



## Guidance Document for completing a Stage 1 application to support a claim for units of biodiversity gain

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### Introduction

The Wallacea Trust biodiversity methodology defined a unit of biodiversity change as a 1% uplift or avoided loss per hectare in the median value of a basket of taxa that reflect the conservation objectives for the submitted habitats. This methodology works in all 1500 ecoregions and all habitats and can be used to quantify the biodiversity benefits that are being gained from investments made by organisations to improve biodiversity at their own sites or those of their suppliers. This allows claims to be made such as: *Site A which covers 1000 hectares has achieved a 30% overall increase in biodiversity.* Being able to present results in this format allows organisations to compare the biodiversity benefits being generated from different investments and also allows ESG reporting in a standardised format. We are used to seeing climate investments reported using the accepted unit of climate change which is 1 tonne of carbon dioxide equivalent not emitted or sequestered, so why not report biodiversity investments in a similar standardised way?

The system works by identifying a series of taxa (groups of species) that together reflect what would be regarded by most biologists as an overall improvement in biodiversity for the habitats concerned. Data are collected to measure the species richness weighted by conservation value of each species and by their relative abundance at the submitted site before a conservation intervention begins. These same taxa are also measured at a reference site that has been managed using the same strategy for the same time period as the submitted site, to give an indication of the level of biodiversity uplift that can be achieved. Once the conservation intervention has begun the uplift in each of the taxa is calculated by verification events at 3 – 5 year intervals by measuring using the same sample sites, effort and survey methodologies as used for the baseline studies. Each of the metrics at these verification events will have changed by a different percentage from the baseline and the median value is then taken as the overall uplift from the baseline. The number of units of biodiversity change that can be claimed are then produced by multiplying the median uplift by the total hectares of the submitted site. Thus a conservation investment can quantify the biodiversity gain units being achieved over the lifetime of the project.

This system can also be used to quantify how well biodiversity is being protected in sites that are under serious threat which would reduce the biodiversity unless conservation measures are put in position. In these cases the taxa are measured at the site being protected and also at a paired development site which is an example of the type of landuse that the protected site will become in the absence of protection measures. The median percentage uplift from the value of the metrics in these paired development sites to reach the biodiversity levels of the protected site multiplied by the area of the protected site in hectares is then the amount of biodiversity units you would achieve over the lifetime of the protection programme (e.g. 25 years). The verification events are repeated at say 3 year intervals at the protected site and if the biodiversity is as high or higher as it was at the baseline survey then 3/25ths of the units of biodiversity gain can be claimed.



Many organisations will want to just quantify the biodiversity benefits they are gaining so they can compare different investments, grants or conservation strategies. Others will want to report these gains for their ESG reporting. However, once a unit of biodiversity gain has been quantified and verified it can also be traded as a biodiversity credit.

Project developers can utilise the open source Wallacea Trust methodology and collect the data themselves or via consultants or volunteer naturalist surveyors, using remote sensing techniques (camera traps, audio moths, eDNA) and field based surveys. Once these data are collected the project developers or their consultants can calculate the numbers of units of biodiversity gain that have been achieved for their projects. However, for the market (i.e. those reading ESG reports or those buying credits) to have confidence that these claims are underpinned by solid science, independent academic peer review is needed. The Biodiversity Futures Initiative which is a non-profit network of leading international academic specialists in different taxa, ecoregions and habitats has been established to verify claims of biodiversity gain.

The verification is a two stage process. Stage 1 is designed to provide independent academic validation of the proposed baskets of metrics that are being used to quantify the biodiversity and the sampling strategy designed to measure the changes in these metrics. The idea is for this peer review to happen before any surveys are commissioned, to provide independent advice on the most cost effective approach to use.

The review output from this stage 1 study will be a short report with comments on the following:

- Choice of reference or paired development site
- Has permanence been demonstrated in the design of the project
- Has quantification of leakage been demonstrated in the design of the project
- Does the metric selection reflect the conservation objectives for the submitted sites
- Appropriateness of the methods to quantify each taxa
- Any issues likely to be encountered with auditing the data
- Appropriateness of the sampling strategy for each taxa

If significant problems are identified in the review then a recommendation is made to the applicant that the application is reworked and resubmitted. If there no significant problems then the recommendation is that the applicant proceeds with commissioning the surveys and quantifying the biodiversity change.

