to intensified run-off).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Nothing found. N/A to BL-PEAT.
ESI Findings - Round 1 22 April 2014	The burial of carbon by hydrological process is not mentioned in the methodology.
Round 1 NCR/CL/OFI	NCR: Please account for carbon sources buried by hydrological processes, or point out to the auditors where this information was included.
Round 1 Response from Methodology Developer 29 May 2014	In 8.1.4.2 the methodology states: "In some cases, as defined in Section 8.1.3.2.7, allochthonous soil organic carbon may accumulate on the project site where this carbon may be accounted in the baseline towards the benefit of the project. Procedures for the estimation of a compensation factor for allochthonous soil organic carbon are provided in Section 8.1.3.2.7." Allochthonous carbon is by definition transported onto the project area as part of the sediment deposited. It is hence 'buried by hydrological processes'.

ESI Findings - Round 2 19 September 2014	It appears that VCS is referring to non-allochthonous soil carbon buried by sediments and therefore rendered less likely to oxidize than the soil carbon on non-buried soil surfaces.
Round 2 NCR/CL/OFI	NCR: Please address soil carbon buried in the baseline that might diminish the chances of it decomposing and giving off GHGs.
Round 2 Response from Methodology Developer 08 October 2014	We have added the following text to section 8.1.4 to make the requirement explicit to project proponents: "If the baseline scenario includes hydrologic processes that lead to increased autochthonous carbon burial, then the project proponents must include an estimation of GHG emission reductions associated with this burial using procedures described in section 8.2.4. It is conservative in the baseline scenario to assume zero emissions for buried carbon."
Final ESI Findings	The text was added to the updated version of the methodology. Item closed.

Item Number	18
VCS AFOLU Requirements Version 3.4 (ARR) 08 October 2013	4.2.1 Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing or restoring vegetative cover (forest or non-forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation. Eligible ARR projects may include timber harvesting in their management plan. The project area shall not be cleared of native ecosystems within the 10 year period prior to the project start date, as set out in Section 3.1.6.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	Harvesting in the baseline scenario is not permitted or is non-commercial. Clearing of vegetation within the 10 year period prior to project start is not discussed.
Round 1 NCR/CL/OFI	NCR: Please address clearing of vegetation within the 10 years prior to the project start date, preferably within the applicability conditions.
Round 1 Response from Methodology Developer 29 May 2014	Added to the boundary section: "For claims to carbon sequestration in biomass to be eligible, evidence must be provided in the project description that the project area was not cleared of native ecosystems to create GHG credits. Such proof is not required where such clearing took place prior to the 10-year period prior to the project start date. Areas that do not meet this requirement must be excluded from the project boundary."
ESI Findings - Round 2 19 September 2014	Wording has been added to the boundary section. Item closed.

Item Number	19
VCS AFOLU Requirements Version 3.4 (ARR) 08 October 2013	4.6.8 Activity-shifting leakage in ARR projects can result from, inter alia, the shifting of grazing animals, shifting of households or communities, shifting of aquacultural or agricultural activities or shifting of fuelwood collection (from non-tree sources). Leakage emissions may also result from transportation and machinery use. The requirements for assessing and managing leakage in ARR projects are similar to those for CDM afforestation/reforestation project activities, and such projects may apply CDM tools for estimating leakage, such as the Tool for calculation of GHG emissions due to leakage from increased use of non-renewable woody biomass attributable to an A/R CDM project activity.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.3
ESI Findings - Round 1 22 April 2014	Leakage with regard to ARR is not discussed. It is assumed to be addressed by the applicability requirement that no commercial harvesting takes place, but what about subsistence harvesting?
Round 1 NCR/CL/OFI	NCR: Please discuss leakage with regards to ARR and subsistence harvesting in particular.
Round 1 Response from Methodology Developer 29 May 2014	The applicability conditions are to preclude activity shifting. If 'non-commercial harvesting' is understood to include subsistence harvesting, we exclude activity shifting of subsistence harvesting explicitly. Applicability condition 1 states: "OR b. Is under land use that will be continued during the project crediting period (e.g., harvesting of reed or hay and collection of fuelwood". This now includes subsistence harvesting.
ESI Findings - Round 2 19 September 2014	Language has been added to the applicability conditions to cover subsistence harvesting. Item closed.

