



**Reply to comments to the public
consultation on Indicator Species
Biodiversity Methodology for
conservation of intact regional
biodiversity using indicator species**

Version
1.1-C



No.	Comment	Reply
1	I would like to understand how the project will operate, what evaluation metrics will be used, and our project is located in a tropical peatland area in Brazil.	Unrelated. This seems like a general question about how the Cercarbono biodiversity program will operate, and/or an application for a program to enter. No response.
2	We are working with large land trusts that have had success targeting indicator species. This is because donations to non-profits for iconic and known species seem more appealing.	Unrelated. We are writing a commodities methodology, not a charitable donation methodology.
3	However, indicator species changes did not improve broad biodiversity and in some cases the overcrowding of one species degraded the ecosystem.	Our methodology does not advocate for one species, and in fact requires demonstration of multiple indicator species. This methodology is for conservation alone, and we will not evaluate restoration activities. Furthermore there is plenty of science demonstrating that in conservation, indicator species function as their name suggests, as an indicator of broader ecosystem biodiversity.
4	A methodology needs to be more than a strategy similar to \"adopt a sea turtle with 10 dollars per day\" otherwise we are blurring the lines between credits for biodiversity and donations for helping a species. I hope we can make this distinction clear."	The methodology is very clear, that we are using indicator species as a proxy metric for an ecosystem. There is no claim or transaction at a species level.
5	This document presents credible arguments for linking carbon credits to local lead species. Obviously the long term goal of all carbon credits must be to secure habitat space of earth's inhabitants other than the human race. Assigning biodiversity credits on hand of cited large animals is a sound and practical way to document ecosystem integrity.	Thank you but no relation to carbon credits, in fact biodiversity credits must be separate activities under the biodiversity methodology, and biodiversity program.
6	From 24-31 January the South Good Soil Health Summit of sustainabilitypakistan.com is convening That conference would be an excellent space to talk about your need for public comments, why isn't Drea speaking there?	Unrelated. I am not going to a soil health conference in Pakistan.
7	It is not clear how to calculate potential credits for a project; could you include a practical exercise?	The Calculations section outlines the logical basis for calculations. We have added a YouTube video for clarity, but we highly recommend using the open-source computer code as overlapping observations become overly complex to calculate by hand. And only very uncomplicated calculations should be attempted manually which will likely result in lower crediting.
8	Biodiversity, unlike carbon credits, requires time to ensure regeneration and biodiversity gains. It is unclear how (based on the credit measurement unit) project financing can be guaranteed for 30 years. Clarify the release and commercialization scheme for the project credits.	We make no attempt to claim 30-year conservation timespans. While carbon credits have a scientific need to show permanency, we strongly disagree that species permanency CAN be assumed or claimed by long-term conservation contracts, in contrast poaching data from African parks belies this assumption. Furthermore We have been clear throughout the methodology that this is not a projection/counterfactual methodology, instead it is an outcomes methodology. There is abundant evidence of REDD+ failures in the face of long-term conservation contracts. Such that



No.	Comment	Reply
		<p>there is no justification for the claim that a long-term commodities credit contract will ensure long-term outcomes. Instead we require the evidence of conservation outcomes over a 1-year period, which in most projects will be result of many years of conservation activity prior. Or as in the above case of African parks will rely on real-time anti-poaching activity rather than simply conservation commitments. Furthermore, Indigenous leaders have been robustly clear that long-term contracts are not of interest to their communities, especially in emerging markets where science is standardizing. The market model here is that of a ride-share. We do not buy the "taxi", we buy a "ride" in the "taxi", and the local landowners maintain the "taxi" because it brings them recurring revenue.</p>
9	<p>Why not include the size of the metapopulation? The motivation for not incorporating an analysis of biodiversity gains is not clear, especially considering it is one of the pillars of biodiversity credits.</p>	<p>We do not know the size of the metapopulation in the areas we work in, which although they contain jaguar, harpy eagle, bush dog, and endangered bears are not properly quantified. Furthermore proper quantification is prohibitively expensive, and labor intensive in an large area which is under immediate threat (16% deforestation rate). We do not seek to prove biodiversity gains, we seek to estimate biodiversity intactness through the continued presence of the rare, endangered, and trafficked animals listed above. Biodiversity credits can be for many reasons, and will likely include hundreds of methodologies for different purposes. We expect to be merely one of many methodologies and perhaps one which brings a lower price due to data limitations, but serves a very specific use case which is IPLC inclusion in remote, yet biodiverse zones without other forms of conservation funding.</p>
10	<p>How do you project the effectiveness of a project based on the presence of bioindicator species? It is a risk to assume the integrity of a territory just based on presence records, distribution ranges can be broad and deviate from expectations for human and climatic factors (presence does not equate to health). Typically, bioindicators minimize this risk by analyzing group composition and structure (e.g., BMWP for macroinvertebrates). Additionally, not considering the species biology for understanding integrity can be an oversimplified approach; reproductive capacity may lead to recording the same individual over time. Neglecting both abundance and trophic role might mask the ecosystem's resilience, disconnecting the concept of ecological integrity.</p>	<p>Establishing this projection is the purpose of the ~50 page methodology. Multiple scientific letters of support acknowledge the limitations of this approach, which is a well-recognized scientific method, and market pricing is assumed to adjust accordingly. Group composition and structure research is a prohibitive level of scientific pre-requisites in the regions we seek to conserve (species richness 1,660 to 2,612 ~400k²) which although biodiverse, are very poorly characterized. As stated in the methodology, "you do not have to quantify to conserve" indicator species are a proxy metric for more elaborate ecosystem methods and we hope all the regions we work in will be conserved long enough to gain further scientific study and more robust methods of conservation. Furthermore the methodology conservatively assumes all observations are of the same individual</p>



