Public Comments for the *Improved Forest Management Methodology*

This methodology was open for public comment for the dates 17 August 2020 – 16 September 2020.

Comment 1

Submitted by: Alexandra Kosiba

Organization: State of Vermont

Country: USA

This comment was received via email to Verra.

I am very supportive of the proposed methodology by TNC, AFF, TerraCarbon and others for the Family Forest Carbon Program. This program will allow smaller landowners to sell carbon offsets; in a state like Vermont where 80% of forests are privately held, but mostly of small acreage, this an important step to have more forest carbon offset projects.

I would suggest that, as least for states in New England, the minimum project size of 50 acres be reduced. In Vermont, we have a current use tax abatement program (Use Value Appraisal) for actively managed forests with a state-approved forest management plan, where 25 acres is considered the minimum enrollment. If you refer to the report below, Department of Forests, Parks and Recreation found that harvesting that occurred on private lands had a mean size of 62 acres (maximum: 481 acres, minimum: 2 acres, median: 31 acres).

https://fpr.vermont.gov/sites/fpr/files/Forest_and_Forestry/Forest_Based_Business/Library/Assessment%20of%20Timber%20Harvesting%20and%20Forest%20Resource%20Management%202012_FINAL_2.pdf

Reducing the minimum size to 25 acres would allow all landowners enrolled in Vermont's current use program to be eligible to sell forest carbon.

Comment 2

Submitted by: Mani Moktan

Organization: Green Growth Consulting Firm

Country: Bhutan

This comment was received via email to Verra.

Comments on the Improved Forest Management Practice VCS Methodology Version 4.0

4 Applicability conditions

2) "improved forest management practice" will constitute "commercial harvest" which reduces biomass and consequently carbon stock to a level (may be below the baseline). This affects carbon/CO_2 sequestered and credits. What level of harvest needs to be allowed that are considered sustainable in the local management plans) e.g., certain % of the annual increment of the project area stands?

How to account, trees missing due to illegal cutting prevalent in tropical forests?

5) ≥ 50 contiguous acres…while contiguous acres/area is possible in plantation forests or natural stands that are uniform in age, composition, and structure but natural forests (both degraded & stocked) is highly variable? How to account age-class stands where GHGs sequestration capacity varies by stands?

5 Project boundaries

Table 5.1: Selected carbon pools.

Soil organic carbon pool… not expected to be subject to significant change due to the project activity? This is correct in plantation forests but in natural forest significant accumulation of above ground herbaceous biomass occurs over a period (50-100 years), and organic carbon matter deposits cannot be avoided.

6 Baseline scenarios

e) Baseline plots from the "outside project area" must be located in the same eco-region. This is too large in space, where environmental and social conditions vary much making the paired test invalid. The paired plots and its monitoring and statistical test demands that composite control plots are adjacent to project plots.

Appendix B: There should be SOP (Standard Operating Procedure) for composite treatment plots as well.

Comment 3

Submitted by: Chandler Van Voorhis

Organization: GreenTrees, LLC

Country: USA

This comment was received via email to Verra.

As the leading developer in the U.S. of a forestry project that includes over 500 landowners, we champion efforts to provide options to small and medium landowners. However, it is important to make sure we have a consistent bar for crediting landowners. That way we can ensure the integrity of the market. There are four areas this methodology needs to address:

1. While Verra does state that a minimum 30 year term is required, there is no legal or contractual mechanism to ensure any minimum period (and Project Developer is marketing it to landowners as a 20 year commitment)
2. Intentional reversals from harvesting are treated the same as an unintentional reversal from a natural disaster
3. There is no requirement to report reversals or that a landowner that causes a reversal by harvesting has to replace credits
4. In the event an intentional reversal does occur through harvesting, there is no reporting mechanism, and even if all the emissions reductions from a project are reversed, the project is not terminated until 15 years have passed without a verification at which point credits equal to those not verified for the last 15 years are retired from the buffer pool account (kicking the can down the road for 15 years).

If the four areas are not strengthened, it calls into question quality issues that can cause market confusion. By addressing and strengthening these four areas, we can create a consistent bar, ensuring quality and access by small and medium landowners.

Comment 4

Submitted by: Maria Fernanda Buitrago Acevedo

Organization: South Pole

Country: Colombia

This comment was received via email to Verra.

