SUMMARY OF PUBLIC CONSULTATION

VM0045 Methodology for Improved Forest Management using Dynamic Matched Baselines from National Forest Inventories, v1.1

A draft of the VCS methodology *VM0045 Methodology for Improved Forest Management Using Dynamic Matched Baselines from National Forest Inventories, v1.1* was open for public consultation from 15 December 2023 to 15 January 2024. This document includes a list of each comment received and Verra's response.

GENERAL FEEDBACK

Section 4 – Applicability conditions

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#	Organization	Comment	Verra's Response
1	Anonymous	could clarify plan and conditions to add appendix (page 6)	Verra is currently considering the expansion of the applicability of VM0045 to other countries. This would be done as a major revision to the methodology.

Section 5 – Project Boundary

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2	Anonymous	could add optional choice to account for, nonwoody biomass, litter, and soil organic carbon etc. (page 7)	Verra notes the recommendation for future major revisions to the methodology. Please consider that adding carbon pools such as soil organic carbon requires to add soil carbon specific monitoring requirements.

Section 6 – Baseline Scenario

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3	Anonymous	could provide a more detailed explanation of what is "subsequently held constant", e.g. does the project have to have the right to control the plot and prevent human interventions	The selection and weighting of constituent baseline plots cannot be changed throughout the project crediting period. Baseline plots are not controlled by the project owner since they are selected from the U.S. Forest Service (USFS) Forest Inventory and Analysis (FIA) plots.

Section 8 – Quantification of GHG Emission Reductions and Removals

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4	Anonymous	could have clearer references and explanation on the calculation of mean ERt and CRt (page 27)	Please refer to page 25, paragraphs (1), (2), (a) and (b) for explanations regarding how variations of carbon stocks in the baseline and project scenarios influence mean ERt and

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			CRt.
5	The Nature Conservancy	Over the past several years, there has been increasing demand within the VCM to label credits (e.g. https://verra.org/verra-publishes-responses-to-consultation-on-proposed-vcu-labels/), including differentiation of Reduced Emissions credits produced by reducing expected GHG emissions, from Removals credits produced through active sequestration of CO2 from the atmosphere. As Verra's own announcement acknowledges, these labels are largely driven by market preferences, rather than scientific necessity. More specifically, the demand for removals credits is driven largely by purchasers' desire to make their climate commitments more digestible for the public, which can intuit the value of removals far easier than that of reduced emissions. Throughout 2023, as Verra has pursued the inclusion of labeling equations in its IFM methodologies, the Nature Conservancy has investigated the way these changes could benefit or detract from our own work. One example of this work is our collaboration on the revision of VM0045, which uses a dynamic baseline to take a critical step forward in the scientific credibility of carbon accounting methodologies, to include equations that can differentiate reduced emissions and removals. Our specific comments below will focus on 3 overarching points: 1) TNC remains uncertain that the basic decision to label NCS-based VCUs in a manner that differentiates Reduced Emissions from Removals is a good and scientifically-supported idea, 2) Even if it is advisable to label VCUs, TNC remains	Verra thanks you for sharing these insights and for your collaboration. Verra does not take the position that reductions or removals are superior. The labels are merely a form of transparency that some users in the market are requesting. Labels are optional for project proponents to request, but standardization of the quantification is important for the VCS program. The mitigation outcome type label was introduced in the August 2023 VCS Program update. See section 3.15 of the *VCS Standard 4.5*, Section 3.8 of the *Methodology Requirements v4.4*, and the Mitigation Outcome Type Labels Guidance. This minor revision to VM0045 and the associated public consultation was not aimed at addressing the broader policy decision to enable labelling of removals and reductions. It was focused on finding the most appropriate way to separate reductions and removals within the VM0045 methodology. Verra values your feedback and invites you to continue collaborating in upcoming revisions to this and other methodologies.