Applicants can complete as much of the form using the guidance notes as possible and then submit the form for a pre-application screening review. This screening review costs £500 and provides feedback and assistance in identifying appropriate baskets of metrics and on other aspects of the application. With this advice, the proponent can then complete the form in detail and submit it for a full review. A stage 1 review will cost £2000 and should be completed within a 3 week period.

A stage 2 application which is a much more extensive review would then audit the data sets provided, using academic peer review. The output from this stage 2 review will be a short document explaining how the data and claims were audited and one of two conclusions:

1. The data provided support a claim of an x% increase in biodiversity across y hectares.



2. The data provided do not support a claim of an x% increase in biodiversity across y hectares and in the reviewers' opinion a claim for z% increase is more justifiable.

## Definition of terms used

**Biodiversity** is defined as the species richness of the Kingdoms of plants, animals and fungi and their populations found within the application site

**Biodiversity units of gain** are defined as a 1% improvement or avoided loss per hectare as measured by the median percentage change in a basket of a minimum of 5 biodiversity metrics that together reflect the conservation objectives for the ecoregion and habitats included in the application.

**Biodiversity metrics** are the measurements of different aspects of the plant, animal or fungi communities which have been selected so that changes in the overall biodiversity over time reflect agreed conservation objectives for that ecoregion or habitat.

**Median percentage change** is defined if there are odd numbers of metrics as the middle value of each of the metrics when listed in ascending value. If there are even numbers of metrics then the median value is midway between the two middle values when each metric is listed in ascending order.

**Improvements in biodiversity** need to be defined in each of the applications. For example, an increase in species richness of a particular group, or an increase in abundance of threatened species or a decline in abundance of invasive species are all possible definitions of improvement.

**Ecoregions** refers to the list of terrestrial, freshwater and marine ecosystems as defined by the World Wildlife Fund.

**Habitat** is a place where organisms live. There are multiple different classification systems that can be used for habitat and which classification system is being used needs to be defined within each application.

**Submitted site** is an area greater than 50 hectares which is described in the application for the proposed issue of biodiversity improvement or avoided loss units of gain.

**Reference site** is a site within the same geographical area and of similar size to the submitted site where the same management approach has been used over a known time period, as proposed for the submitted site, and is therefore a likely predictor of the improvements in each of the metrics selected at the submitted site over that same time period.

**Paired development site** is a site within the same geographical area and of similar size to the submitted site and which has been subjected to the same development activity as proposed for the submitted site and is therefore a likely predictor of the loss of biodiversity if the proposed development at the submitted site proceeds.

**Naturally occurring species** are those defined by governments or wildlife NGO's as being native to the area or introduced a sufficiently long time ago that they are now regarded as naturalised.



## Section 1: Applicant and beneficiary organisation

*Questions 1 – 5:* This section is to identify the organisation that is submitting the application and also which organisation will be claiming the units of biodiversity gain if the application process is successful.

*Question 6:* The type of organisation that can implement these projects is not important although evidence that the organisation has worked at grass roots level on related types of projects and is well connected with the stakeholders for the proposed project would be an advantage.

## Section 2: Project description, additionality, permanence and leakage

This section concentrates on understanding the location and habitat structure of the submitted site and how it fits into the wider landscape. The management of the site over the last 5 years is important to understand, and in particular to confirm that no actions have been taken over the last 5 years, that are deliberately aimed at lowering the biodiversity value of the site (beyond routine operations needed for the previous management regime).

*Question 7:* The area required is the total area in hectares of the site excluding the reference or paired development site.

*Question 8:* Ensure that a .kmz shape file with the boundaries of the submitted site is attached to the application and the total area of the submitted site identified.

*Question 9:* Ensure that a .kmz map file is attached to the application with the habitats within the submitted site identified. There are multiple habitat classification systems in use (eg EUNIS, UKHab, Phase 1 classification, IUCN Red List habitat classification scheme etc.). On the application form please identify which system is being followed for classification of the habitats for the submitted site.