Item Number	20
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	The methodology does not offer enough guidance and information to allow any reader to reach the same conclusion. Details are explained below; basically the APy is not solid enough and the references are not easily traceable. The Meth developer assumes many elements, and this methodology should work as a guidance for any reader independently of their level of knowledge on estuaries.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 findings.

Round 1 Response from Methodology Developer 29 May 2014	The client supplied a spreadsheet with the calculation of Apy and a sample of all the datasets (e-mail sent by 19.05.2014)
ESI Findings - Round 2 19 September 2014	The data was checked and extra information was downloaded from EPA web site to confirm the validity of the calculation. One observation was the age of the data, in some cases over one decade and explained by client, in order. The number of years of the dataset was discussed with client and justified the 3 years data presented in the methodology. The basis for this is the typical schedule of an estuary project. Also 2009 was explained separately as outlier in the development of NEP. The NCR is closed.
Round 2 NCR/CL/OFI	OFI: Recommend Client to insert in the meth the APy calculation and justification for 3 years dataset.
Round 2 Response from Methodology Developer 08 October 2014	The 3-year justification was included in the July 25 revisions provided to ESI. The APy calculation is now included in the methodology.
Final ESI Findings	3-year justification and calculation of APy included in Annex 1. Item closed.

Item Number	21
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	There is no presentation of APy computation.
ESI Findings - Round 1 22 April 2014	The procedure lacks enough details to assure a proper APy value. The 1.08% is based on assumptions of a NEP program which is not clearly supported to be understood as representative of the market (coastal and non-coastal).
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developer 29 May 2014	Resolved via emails.
ESI Findings - Round 2 19 September 2014	The spreadsheet with the calculation, with a sample of the downloaded information from EPA used as inputs (Charlotte, Galv, SFbay, Tillarmook) for this calculation, was provided by Client. In each input there was an analysis of the programs in each estuary, the categories of habitat and level of restoration. This information was crossed out with data of official annual reports and was in order.
Round 2 NCR/CL/OFI	Item closed.

Item Number	22
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	The market information is based on a program called NEP, a table with data of the tidal wetlands restoration is included but it has no analysis just a presentation of a dataset; even searching in internet is a difficult process to conclude clearly the market issues. For non NEP estuaries assumptions are made based on the anecdotal situation of NEP. There is reference of national budgets and different market problems but the assessment if the level of financing is enough or insufficient relies on expert judgment which is not solid enough as it is presented.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developer 29 May 2014	Text added in Annex 1, justifying the four years of data chosen for analysis
ESI Findings - Round 2 19 September 2014	The client supplied many documents to explain the strategy and economics of the NEP and Non NEP estuaries and the criteria used. The most important are the strategy/guidelines of NEP issued in 1990 and the NEP conditions reports for program sites snapshot. Also they supplied specific program descriptions and agreements for Albemarle-Pamlico, Massachusetts, Long island and Tampa. These documents confirmed the market conditions and guidelines of the NEP program, their economics and why the Non NEP program did not qualify.
Round 2 NCR/CL/OFI	Item closed.

Item Number	23
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	The methodology refers to an APy of 1.08% but there is no evidence of this protocol. In the other hand, there are two sets of answers (two questions) to two experts who apparently work in this sector but there is no evidence to check their credentials, years in direct service in the industry, peer review and education; so the numbers and support of experts are anecdotal. There are no other additional documents to the meth to confirm the quality of the expert judgment.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.

Round 1 Response from Methodology Developers 29 May 2014	Resolved per emails with Luis.
ESI Findings - Round 2 19 September 2014	The Client requested additional information from experts Tanner and Devore by mail sent on 14 and 23 July 2014. Both experts demonstrated enough peer review of their publications, years of experience in the field and academic background to support the methodology. NCR closed.
Round 2 NCR/CL/OFI	Item closed.