Section 8 – Quantification of GHG Emission Reductions and Removals			
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		uncertain that the specific labeling equations being built into the revision of VM0045 are the best, most logical and scientifically robust option available, and 3) We feel that Verra's review and development process has been well-intentioned but insufficient in length and detail, given the substantial impact these changes could have on the functioning of the VCM.	
6	The Nature Conservancy	Contrary to the current focus on removals credits, TNC's research has shown that prioritizing the protection and maintenance of existing carbon stocks (which results primarily in Reduced Emissions) is the most efficient path to climate change mitigation. Research from our Natural Climate Solutions Science team has highlighted this "NCS Hierarchy" as a way to ensure efficient progress toward broad climate change mitigation goals (see https://www.nature.com/articles/s41558-021-01198-0). This research shows definitively that when we focus on cost efficient NCS, those available for ≤US$100 tCO2e−1, reducing emissions through protection and better management of existing carbon stocks can provide 4.5 times the mitigation potential of actively removing GHGs through restoration. While the categories we considered in that research (protection, improved management, and restoration) do not perfectly crosswalk to the categories Verra is currently labeling (i.e. removals, emissions reductions), practices that implement protection and improved management strategies are likely to produce a higher proportion of emissions reductions, while practices that pursue ecosystem restoration will produce a higher proportion of removals. Incorporation of equations to differentiate Removals vs Reduced Emissions, coupled with the VCM's current preference for Removals, has the potential to devalue Reduced Emissions. This will lead to less efficient mitigation overall, and actually has the	Verra appreciates the information shared in the linked paper and is taking note of the technical discussion related to mitigation potential of different NCS. As mentioned above the purpose of the labels is to enable transparency and voluntary differentiation for market participants that value this. Mitigation outcome type labels are not mandatory. Verra generally agrees with the observations made in your comment. The Verified Carbon Standard's objective is to promote all types of voluntary climate action, including the development of both reduction credits generated by ecosystem protection activities and removal credits generated by restoration activities.

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		potential to decrease overall mitigation, as project developers chase the production of more valuable, but harder to produce Removals. To further clarify this point: the prevailing science supports the conclusion that neither Removals nor Reduced Emissions have a "greater" or "better" impact on mitigating climate change. However, the evidence does indicate that Reduced Emissions are more cost-effective way, especially in the near-term, to produce large volume of GHG mitigation.	
7	The Nature Conservancy	The way Verra is proceeding to incorporate labeling of Reduced Emissions vs Removals in VM0045 seems rushed, and would benefit from further investigation of the underlying scientific principles involved. The fact is, there is currently no scientific consensus on whether it is advisable to differentiate these types of actions, let alone methods of differentiation. As such, TNC prefers an approach that is conservative and cautious in applying new ideas that could have broad implications for the VCM. In multiple working meetings to develop a revision to VM0045, Verra, AFF, and TNC could not come to consensus regarding best of 3 approaches discussed for VM0045. That group reviewed 1) a stocks-based approach that focuses on net stock change as the determinant of Removals vs Reduced Emissions, 2) a flux-based approach, that attributes individual units of increased/decreased C stocks to either Removals or Reduced Emissions, and 3) the method previously instituted by the American Carbon Registry. Rather than assuming these 3 approaches cover the breadth of potential thought on how to label credits Removals vs Reduced Emissions, TNC finds it more likely that there are other potential approaches that were not considered during these discussions. As a result, we would	Verra thanks you for your comment and your support in the assessment of the best approach to quantify removals and reductions. As mentioned above, labeling of reductions and removals is optional in the VCS program, and the separation of removals and reductions for VM0045 follows the procedures and requirements in the *Methodology Requirements v4.4*. Verra is aware that there are other potential quantification approaches for carbon dioxide removals. The proposed quantification approach reflects the VCS Program rules and requirements and is consistent with other VCS methodologies. Verra is always open to continuing to improve on the definitions and approach in the VCS as scientific knowledge and consensus emerges, but we feel it is worthwhile to use the best available approaches now to increase transparency and meet market needs.