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		(additional credits are not issued for multiple sightings in the same time period). may lead to recording the same individual over time. Neglecting both abundance and trophic role might mask the ecosystem's resilience, disconnecting the concept of ecological integrity.
11	How do you conclude the two months, we understand this supports the finance of the project, but it may affect the ecosystem integrity.	This is very clearly explained in Time section of the methodology calculations. The scientific validity of any given indicator species observation is limited by 30 days prior, and 30 days post the date it was taken. This choice was made based on one years observation of Indienous jaguar trackers monitoring activities during 20 year unpaid regional activism. More frequent monitoring is difficult as animals roam, and weather patterns and technology costs prohibit real-time monitoring. Less frequent monitoring could allow for crediting after an animal has been killed.
12	This document reads more like a political treatise than a methodology. It's hard to know where to start and what one would do to create a project. While well meaning, the language should be focused on definitions and instructions rather than political viewpoints.	We understand that the methodology as written more colorful than the typical methodology or scientific writing. This is intentional, we seek to incentivise IPLC projects and typical scientific writing is not always engaging enough for this audience, nor does it clearly establish motivations and intent. So we included multimedia and wrote more colloquially than we would typically do for a scientific audience.
13	Additionally, the various required sections of the PDD are not described or required in sufficient detail. The descriptions of the needed information is a set of overarching principles, not the detailed prescription or implementation instructions that project developers need.	Cercarbono has a clear PMP protocol, and program documents for project developers to follow, and we will be releasing sample documents and including them in the online version of the methodology for project developers. This methodology describes the scientific basis, sequence of scientific steps, and logic behind calculations.
14	The methodology proposes to use a minimum 30 year land tenure arrangement, but cancellable on 1 years notice. This is NOT a 30 year commitment legally, rather, it is a 1 year commitment. That is problematic for a variety of reasons—nature and people need longer term commitments. It is no good to merely have a 1 year rolling commitment—that duration essentially makes a project unappealing to philanthropists and donors and un-investable to investors. More importantly, the duration doesn't bring long term revenue to landowners, which is crucial to protection of nature as well as to competing with more destructive uses of the land.	Yes. We have been clear throughout the methodology that this is not a projection/counterfactual methodology, instead it is an outcomes methodology. There is abundant evidence of REDD+ failures in the face of long-term conservation contracts. Such that there is no justification for the claim that a long-term contract will ensure long-term outcomes. Instead we require the evidence of conservation outcomes over a 1-year period, which in most projects will be result of many years of conservation activity prior. Furthermore, Indigenous leaders have been robustly clear that long-term contracts are not of interest to their communities, especially in emerging markets where science is standardizing.
15	The integrity score seems to rely on external sources to generate a -1 to +1 rating, but doesn't set the rating itself. This is another problem with	We assume you mean Indicator species integrity score. This is based on independent academic materials and as such is robust to project developers gaming. In future we anticipate that



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	<p>baselining and allowing project developers to choose their own baseline.</p>	<p>public indicator species databases like One Earth may generate a normalized number from metareviews but for now given the siloing of public data we require project developers to provide independent academic justification for their species integrity score, and the Independent Expert Panel to review these choices. We have added the academic papers used in the score to the public table found in Appendix E. This score only goes from 0-1. The Integrity score found in the unit is a -1 to +1 range but for a conservation methodology we are only attempting to demonstrate conserved biology. Some partial crediting is issued for species such as Tapir.</p>
<p>16</p>	<p>Page 35. “It should be noted that automated data such as satellite telemetry for game cameras is prohibitively expensive for most IPLC projects. Therefore, the vast majority of projects will require trusted human coders to add geocode and date-time stamp metadata to observations.” This exception essentially destroys the credibility of the data—it is too easy to game in a methodology that is already very loose in its prescriptions.</p>	<p>We have 10 letters of support from accomplished conservation biologists in many disciplines with a significant history of scientific fieldwork saying this compromise is acceptable for an IPLC project. Satellite telemetry cameras are in their infancy as a technological development, and cost \$1000/camera with a roughly 6-month lifespan. Virtually none of the areas that are highest priority for conservation would be able to operate given this restriction. Furthermore, aside from Expert Panel review, our observations have an internal data check for consistency with public researchers operating in our region through iNaturalist and the majority of them are research grade.</p>
<p>17</p>	<p>Page 37: The biocredit is based on a two month period. There is no clear reason for this offered except for a comparison to carbon prices, which is not relevant. The other reasons are garbled—the verification period should match the crediting period. Further, duration of protection is the critical issue for biodiversity protection for a variety of reasons both having to do with nature’s ability to adapt to changing circumstances, and for human investment horizons to have the confidence in the project. The crediting period should be at least a year, and the land tenure should be restricted and committed for at least 20, and preferably 30, years.</p>	<p>As above, this is very clearly explained in Time section of the methodology calculations. The scientific validity of any given indicator species observation is limited by 30 days prior, and 30 days post the date it was taken. This choice was made based on one years observation of Indienous jaguar trackers monitoring activities during 20 year unpaid regional activism. More frequent monitoring is difficult as animals roam, and weather patterns and technology costs prohibit real-time monitoring. Less frequent monitoring could allow for crediting after an animal has been killed. It should again be noted that the choice of 2-months for observation validity in the METHODOLOGY which sum annually, is very different than the choice of 2-months for the UNIT which is for market pricing and these decisions should not be conflated.</p>