Item Number	24
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	The methodology itself, reviewing the annex I and references, including letters from two experts
ESI Findings - Round 1 22 April 2014	This section has two issues. Firstly the sample used of estuaries to demonstrate the viability of the projects, they present the NEP program but there is no statistical confirmation of their significance. Secondly, there is a mention of lack of funds and difficulties in the sector but this information is not traceable immediately from the references to understand the barriers at nation level (not only coastal). For a better assessment, the economics of the project should be included and/or improve the expert judgment.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developers 29 May 2014	Resolved per emails with Luis.
ESI Findings - Round 2 19 September 2014	The Client sent by mail on 02.07.2014 enough references to confirm this point. There are strategic documents and third party reports confirming the economics of estuaries in USA by categories. NCR closed.
Round 2 NCR/CL/OFI	Item closed.

Item Number	25
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 2 (page 6, third paragraph)

ESI Findings - Round 1 22 April 2014	Sentence appears incomplete regarding "Activity shifting leakage and market leakage are deemed zero if project proponents can demonstrate that in case the pre-project land use is a)…"
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developers 29 May 2014	Sentence edited.
ESI Findings - Round 2 19 September 2014	The sentence is still confusing "Activity shifting leakage and market leakage are deemed zero if project proponents can demonstrate that in case the pre-project land use is".
Round 2 NCR/CL/OFI	CL: Please fix or clarify "in case".
Round 2 Response from Methodology Developers 08 October 2014	There is no period after "is" and the sentence continues on the next line with item a). We can also remove the carriage returns but then the list is not as clear. To avoid the apparent confusion we have edited the sentence again.
Final ESI Findings	Changes to the latest version of the methodology reflect the concerns of the validators. Item closed.

Item Number	26
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 2 (page 6, fourth paragraph)
ESI Findings - Round 1 22 April 2014	Statement regarding hydrological connectivity with adjacent areas being insignificant should be clarified - inconsistent with applicability for tidal systems.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developer 29 May 2014	Added "the effect of" to the sentence.
ESI Findings - Round 2 19 September 2014	The change to the sentence addresses the validator's concerns.
Round 2 NCR/CL/OFI	Item closed.

Item Number	27
General Technical Expert Comments - Findings	General Technical Comment

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 5.2.2
ESI Findings - Round 1 22 April 2014	Procedures referenced in VCS module *VMD0016 Methods for Stratification of REDD and WRC Project Areas* (under development) were not able to be reviewed at this time
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Project Proponent 29 May 2014	Procedures are from a methodology undergoing approval.
ESI Findings - Round 2 19 September 2014	Pending approval of GESTS methodology.
ESI Findings, Post Reconciliation	Reference to GESTS methodology was removed. The stratification procedures provided in the methodology are now detailed and sufficient. Item closed.

Item Number	28
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 5.2.3
ESI Findings - Round 1 22 April 2014	The references cited for sediment load of >300 mg per liter balancing high-end IPCC scenarios for sea level rise appear to both be from San Francisco Bay. Because the methodology indicates that "project proponents may use this as a sediment threshold above which wetlands are not predicted to be submerged", additional documentation should be provided to substantiate that this threshold is sufficient outside San Francisco Bay.
Round 1 NCR/CL/OFI	NCR: Please address the round 1 finding.
Round 1 Response from Methodology Developer 29 May 2014	The 300 mg/l was our own interpretation of existing literature. Literature (French 2006) also indicates that at 250 mg/l a sea level rise of 15 mm is balanced at a tidal range of 1 m. To make the threshold that we propose more precise we add: "for marshes with a tidal range greater than 1 meter". Another paper supporting the threshold is by Morris et al (Assessment of Carbon Sequestration Potential in Coastal Wetlands) which also addresses soil compaction, and carbon production and decomposition elements. The models are independent of location.
ESI Findings - Round 2 19 September 2014	The French 2006 article could not be found in the materials provided. Please provide. Further, please point to the sections in Morris et al where the 300 mg/l was supported.
Round 2 NCR/CL/OFI	NCR: Please provide French 2006. Further, please point to the sections in Morris et al where the 300 mg/l was supported.