Dear Verra,

We reviewed the methodology for Improved Forest Management and we found a couple of questions/comments that we would like to share with you:

1. Permanence issue:

The methodology states the following:

"**Stock Change:** For all activities, stock change is directly monitored in **paired permanent treatment (representing the project scenario) and control plots (representing the baseline scenario),** permitting GHG emission reductions to be estimated independently for every sample unit (or pair). **A control is represented by a collection of sample plots outside of the project area that in combination match the initial conditions of each paired treatment plot and represent the baseline scenario.** Ex post monitoring of control plots provides a more robust estimation of impacts, compared to model- or default-driven approaches, that will reflect the effects of exogenous factors like climate and timber markets on achieved emission reductions. "

Comment: Composite controls must be established in the same type of forest (baseline),

- Does this mean that the project owner needs to own additional areas (probably nearby the project area), where the baseline activity must continue, to can compare and have the paired plots?

- How can we assure the permanence of the baseline for the entire crediting period ?. Since the baseline is supposed to be outside the project area, and it might not be under the control of the project owner?. What would happen if all the surrounded areas are transformed to other land uses, and the baseline scenario disappears completely?

- How close by the composites need to be?

- What are the requirements for the composite control (with respect with project plots). i.e distance to between the composite controls and the project controls (i.e. how many km are allowed?), site index differences, slopes, species composition?

So far the requirements about the establishment of the composite plots is not clearly defined in the methodology, and this could leave too much room to interpretations, which could lead to variable auditing and verification processes

Thank you very much for considering our comments and questions,

Comment 5

Submitted by: Connie Best

Organization: The Pacific Forest Trust

Country: USA

This comment was received via email to Verra.

Thank you for the opportunity to provide comments on the above-referenced proposed methodology for quantifying greenhouse gas (GHG) emissions reductions though Improved Forest Management for purposes of crediting as offsets to GHG emissions.

The Pacific Forest Trust is a forest conservation organization dedicated to protecting the public benefits of America's forests in partnership with forest owners, agencies and communities. We have been advocating for leveraging the climate benefits of forests to mitigate climate change since our inception 27 years ago, and have played a significant role in developing GHG methodologies, projects and related public policy, including the development of California's Compliance Offset Protocol: U.S. Forest Projects. We continue to advise forest owners, policy makers and other stakeholders in this regard.

We strongly support creating incentives for family forest owners to actively manage their forests for climate benefits, including both mitigation and adaptation. Offset projects that provide real, permanent and independently verifiable GHG reductions can underwrite small landowner's related changes in forest management. Therefore, any new methodology for GHG quantification bears careful consideration.

We have reviewed the subject methodology as presented and our comments are as follows:

- It is an intriguing approach that bears further scrutiny due to its apparent relative simplicity which could allow for wide participation, especially by smaller forest owners.
- Unfortunately, the presentation is so bare bones, it is difficult to understand the methodology with any degree of certainty. It would benefit significantly from charts or other graphics to illustrate the approach; and from providing examples. Absent a more thorough presentation, stakeholders lack sufficient information to understand much less endorse this novel approach.
- Further, certain material information is unexplained and therefore lacks justification. For instance, the formula for Uncertainty in Section 8.5 includes "-15%" without any explanation.
- The Monitoring section does not state clearly how long monitoring is to continue. Indeed, nothing in the document identifies how long anything is to continue. The crediting period is not addressed. GHG reductions that last 100 years is the international standard and one VCS acknowledges. There is nothing in the information provided that addresses how this will be

attained. The duration of a forest-based emission reduction is crucial to its reality as forests are inherently dynamic systems, with natural and human-caused fluctuation in carbon stocks. A particular forest practice may have many social or ecological benefits but its GHG benefits may be either over-credited or under-credited depending on the period. GHG measurement may be a snapshot in time, but it is the length of the data set that is important in an inherently fluctuating system. Being silent on the period for project measurement and monitoring makes the methodology meaningless form the perspective of forest-based GHG quantification.

- The latter comment may speak to the structure and requirements of the VCS Program which to us seems to compartmentalize critical elements that are inherently intertwined in a robust and credible GHG forest offsets regime (i.e., project length, crediting period, monitoring program, permanence risk, insurance against reversals, etc.). One cannot understand and comment on the physique of an elephant only seeing the legs without the rest of the body. It seems critical to us that the methodology proponent provide supplemental information to paint the full picture of at least one instance where they intend to implement the methodology.
- The lack of clarity of the reasonableness of the methodology is further clouded by the potential of its use in the context of grouped projects. Having particular projects on different properties – ones intended to only last for 20 years to begin with – be permitted to enter and exit a group compounds the risk of having any real, lasting GHG benefits accrue within the parent group.