*Question 9:* The map showing how the submitted site fits into the surrounding landscape and any wildlife conservation areas adjacent to the site, is designed so that the connectivity of the submitted site to wider areas of wildlife value can be identified. For example, a submitted site that connects with wider wildlife areas either side of the site is going to have a quicker increase in biodiversity and overall value in the region than a site which is effectively an island in a wider area of very low biodiversity value. The questionnaire should contain a discussion on how the submitted site connects to surrounding areas of wildlife value.

*Question 10:* This question is designed to understand management practices in the preceding 5-year period and how they would have impacted on the biodiversity. Intensive arable farming practices (inputs of herbicides, pesticides and fertiliser plus regular ploughing) for example would be expected to have had a significant impact on biodiversity, but these have been completed as part of normal arable management. What is being assessed here is whether any additional measures outside normal management practices have been taken to reduce the biodiversity. For example a grassland site sprayed with glyphosphate, immediately prior to an application would be considered an attempt by the applicant to artificially reduce the biodiversity value of the submitted site in order to obtain a higher uplift in biodiversity in



future years.

*Question 11:* If there are multiple owners, upload a .kmz shape file with the ownership boundaries for each person identified. If there is a single owner for the whole submitted area then the owner just needs to be identified in the description. There can be many other forms of land occupancy (e.g. tenancies, lease holders, community owned village land etc.), so please ensure any such occupancy is overlaid on the ownership map.

*Question 12:* Identify whether the application is for measured biodiversity uplift or for avoided loss.

*Question 13:* Projects should have a minimum time period of 20 years but longer periods are desirable in order to demonstrate permanence.

*Question 14:* This question should describe in as much detail as possible the proposed management programme to increase biodiversity at the site.

*Question 15:* Identify the organization responsible for delivering the management programme and their relevant experience for this role

*Question 16:* A reference site is needed in order to give an idea of the level of biodiversity uplift that will be achieved over the project period and to identify abundance levels for species after the uplift has occurred. The reference site should be as close as possible to the submitted site and most importantly have been managed in the same way as being proposed for the submitted site for a known time period. The starting point in terms for habitats, geology and soil types for the reference site needs to be the same or as close as possible to the submitted site. Where differences in reference site to the submitted site can be identified (e.g. length of time the management programme has been running, different starting habitat structure etc.) these should be described.

*Question 17:* Projects should have a minimum time period of 20 years but longer periods are desirable in order to demonstrate permanence.

*Question 18:* Each of the threats need to be identified and quantified as much as possible so that the levels of loss over the project period can be identified.

*Question 19:* Identify how each of the threats will be removed or substantially reduced by the management programme.

*Question 20:* Follows on from question 18.

*Question 21:* Describe the skills and previous experience of the organisation responsible for managing the protection programme

*Question 22:* A paired development site which is an example of what the site will become unless it is protected, is needed in order to give an idea of the level of biodiversity loss that will occur if this happens. For preference the paired development site should be immediately adjacent to the site and be an example of what will happen if the project is not implemented.



*Question 23:* This question is needed in order to address the leakage issue, where protecting one area just leads to the same threats being moved to adjacent areas. The leakage area will need to be included in the monitoring programme.

*Question 24:* In order to demonstrate permanence beyond the duration of the planned management programme, measures that make it more likely than not that the biodiversity gains will continue indefinitely need to be identified. These could include financial benefits to the local communities linked to continued protection of the biodiversity, achievement of a conservation designation, amongst other options.

*Question 25:* For all biodiversity gains (either uplift or avoided loss) the applicant needs to demonstrate clearly that without the management plans the biodiversity gains would not have been achieved. In other words each 1% biodiversity gain per hectare is above and beyond what would have been achieved without an intervention.

*Question 26:* This question only needs to be answered if the units of biodiversity gain are going to be monetized as biodiversity credits. In these cases the applicant needs to demonstrate that the budgets for the project would not work unless there was additional funding from selling biodiversity credits

### SECTION 3. Proposed biodiversity metrics, survey methods and sampling strategy

*Question 27:* A structural metric is one which affects the species richness and abundance of other taxa. These include metrics such as the DEFRA biodiversity metric 4.0 to quantify changes in habitat in the UK context, canopy cover or 3D structure for forest restoration projects, plant communities, rugosity for coral reefs.

*Question 28:* Describe the survey method by which this structural metric will be quantified and why it should be regarded as a structural metric.