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		prefer a process that spends slightly more time investigating the underlying issues, rather than to risk moving perhaps too quickly to action.	
8	The Nature Conservancy	In the course of developing carbon standards, methodologies, and projects, our field continually relies on bedrock principles, like that of conservatism. The principle of conservatism is often fairly easily interpreted, e.g. 'to yield fewer credits is more conservative than to yield more credits'. However, there is no obvious conclusion or broad scientific consensus on how we should apply the principle of conservatism to differentiation between Removals and Reduced Emissions. As stated, the standard application of conservatism is to assume fewer credits = conservative. However, in this context we are determining how to split an established whole into proportions that sum to 1. It is quite possible that this will require a new approach/interpretation of conservatism. One logical way to approach this issue is to create a system of equations which generates a "conservative" amount of most valuable element, i.e. Removals in this situation. So, if we develop 2 methods for differentiation, which repectively yield an 80-20 and 60-40 split of Removals-Reduced Emissions, the 2nd method would be considered more conservative. While this potential new interpretation of conservatism has not been peer-reviewed or widely vetted, it is intuitive and logical. If we apply this approach, using this perspective to interpret the conservatism of the labeling approaches proposed for VM0045, the revision to VM0045 is applying the least conservative approach from the 3 options considered, at least in terms of preliminary testing. That is, the stocks-based approach to differentiation that is currently incorporated in the VM0045 revision produces a higher rate of Removals than the rejected methods. It is uncertain	Verra does not apply the principle of conservatism for separating reductions and removals. As mentioned above, Verra does not see one type of credits or activities as superior and as such, both are treated equally in terms of climate change mitigation impact. The principle is to provide as accurate of a breakdown as reasonably possibly within the total emission reductions and removals quantified for a project. For example, project and leakage emissions related only to reductions are included in the reduction calculation, and the same approach applies for removals. Project and leakage emissions related to both reductions and removals are allocated proportionally to the amount of reductions and removals, without applying a "conservativeness" adjustment such as allocating them fully to reductions.

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		whether that pattern would repeat in the numerous other scenarios to which VM0045 could be applied, which indicates to TNC that more research and evaluation is necessary. Finally, to be perfectly clear: we do not interpret that choosing a less conservative approach to differentiation (according to a hypothetical new interpretation of the principle of conservatism) indicates that Verra has relaxed its commitment to integrity. We simply think that more testing and evaluation is warranted in this situation.	
9	The Nature Conservancy	In the near-term, direct your staff to take a small step back from the process of revising VM0045 (and perhaps from IFM methodologies as a whole) in the name of a more comprehensive assessment of dis/advantages of the various options for labeling Reduced Emissions and Removals. Extending that process by at least three months would help ensure that we are using the most robust method we can expediently design, and would go a long way towards building consensus among the various parties involved with the development and revision of VM0045. Longer term, we would invite a deeper collaboration with Verra regarding the science of labeling VCUs. TNC and our partners are still actively assessing the various potential impacts that could result from the basic decision to label VCUs, and we would welcome Verra's input and perspective to that process. Deeper and more deliberate consideration of these issues may help us identify more efficient and effective approaches to this problem, e.g. the potential benefits of designing an approach that is applicable across IFM methodologies, rather than only within an individual methodology. We feel strongly that even the questions are poorly defined in this space. As carbon standards and development firms race to implement what the VCM has	Thanks for your comment. Verra appreciates your recommendations and collaboration on this update. Please consider that the definitions for reductions and removals, and the rules and requirements for separation and labelling were included in the last program update after a public consultation. Further, stakeholders are encouraged to submit proposals for methodology revisions or program updates to continually improve the program at any time. This minor revision does not impact the quantification of total VCUs by VM0045. Rather it offers project developers the opportunity to separate and label the VCUs as reductions and removals based on the current program rules.

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		demanded, we risk leaving behind the realization that our current understanding of this topic is poorly informed. We should carefully identify what research is needed to answer the most important outstanding questions in this space.	

Section 9 – Monitoring

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10	Anonymous	could add briefly if there are any conditions/limits to apply remote sensing (page 32)	Please refer to the At parameter table, page 29. Project area at time t may be monitored using remote sensing: *"Delineation of the project area may use a combination of GIS coverages, ground survey data, remote imagery (satellite or aerial photographs), or other appropriate data. Any imagery or GIS datasets used must be geo-registered referencing corner points, clear landmarks, or other intersection points."* Regarding live aboveground biomass, remote sensing is currently not allowed. Please refer to LAG parameter table, page 36. *"Live aboveground biomass will be measured via plot-based sampling. Acknowledging the wide range of valid approaches"*