In summation, we feel that the proponents need to provide a more thorough exposition of both the methodology and the related aspects of project design and then undergo further public review before VCS takes further steps to approve this approach.

Forest based offsets offer opportunities for real and enduring GHG emissions reductions critical to solving the climate crisis. However, crediting short term practices is insufficient to meet the necessarily high standard to function as an offset, however beneficial socially or ecologically the practices may be. We need to keep in mind that credited GHG emissions reductions that are packed and sold as offsets, are then used by entities to achieve “carbon neutrality”. Therefore, a forest-based offset needs to be reasonably equivalent to a direct GHG emissions reduction – otherwise more GHGs will be emitted under the guise of a false “neutrality”. That would be tragic.

Comment 6

Submitted by: Gordon Vermeer

Organization: SilviaTerra

Country: USA

This comment was received via email to Verra.

Re: methodology currently under development and open for public comment, titled 'Methodology for Improved Forest Management'

To whom it may concern,

Thank you for the opportunity to comment on this methodology as it progresses through your review process. Our team members at SilviaTerra are leading experts in forest biometrics, with 10 years of experience serving the nation's largest forest owners and stakeholders with biometric analysis.

We applaud efforts to make natural capital markets more accessible to all landowners. We support this methodology's goal of increasing small landowner participation in forest carbon markets and hope the following comments will help contribute to the development of this proposed methodology.

Effective baselining is required to demonstrate additionality in improved forest management projects. Section 3.12 of the most recent *VCS Standard* says, "The baseline scenario shall be accurately determined so that an accurate comparison can be made between the GHG emissions that would have occurred under the baseline scenario and the GHG emissions reductions and/or removals that were achieved by project activities." In addition, a credible baseline is also crucial for avoiding adverse selection of program participants. A baseline that can be "gamed" results in reduced climate impact because landowners can receive credit for carbon removal or reduced emissions that are not additional.

Our comments are focused on the integrity of baseline construction and uncertainty estimation in the methodology as currently proposed. We believe clarifying or resolving these will help ensure credible additionality and objectivity of project proponent calculations.

1. Propagation of uncertainty in equation 10

Uncertainty in element-level (individual composite plot) baseline values is not integrated in equation 10, which may result in substantial underrepresentation of the variance in the total additional carbon estimate.

The proposed methodology does not specify a complete variance estimator incorporating variance arising from the selection and weighting of inputs to the composite plot elements. Since the term $\Delta CO2\ bsl,i,t$ is itself a derived estimator with variance, the propagation of that variance should be accounted for.

2. Regression to the mean

By construction, the composite plot selection and averaging technique in the proposed methodology may result in substantial shrinkage toward the mean and in a biased baseline assessment relative to paired sample plots.

The admirable intent of this methodology seems to be to create highly specific baselines for each treatment plot. However, the more FIA plots that are used to construct each composite plot, and the more evenly those plots are weighted, the more likely it is that the composite value would regress toward the mean and be a poor indicator of true baseline. We expect project proponents would benefit from additional guidance on how to address this concern, to mitigate the possibility that with identical inputs, two different project proponents could arrive at materially different baselines.

3. Feasibility of plot selection

The composite plot selection constraints in the proposed methodology may yield too few eligible plots to produce a robust baseline estimate.

This methodology relies on the construction of "composite plots" to establish a baseline. It assumes that there is sufficient density of FIA data to inform a credible baseline estimate for every enrolled property. This may not be a valid assumption.

There are many FIA plots, but not an infinite number of them. This methodology proposes filtering the FIA plots by distance to "treatment plot", forest type, site class, and many other variables. By the time all of these filters have been applied, there may be a very small number (or even zero) plots remaining from which to construct a composite plot. If a composite plot is constructed from a small number of constituent FIA plots, the variance in the composite average

may be quite high, rendering it an unstable estimate of the baseline. There is certainly a tension between filtering FIA plots to match the treatment plot as closely as possible and the need to include a sufficient number of plots in the composite to achieve a stable estimator. Striking this balance may not always be possible. The methodology does not indicate what course of action ought to be taken when very few plots match a treatment plot.

4. Backward-looking vs. forward-looking baselines

A time lag in composite plot measurements may substantially bias calculated baseline values. This methodology seems to assume that future economic conditions will be similar to those of the past. There are obvious cases in which this is unlikely to be true. For example, in the Lake States region of the US, where many mills have shut down recently, it is likely that harvesting activity over the next ten years will be much less than the prior ten years because there is no longer a viable market for the standing timber.