Round 2 Response from Project Proponent 08 October 2014	French paper provided.
Final ESI Findings	The French paper has now been provided and SSC has been modeled up to the 250 mg concentration. Item closed.

Item Number	29
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.3.4
ESI Findings - Round 1 22 April 2014	Unit "ppt" appears to be missing from sentence referencing formula 41
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	ppt added
ESI Findings - Round 2 19 September 2014	Confirmed revision. Item closed.

Item Number	30
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.2.4.4
ESI Findings - Round 1 22 April 2014	Estimation of N2O emissions in project scenario appears to be provided in Section 8.1.3.4 rather than referenced Section 8.1.3.3
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	Changed to 8.1.4.4
ESI Findings - Round 2 19 September 2014	8.1.4.4 is confirmed to now be the estimation of N2O emissions in the baseline scenario. Item closed.

Item Number	31
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.2.7
ESI Findings - Round 1 **22 April 2014**	Procedures referenced in VCS module Methods for monitoring soil carbon stock changes and GHG emissions in WRC project activities (under development) were not able to be reviewed at this time as the methodology has not been approved. Either include these requirements within the meth for review or the GESTS methodology will have to be approved prior to completion of this assessment.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer **29 May 2014**	That module is in its 2nd validation. We opt for waiting until the module is approved. This should happen before the end of the 2nd validation of this methodology. This procedure is being followed also in another methodology validation where procedures refer to a methodology under validation.
ESI Findings - Round 2 **19 September 2014**	Reference to the GESTS methodology has now been removed from the methodology. The monitoring procedures now provided in the methodology are detailed and sufficient. Item closed.

Item Number	32
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.3.2
ESI Findings - Round 1 **22 April 2014**	Not clear that section referenced (8.1.3.1) in discussion on setting project boundaries provides information to support this discussion
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent **29 May 2014**	Cross reference removed.
ESI Findings - Round 2 **19 September 2014**	Confirmed. Item closed.

Item Number	33

General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 9.1
ESI Findings - Round 1 22 April 2014	Check equations referenced in Monitoring section - first table appears should reference Equations 1, 7, 8 rather than 1, 6, 7
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	All tables reviewed and corrected. Note that Section 8.2.3 refers to equations in 8.1.4 to avoid repetition of many equations. We seek advice whether in 8.2.3 we can either (1) refer to the tables in 9.1 or (2) add tables in 9.2 for all the parameters for the project scenario but refer to section 8.1.3 for equations, or (3) add all equations to 8.2.4 with parameters in 9.2 (thus ondoing the simplification).
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	34
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 9.3.4
ESI Findings - Round 1 22 April 2014	Use of vegetation assessments to document no significant changes in mean annual water table depths in adjacent areas should provide supporting documentation on why this is an acceptable methodology - not clear how vegetation can be an acceptable substitute for direct hydrological monitoring, or how other factors that influence vegetation (such as succession over a 100 year project life) would be considered. Please provide support in the literature for this approach and describe how it would be applied along with thresholds for determining significant change.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	This is only valid if vegetation composition is a proxy for water table and GHG emissions, such as elaborated in the GEST methodology referred to in the section. The text said "where applicable" and we have changed this into: “where vegetation composition is a proxy for water table depth as described in the VCS methodology Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry and agriculture based on GESTS (under development)".

ESI Findings - Round 2 19 September 2014	Pending approval of GESTS methodology.
ESI Findings, Post Reconciliation	Reference to the GESTS methodology have been removed from the methodology. The methodology has now removed vegetative composition as a proxy for water table and GHG emissions. Item closed.

Item Number	35
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 9.3.9, second paragraph
ESI Findings - Round 1 22 April 2014	Appears to be a typo for "assess"
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	Changed to 'assess'
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	36
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 10 and in text citations
ESI Findings - Round 1 22 April 2014	Check references, particularly cross-reference citations in text with references (Craft et al. 1993 vs Craft et al. 1991; Chmura et al. 2001 vs Chmura et al. 2003)
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	Changed to 1993 and 2003.
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	37
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Annex A, Table A
ESI Findings - Round 1 22 April 2014	Table A citations appear to be missing reference for i. Vigmostad et al. 2005; also appears to be a format/font issue with dates for some of the other references for citations
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	Added in reference.
ESI Findings - Round 2 19 September 2014	Vigmostad reference now added. Item closed.