*Question 29:* Measures that could be used the structural metric data at a stage 2 application should be identified.

*Questions 30 – 36:* A minimum of an additional 4 taxa will need to be selected and measured and which considered together would indicate an improvement or maintenance of biodiversity at the site. The basket of metrics selected needs to encompass the biodiversity objectives for the ecoregion, country and local area. Within a submitted site there will normally be multiple habitats and the identified metrics should reflect all these habitats and concentrate on aspects of the biodiversity that are likely to be impacted by the proposed management strategy. Note biodiversity measurements can be used to quantify other natural capital benefits at the site and these metrics can also be included. For example, monitoring lichen communities can identify changes in air quality, monitoring of aquatic macroinvertebrates can reflect changes in water quality, measurements of species richness and abundance of pollinating bee- and hoverfly species identify the contribution to pollination that the site is making, and changes in soil macroinvertebrate communities are an indication of improvements in soil health. However, if the management plan does not impact, say air quality, then there is no point in including lichen monitoring. The selected metrics therefore need to encompass **at least** the top 4 metrics that would indicate an improvement in the site in line with conservation and natural capital



objectives for that site and which should result from the proposed long-term management plan for the site.

For each taxa the species richness and relative abundance or biomass (for some groups of invertebrates) needs to be determined the methodology for collecting these data for each taxa should be identified.

During a stage 2 application, a panel of experts will be consulted to assess whether the levels of monitoring proposed are sufficient to accurately reflect the value of each of the metrics. There also needs to be the ability to audit the data sets collected so the applicant needs to demonstrate transparency with the raw data collected, and identify ways in which the metric estimates can be audited. For example, data gathered digitally (soundscape, camera trap, stereo video data, satellite imagery, ) can be audited by requesting a randomly selected sample of the data. Surveys that require sampling (flight intercept trap, surveys for some invertebrate taxa) can be audited by requesting subsamples be analysed by independent experts/labs. eDNA results can be audited by checking the quality assurance status of the lab

*Question 36:* The stratification may need to be different for each taxa. For example plant communities are largely influenced by soil types and management regime whereas breeding bird communities are mostly affected by the structural complexity of the site. The sampling effort should be structured to provide sufficient replicates to detect change with 90% confidence.

## Submission of the application

The best way to proceed with the application is to complete all sections to the best of your ability and then submit it for an initial review (cost £500). This is NOT a guarantee that the application will be approved, but an early indication of whether there are major problems. This stage can also offer advice on how to improve aspects of the application (e.g. suggested basket of metrics, sampling programme etc.). The results of a stage 1 review will be a letter to the project proponent with one of the following outcomes:

- It is worthwhile continuing with the application but identifying any serious weaknesses in the application and advising where possible on ways to improve the application.
- It is not worthwhile continuing with the application because there are answers that would indicate refusal.

Once this response has been received then the application should be completed with any weaknesses addressed and submitted for a full stage 1 review (cost £2000). The outcome of a stage 1 review will be a letter with one of the following decisions:

- Acceptance of the application with minor modifications needed. The median value of the estimated percentage addition or loss avoidance credits that will be allowed by Plan Vivo when calculating the number of biodiversity credits to be issued on completion of the Biodiversity Measurement Report should be identified in this letter together with any reasons as to why this is less than proposed in the application.
- Partial acceptance of the application but which requires the project proponent to make modifications to the application. No further application fees would be required. The application would be approved after these modifications had been made and the approval



letter would identify the median value of the estimated percentage addition or loss avoidance credits that will be allowed by Plan Vivo when calculating the number of biodiversity credits on completion of the Biodiversity Measurement Report together with any reasons as to why this is less than proposed in the application.

- Refusal of the application because so many changes would be needed in order to approve the application that it would require the application to be re-submitted with another fee paid for the resubmission.

Note after approval of stage 2 then the project proponent can complete the Biodiversity Measurement Report (BMR) and this will then result in issue of the biodiversity credits. Approval of the Biodiversity Credit Application is the most difficult stage, but once this has been achieved then the credits will be issued (assuming the project proponent has the rights to sell biodiversity credits for the submitted site on a voluntary market) if the monitoring programme is completed exactly as described in the Biodiversity Credit Application.