A hypothetical adversarial project proponent could use this methodology to enroll properties in areas where mills have just shut down. The backward-looking composite baseline may reflect more aggressive harvesting (and thus lower levels of carbon stocking) than the forward-looking depressed economic situation after the mill shut down. The forward-looking timber harvesting activity may be lower (and thus higher levels of carbon stocking) simply because regional markets have declined. By enrolling properties in areas like this, the proponent could get credit for "additional" growth due to market conditions rather than additional climate impact.

Conclusion

In summary, our view is that this methodology could improve its rigor of baseline determination and estimation of uncertainty. We are excited to see new approaches proposed for engaging all landowners in forest carbon markets. This is an area where innovation is much needed to achieve the scale of climate impact that our society demands.

Comment 7

Submitted by: Paula Swedeen

Organization: Conservation Northwest

Country: USA

This comment was received via email to Verra.

Thank you for the opportunity to comment on the proposed IFM methodology. Conservation Northwest has been working in the northwestern United States on protecting, connecting, and restoring wildlands and wildlife of the region for the past 30 years. Our organization recognizes the importance of small forest landowners to conserving the natural heritage of the regions in which they live, and their potential contribution to solving the climate crisis. In addition, I have many years of professional experience in the development and implementation of forest carbon protocols and projects over the past twelve years of my 30-year career. CNW recognizes that accessible and easy to implement financial incentives play a key role in supporting the ability of small forest landowners to remain on the landscape and manage their lands for the ecosystem services from which the public benefits. The development of a forest carbon offset protocol which serves this class of landowners if therefore of great interest, and potentially of great benefit.

We provide the following comments with the intent to untlimately support a system in which small forest landowners can receive legitimate payments for managing their lands for long-term climate benefits.

1. The approach of establishing a set of control plots in the non-project area to correspond to plots in the project area and then crediting the increase in carbon stocks in the project area compared to the non-project area plots as baseline makes sense and has promise. Being able to treat the baseline carbon stocks as dynamic rather than static can provide a more accurate picture of how much a project's activities are actually improving carbon stocking compared to the real non-project scenario. Characterizing and quantifying baseline conditions can be very difficult under many protocol approaches. This approach has the potential to avoid both over and under crediting projects compared to what is happening in the surrounding landscape. We support this approach contingent upon other methodological and program rules which support long-term protection of project-based carbon stock gains, and which can account for short-term changes in baseline conditions which do not represent an actual trend. Therefore a crucial piece of missing information from the methodology is the minimum time period for assessing and crediting actual carbon gains in the project area compared to the baseline situation.
2. The methodology as presented makes it difficult to assess how the particulars of participating landowners obligations in an area and the timing by which they enter and exit the program will impact the ability of the program to claim that offsets generated are real and permanent. In

the absence of specific aggregation rules and an understanding of individual landowner obligations in terms of time commitment and penalities for early exit, it is impossible to determine how probable it is that the methodology will result in durable gains of carbon stocks within a project area that in reality sequester long-lived greenhouse gas emissions for which a project is claiming to offset and thus negate the impact of those emitted GHG's on atmospheric warming.

3. The question of how the aggregation scheme will work to ensure permanence is particularly important. Maintaining stocks against which credits are issued for at least 100 years is the international standard, and is what is required in the only regulatory-grade offset program in the U.S. (that administered by the California Air Resources Board). It will be important for this methodology to spell out how risk to non-permanence is going to be assessed within an aggregation scheme. The idea that buffer credits generated will be adequate to cover any risk of too many landowners wishing to exit the project early, or of not enough landowners enrolling in later years to maintain the carbon stocks that were issued VCU's earlier in the program's life should be assessed with a critical eye. Scenarios should be gamed out in which interest of landowners does not endure over a 100 year period such that early exiting projects reverse their additional carbon gains and those reversals are not compensated for by later participants. How does the program maintain integrity under such a scenario? How can such an outcome be guarded against?

4. Wood product decay factors: recent research conducted for carbon dynamics of harvested wood products in the Pacific Northwest should be incorporated in the quantification factors used to calculate the amount carbon remaining in both long and short-lived wood products, at least for that region. The amount of mass remaining after 100 years for softwood lumber used in section 9.1 is 0.51. Research described in Hudiburg et al., 2019 (Hudiburg, T.W., Law, B.E., Moomaw, W.R., Harmon, M.E. and Stenzel, J.E., 2019. Meeting GHG reduction targets requires accounting for all forest sector emissions. *Environmental Research Letters*, *14*(9), p.095005) suggests that this factor should be significantly lower.