Item Number	38
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 2, second paragraph
ESI Findings - Round 1 22 April 2014	The sentence including "(i.e., either on the basis of the difference between the remaining soil organic carbon stock in the with-project and baseline scenarios after 100 years (total stock approach), or the difference in cumulative carbon loss in both scenarios since the project start date (stock loss approach)." is missing a parenthesis at the end.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	Parenthesis added
ESI Findings - Round 2 19 September 2014	Parenthesis added. Item closed.

Item Number	39
General Technical Expert Comments - Findings	General Technical Comment

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 2, second paragraph
ESI Findings - Round 1 22 April 2014	Last sentence second paragraph "...the latter by incorporating procedure from" should be "procedures".
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	s added
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	40
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 3
ESI Findings - Round 1 22 April 2014	Regarding the definition of "tidal wetland", would the "wetting and drying cycles of the tides" include freshwater areas such as the Great Lakes or other freshwater bodies regardless of the scale of tidal action?
Round 1 NCR/CL/OFI	CL: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	These areas are within the scope of the methodology because relevant processes concerning hydrology, sediment transport, salinity are covered.
ESI Findings - Round 2 19 September 2014	Additional review confirms a broader range of consideration for freshwater wetlands has been provided.. Item closed.

Item Number	41
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	"Project activities include, but are not limited to, the following". Please remove "but are not limited to" as the project activities need to be definitive.

Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	Text removed.
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	42
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.2.7
ESI Findings - Round 1 22 April 2014	The methodology states "The percentage of soil organic matter and the percentage of deposited sediment organic matter may be estimated directly using loss-on-ignition (LOI) data". Please provide greater definition of the steps required to delineate between soil organic matter and deposited sediment organic matter (allochthonous) within the methodology.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	The relevant part in Section 8.1.4.2.7 is now somewhat restructured. Also additional info added to 9.3.7.
ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	43
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.1
ESI Findings - Round 1 22 April 2014	Please give examples of accepted models for estimating CO2, CH4 and N2O emissions so project developers and validators have a relative basis for acceptable approaches to work from.
Round 1 NCR/CL/OFI	NCR: Please address findings.

Round 1 Response from Project Proponent 29 May 2014	In 8.1.4.1 we have specified the requirements for the use of deterministic models. We are not referring to any specific model. However, we want project proponents to use appropriate models when they are available and they then must justify the model based on the requirements in the VCS Standard. See also row 205 in tab VCS Standard_v3.4
ESI Findings - Round 2 19 September 2014	Understood. Item closed.

Item Number	44
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.2.7
ESI Findings - Round 1 22 April 2014	Methodology states that a general default factor of 50% may be used for %Calloch. Where does this value originate from? Please provide some substantiated basis for using this as a conservative default.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	We have removed this option altogether.
ESI Findings - Round 2 19 September 2014	Removed. Item closed.

Item Number	45
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.2 page 24
ESI Findings - Round 1 22 April 2014	Parenthesis are not closed in footnote 7 "...annual minimum biomass (factor = 0, assuming ephemeral aboveground biomass and complete litter decomposition."
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	Parenthesis added

ESI Findings - Round 2 19 September 2014	Confirmed. Item closed.

Item Number	46
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 8.1.3.1, 8.3.2
ESI Findings - Round 1 22 April 2014	Section 8.3.2 states "In tidal wetland restoration projects, dewatering of downstream wetlands is not expected if project boundaries are set sufficiently large to include expected areas of changed hydrology. (See Section 8.1.3.1)." however section 8.1.3.1 does not discuss setting of project boundaries to address dewatering. Please address.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	This section has been moved to 8.1.2. Cross reference changed to 8.1.4.2
ESI Findings - Round 2 19 September 2014	Item closed.