Comment 8

Submitted by: Julian Bauer

Organization: EP Carbon

Country: USA

This comment was received via email to Verra.

Verra Secretariat,

EP Carbon is pleased to submit feedback on the proposed Methodology for Improved Forest Management V1.0.

We support the creation of a flexible IFM methodology capable of providing streamlined development options and increasing enrollment of forestland into carbon offset projects. We recognize the Methodology for Improved Forest Management V1.0 has the potential to connect the various Verra-approved IFM methodologies together in a way that reduces the barrier to enrollment by simplifying development.

That being said, we feel additional work can be done to flush out the methodology to ensure project impacts are fully accounted for.

Our initial set of comments focus on the methodology's treatment of leakage, outlined in Section 8.3.

As the methodology is written, leakage is restricted to market leakage; activity shifting leakage is assumed to be zero per applicability condition 4 (see below).

> *Applicability condition 4 (pg. 8):*
>
> *Within one year of the project start date, all forested properties > 50 contiguous acres under the control of the project area landowner(s) and potentially subject to harvest, including areas outside of the project area, must be managed under a plan approved by a state or federal agency, where applicable, and/or subject to oversight by a third party. The management plan must explicitly demonstrate that management practices are not unsustainable. Examples meeting the above criteria include, but are not limited to, a Forest Stewardship Plan, certification under the Forest Stewardship Council (FSC), certification under the Sustainable Forestry Initiative (SFI), or membership in the American Tree Farm System (ATFS).*

It is unclear how this applicability condition prevents leakage.

1. How does lack of continuity prevent leakage? Couldn't someone harvest tracts that are near each other but not necessarily contiguous but packaged as single timber sale? Or harvest with their neighbor's property as recently happens with small landowners.

2. What is preventing a landowner that owns 80 acres of forestland from enrolling 40 of these acres in a carbon project and then liquidating the timber on the other 40 acres, effectively resulting in 100% activity-shifting leakage?

3. How does a management plan approved by a state or federal agency prevent activity shifting leakage? Couldn't a management plan simply be redefined to increase timber yield to offset timber losses that may be incurred by a carbon project?

4. What is a "project area landowner?" What if the project area landowner is a Limited Liability Partnership between three individuals? Does this applicability condition extend to these individuals?

5. Shouldn't uncertainty be derived from equation 8, the calculation of net emissions reductions? Where does equation 10 come from? If I derive the uncertainty from equation 8, I see that there are many sources of uncertainty not included in equation 10 and that equation 10 probably underestimates uncertainty:

6. Var(ER_t) = A_t^2*Var(ER\bar_t) + Var(LK_t) <--- Where is Var(LK_t) in equation 10? Why doesn't A_t^2 appear in equation 10?

7. Does sqrt(Var(ER\bar_t)) = equation 10? Can this be independently confirmed?

8. The matching outcomes described in section 6 are conditional on a set of purposively selected covariates. However, equation 10 does not explicitly address uncertainty in the matching outcome. Why not, isn't this potentially a significant source of uncertainty?

9. Further, the matching outcomes could be easily gamed by limiting the set of covariates during model selection. Further criteria should be specified to ensure there are representative covariates in the selection set in a sufficient quantity to minimize uncertainty.

10. What additional requirements are needed for aggregation? What eligibility criteria for new project activity instances must be addressed in a grouped project?

11. Consider equation 9. Assume I have a 5,000-acre carbon project and that I liquidate all timber the year prior to starting the project. As there is no applicability condition to prevent me from doing this, it appears that I can just get credit for regrowth even though I unsustainably clearcut 5,000 acres the year before. As a young forest, my regrowth is probably going to accrue carbon faster than the control group. Should this be allowed?

12. If I own 40 acres of forestland with no legal restrictions to harvesting (meeting current applicability conditions) but it is landlocked without timber egress, then is my project additional? In this case, wouldn't the carbon have accrued anyway as I cannot harvest any trees? Shouldn't this case be handled to ensure additionality?

13. Further, what if the species on my property are not merchantable; there is no timber market for my trees. Is the project additional as there wouldn't be any harvesting?

We appreciate the opportunity to provide comments on the proposed methodology and welcome follow-up discussions on any of the above. Please feel welcome to reach out with any questions or concerns.