Item Number	47
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 5.2.2
ESI Findings - Round 1 22 April 2014	Methodology states "The default factor for SOC accumulation rate (see Section 8.1.3.2) may only be applied to areas with a crown cover of at least 50 percent. Areas below this threshold must be marked and excluded for the application of the default SOC accumulation rate." Should "for" be "from"?
Round 1 NCR/CL/OFI	CL: Please address findings.
Round 1 Response from Project Proponent 29 May 2014	Changed to 'from'

ESI Findings - Round 2 19 September 2014	Item closed.

Item Number	48
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	Methodology states "6. Hydrological connectivity of the project area with adjacent areas leads to a significant increase in GHG emissions outside the project area ". This is not consistent with the statement in the project summary which states “Under the applicability conditions of this methodology, ecological leakage does not occur, by ensuring that hydrological connectivity with adjacent areas is insignificant (i.e., causing no alteration of mean annual water table depths in such areas).” Is the metric a significant increase in GHG emissions outside the project area or insignificant hydrologic connectivity with adjacent areas? The majority of the methodology indicates the former.
Round 1 NCR/CL/OFI	NCR: Please address findings.
Round 1 Response from Methodology Developer 29 May 2014	See also the response in row 8. It is the former, and we now say in the summary: "the effect of hydrological connectivity".
ESI Findings - Round 2 19 September 2014	Item closed.

Item Number	49
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 4
ESI Findings - Round 1 22 April 2014	Please define what would signify a "significant increase in GHG emissions outside the project area". For projects within the USA why has demonstration of compliance with Section 404 of the Clean Water Act by providing an individual or general permit issued by the USACE not been included as a requirement?
Round 1 NCR/CL/OFI	NCR: Please address findings.

Round 1 Response from Project Proponent 29 May 2014	We have elaborated Section 8.2.3 on ecological leakage. Regarding the CWA, we refer to AFOLU general project requirement 3.1.3 Implementation of the project activities shall not lead to the violation of any applicable law, regardless of whether or not the law is enforced. This is not a methodology requirement.
ESI Findings - Round 2 19 September 2014	Though it is true that the AFOLU requires that the activities not lead to a violation of any applicable law, there are a broad range of laws that are likely to come into play with projects of this nature and the general permit has been used before as an effective tool for compliance demonstration. It would be helpful to at least state this as an optional example of a way to show compliance.
Round 2 NCR/CL/OFI	OFI: Consider including this requirement as it would facilitate project developers demonstration of legal compliance.
Round 2 Response from Methodology Developer 08 October 2014	Project developers are already required to ensure that the project complies with all appropriate laws. We prefer to leave the procedure as is.
Final ESI Findings	This is an OFI. We consider this item closed.

Item Number	50
General Technical Expert Comments - Findings	General Technical Comment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 9.3.4
ESI Findings - Round 1 22 April 2014	Methodology states "Alternatively, where applicable, a vegetation assessment may done be in the zone adjacent to the project boundary. Results for vegetation types adjacent to the project boundary are compared with the vegetation composition in the same area at the project start date. " What would qualify as a significant difference in vegetative composition? This seems very subjective. Additionally, how would non-project related changes in offsite vegetation composition be accounted for to reduce the chance of a false positive?
Round 1 NCR/CL/OFI	CL: Please address the round 1 findings.
Round 1 Response from Project Proponent 29 May 2014	See also the response in item 34. The difference in vegetation composition is significant if this leads to a different correlated water table depth or water table depth class (sentence added to the methodology). This is outlined in the GEST methodology.
ESI Findings - Round 2 19 September 2014	This will be pending GEST approval. Also, the sentence added reads "The difference in vegetation composition is significant if this leads to a different correlated water table depth or water table depth class. It seems it should state "see the VCS GESTS methodology for procedures". Once the GESTS methodology is completed the full number and name of the GESTS methodology should be added to all sections where GESTS is referenced in the methodology.
Round 2 NCR/CL/OFI	Pending GESTS approval and appropriate referencing in the methodology.

Round 2 Response from Methodology Developer 08 October 2014	Sentence adjusted.
ESI Findings, Post Reconciliation	Reference to the GESTS methodology have been removed from the methodology. The methodology has now removed vegetative composition as a proxy for water table and GHG emissions. Item closed.

Item Number	51
General Technical Expert Comments - Findings	3.2.1 The developer shall prepare the methodology element documentation that will be subject to a public stakeholder consultation and independent assessment by two validation/ verification bodies. This means the developer shall prepare, in accordance with all the applicable VCS rules, the new methodology, methodology revision, module or tool, as applicable. The methodology element documentation shall state clearly the date on which it was issued and its version number. Methodologies and methodology revisions shall be prepared using the VCS Methodology Template and modules and tools shall be prepared using the VCS Module Template.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Methodology (footer)
ESI Findings - Round 1 22 April 2014	The methodology is currently in the double validation process. The methodology clearly states its version number. The template appears to have been used but the template version number is missing from the footer.
Round 1 NCR/CL/OFI	CL: Please ensure the current methodology template is being used. Please ensure the footer for the template reflects the VCS version number.
Round 1 Response from Methodology Developer 29 May 2014	Version added to footnote; methodology screened on correct formatting.
ESI Findings - Round 2 19 September 2014	Confirmed - the current version of the methodology template (v3.3) is being used. Item closed.

Item Number	52
General Technical Expert Comments - Findings	1) The methodology developer shall list all approved or pending methodologies, under the VCS or an approved GHG program, that fall under the same sectoral scope or same AFOLU project category4 or combination of sectoral scopes or AFOLU project categories, as applicable. The list shall include, at a minimum, all such methodologies that are available sixty days before the proposed methodology is submitted to the VCSA for public consultation. Such list of methodologies ("listed methodologies") shall contain the methodology name and reference number, and the GHG program under which it is approved or pending.

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Methodology "Relationship to Approved or Pending Methodologies" page 2
ESI Findings - Round 1 22 April 2014	The methodology states that procedures are integrated from the "VCS methodology Methodology for Wetland Creation (under development)" however this is now approved. Please revise the meth to state the full title and VCS methodology number "VM0024 Methodology for Coastal Wetland Creation".
Round 1 NCR/CL/OFI	NCR: Please revise the meth to state the full title and VCS methodology number "VM0024 Methodology for Coastal Wetland Creation".
Round 1 Response from Methodology Developer 29 May 2014	Done
ESI Findings - Round 2 19 September 2014	Confirmed - the full title is now included. Item closed.

Item Number	53
VCS Methodology Template	10 REFERENCES AND OTHER INFORMATION Include any relevant references and any other information relevant to the methodology/revision.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	section 10
ESI Findings - Round 1 22 April 2014	The methodology provides a list of references, though two of them may be combined. (See Andrews, et al, and Anisfeld references.)
Round 1 NCR/CL/OFI	CI: Please examine the second reference on the list and see if it is a combination of two references.
Round 1 Response from Methodology Developer 29 May 2014	Corrected.
ESI Findings - Round 2 19 September 2014	Reference list has been corrected. Item closed.

APPENDIX B – DOCUMENTS RECEIVED FROM CLIENT

Documents received 03 January 2013 (from VCS)
- Methodology for Tidal Wetland and Seagrass Restoration + VCSA, 3 JAN 2013.docx

Documents received 27 January 2014
- Methodology for Tidal Wetland and Seagrass Restoration 20140127.docx

Documents received 07 February 2014 (from VCS)
- Methodology for Tidal Wetland and Seagrass Restoration, 7 FEB 2014.docx

Documents received 24 March 2014
- Methodology for Tidal Wetland and Seagrass Restoration, 7 FEB 2014 rev 20140324.docx

Documents received 15 May 2014
- Tanner Resume 102913.pdf
- Federal Resume_DeVore_2013.docx

Documents received 25 July 2014
- Methodology for Tidal Wetland and Seagrass Restoration, 7 FEB 2014 rev 2....docx
- 068_00-RAE Methodology Validation Checklist_FINAL Round 1 responses 0725....xlsx

Documents received 21 August 2014
- Smith et al. - 1983 - Nitrous oxide emission from Gulf Coast wetlands.pdf
- AndrewsESCO treatise chapter 2012.pdf
- Anisfeld et al. - 1999 - Sedimentation Rates in Flow-Restricted and Rest....pdf
- Callaway et al 2012.pdf
- Chmura et al. - 2003 - Global carbon sequestration in tidal, saline wetl....pdf
- Morris and Edwards et al 2012.pdf
- Poffenbarger et al. - 2011 - Salinity Influence on Methane Emissions fro....pdf

Documents received 08 October 2014
- Methodology for Tidal Wetland and Seagrass Restoration, 7 FEB 2014 rev 20141007.docx
- 068_00-RAE Methodology Validation NCRs Round 2 IME4.xlsx

Documents received 03 November 2014
- French.Mar. Geol.2006.pdf

Documents received 17 August 2015
- Tidal Wetland and Seagrass Restoration, 17 AUG 2015.docx
- 04_WetlandSeagrassRestoration, 6 JUL 2015.PDF

Documents received 29 September 2015
- Tidal Wetland and Seagrass Restoration 17 AUG 2015 IME.docx

Documents received 16 October 2015
- Tidal Wetland and Seagrass Restoration 16 OCT 2015 clean.docx

APPENDIX C – VVB AFOLU PROJECT VALIDATION EXPERIENCE

Name of Project	Validation Report – Date Issued	Date Project Registered	GHG Program Registered With
Kariba REDD+ Project	29 September 2012	15 October 2012	VCS
Lower Mississippi Valley Grouped Afforestation Project	11 October 2012	12 November 2012	VCS
Restoration of degraded areas and reforestation in Cáceres and Cravo Norte, Colombia	24 February 2011	14 March 2011	VCS
TIST Program in Kenya VCS-001	2 March 2011	15 April 2011	VCS
TIST Program in Kenya VCS-002	2 March 2011	15 April 2011	VCS
TIST Program in Kenya VCS-003	2 March 2011	15 April 2011	VCS
TIST Program in Kenya VCS-004	2 March 2011	17 April 2011	VCS
TIST Program in Kenya VCS-005	16 December 2011	22 December 2011	VCS
Bull Run Overseas Forest Carbon Project: Phase 1	15 March 2012	13 April 2012	VCS
Redd Forests Grouped Project: Protection of Tasmanian Forest	13 December 2012	pending	VCS
TIST Program in Uganda VCS-001	20 March 2012	25 May 2012	VCS
TIST Program in Uganda VCS-002	20 March 2012	25 May 2012	VCS
TIST Program in Uganda VCS-003	20 March 2012	25 May 2012	VCS
TIST Program in Uganda VCS-004	20 March 2012	25 May 2012	VCS
Protection of the Bolivian Amazon Forest	26 March 2012	25 May 2013	VCS
Reforestation of Degraded Lands in the Valle California of Patagonia, Chile	18 June 2012	29 August 2012	VCS
April Salumei Sustainable Forest Management Project	08 October 2013	Pending	VCS
TIST Program in Kenya – VCS-006	27 September 2012	01 October 2012	VCS
TIST Program in Uganda – VCS-005	7 March 2013	13 March 2013	VCS
TIST Program in Uganda – VCS-006	7 March 2013	13 March 2013	VCS
TIST Program in India VCS-001	7 March 2013	13 March 2013	VCS
Avoiding Planned Deforestation and Degradation in the Valdivian Coastal Reserve, Chile	12 November 2013	pending	VCS
TIST Program in Kenya – VCS-009	7 March 2013	13 March 2013	VCS
Reforesting Degraded Lands in	23 April 2013	02 May 2013	VCS

Chile Through the use of Mycorrhizal Inoculation			
Tasmanian Land Conservancy–New Leaf Project	29 October 2013		VCS/CCB
Grouped Project – Protection of a Tasmanian Native Forest	03 December 2013		VCS
Kuzuko Lodge Private Game Reserve Thicket Restoration Project	30 January 2014		VCS
Purus Project – A Tropical Forest Conservation Project in Acre, Brazil	10 December 2013		VCS
Russas Project – A Tropical Forest Conservation Project in Acre, Brazil	26 March 2014		VCS
Valparaiso Project - A Tropical Forest Conservation Project in Acre, Brazil	11 July 2014		VCS