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PEATLAND CODE

Woodland Carbon CO_2de®

Biodiversity Methodology Guidance Document Draft

For the Woodland Carbon Code and Peatland Code

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Introduction

In December 2023, the Woodland Carbon Code (WCC) and Peatland Code (PC) began work on a parallel set of methodologies to allow projects to either quantify the biodiversity benefit of their project or potentially to produce both voluntary carbon and biodiversity credits. The voluntary biodiversity market is still young, meaning there is a high risk of getting it wrong and the WCC and PC both need to protect their reputations as high integrity standards. However, the new biodiversity quantification methodologies can be a powerful tool to unlock additional private finance for nature restoration, whilst reducing the risk to both codes.

The proposed framework for biodiversity quantification was presented to the WCC and PC Executive Boards at the end of February 2025. Although the Executive Boards were still in support of developing biodiversity crediting within the standards, the decision was to pursue further funding to continue the research and development of this programme, instead of launching a biodiversity crediting framework in 2025. This project serves as the initial foray into this type of work and provides the foundation for further research – please see the “Future developments” section.

The guidance document

The Biodiversity Methodology Guidance Document provides guidance on how woodland, and peatland projects could adopt a more explicit approach to biodiversity measurement and reporting. This guidance document includes explanations of approaches, rationales, and direction on the validation and verification process, as well as creating robust environmental datasets in the form of project biodiversity baselining.

The biodiversity crediting market

The carbon market is much more mature than the biodiversity market. As such, there are many integrity and transparency mechanisms that can be translated into the nascent biodiversity market. However, because biodiversity as a concept is more complex to quantify and standardise than carbon, these tools need further development in the biodiversity market.

As it currently stands, there are no international standards bodies that regulate the biodiversity market or define what is considered “high integrity”, like ICVCM or ICROA within the carbon market. However, there are some organisations that have been attempting to fill the role.

Supported by the UN, the Biodiversity Credit Alliance is actively working on defining standards within the biodiversity credits market. However, they are best known for their issue paper defining a biodiversity credit. The WCC/PC biodiversity methodologies align with this guidance, which sets baseline standards for additionality, permanence, and data integrity. Additionally, the International Advisory Panel on Biodiversity Credits (IAPB) was established by the French and UK Governments to further international policy and integrity within the global biodiversity crediting market. In October 2024, the IAPB released the “Framework on High-Integrity Biodiversity Crediting Markets”. Where feasible the PC/WCC Biodiversity Crediting Methodology aligns with this guidance. The PC/WCC are in continued conversations with the UK Land Carbon Registry to ensure that the data transparency components of the IAPB guidance are in alignment with how the registry structures any future biodiversity credits or measured biodiversity uplift.

Finally, the British Standards Institute BSI Flex 702, which will complete its period of public consultation in January 2025, will provide specific requirements for markets related to nature outcomes. The PC/WCC aim to build in feedback from the BSI Flex 702 consultation, to ensure alignment with UK policy and market integrity principles.

Biodiversity credits and the WCC/PC

Types of credits

As the biodiversity crediting market evolves, the topic of stacking and bundling is frequently discussed. This refers to different approaches of how a single restoration project can produce multiple types of credits, or units of habitat or ecosystem service uplift. For example, the same restoration project could increase biodiversity, reduce flood risk, sequester carbon or improve water quality. As multiple types of natural capital or ecosystem services become converted into sellable credits, it becomes increasingly challenging to address issues of additionality, buyer claims, and integrity within a project.

After a period of market research and working with academic teams from SRUC, the WCC/PC determined that there may be lower reputational risk to project developers, potential buyers, and the standards themselves to focus at this stage on a bundled approach. Upon investigating the state of current bundled credits (sometimes referred to as “linked” credits), there is currently no market consensus on what is considered a robust way to provide a multi-credit bundle. In this context, a site is producing two types of credits, one of which is a predicted volume (carbon emission reductions), and one where credit volume is based on measured results (biodiversity). There is no consensus on how these credits would be combined in a high-integrity manner. One major challenge is to determine if it is a set ratio of bundled biodiversity credits to carbon, i.e., is it a 1:1 combination until one credit type is sold out or is it per vintage or per hectare. Additionally, markets become higher risk when fractional credits are issued, which is almost inevitable in a multi-credit bundle.

To allow WCC/PC projects to engage in the nascent biodiversity market without reputational risk, the WCC/PC are proposing the following approach:

For peatland restoration projects that are **ineligible** for carbon credits under the Peatland Code only (i.e., areas of shallow peat), the proposed methodology would allow these sites to generate standalone biodiversity credits. These projects will have similar requirements of a standalone carbon credit in terms of documentation, additionality requirements, registration with the registry, and independent validation and verification. These are what are known as an **“implicit bundle**”: the biodiversity is a quantified unit, and there is an assumption of other benefits (such as carbon benefits). Currently, WCC/PC carbon credits are considered an implicit bundle, because they have their carbon units quantified, but there are the implied additional benefits to nature. A credit represents a 1% uplift in the biodiversity metric per hectare.

For Woodland Carbon Code and Peatland Code projects that would like to include both biodiversity and carbon, a Carbon+ credit may be possible. This is what is known as an “**explicit bundle**” where the additional benefits beyond carbon are quantified and independently verified. With these projects, project developers would follow both the carbon and biodiversity methodology requirements. At verification, each vintage of carbon credits would have an associated percentage of biodiversity uplift. This percentage uplift would be calculated using the same biodiversity monitoring and uplift methodology as the standalone biodiversity credits. These Carbon+ credits would have an independently verified biodiversity uplift associated with the carbon credit, allowing buyers to better quantify their nature-positive impact.

In the context of the explicit bundle, the rates of carbon and biodiversity may develop at different rates. That is why the biodiversity uplift will be displayed as a percent biodiversity improvement associated with each carbon credit per vintage. Different vintages of carbon credits may have different rates of biodiversity uplift, but the mechanism of an explicit bundle can address that. External market structures will guide how value is assigned based on different percentages in each vintage.

Parallel standards

The original objective of the WCC/PC biodiversity crediting project was to consider whether an integrated set of standards could be developed, whereby a single standard could be used for both carbon and biodiversity calculations and credit issuance. However, integrity setters for the carbon market, such as ICROA and ICVCM do not have explicit guidelines for biodiversity markets. As such, inclusion of the biodiversity methodology

within the carbon standards creates the potential risk of ineligibility within these integrity frameworks. To address this, the biodiversity methodologies are currently written as a set of parallel standards to the WCC and PC.

Project developers who are familiar with the WCC/PC documentation will notice that the structure of the Biodiversity Crediting Methodology follows the same format but is designed to quantify biodiversity uplift instead of carbon sequestration/greenhouse gases emission reduction. The aim is to create something that is easily accessible to experienced project developers but still protects the integrity of the WCC/PC's role in the carbon market. Regarding the project design documents for biodiversity, although there are two separate documents for the carbon and biodiversity side, a Carbon+ project should be able to input identical information for many of the questions.

The Operation Wallacea Methodology

To define an explicit unit of biodiversity, existing methodologies of biodiversity crediting were reviewed. To date, there are over one hundred distinct methodologies for calculating a biodiversity credit. Methodologies were analysed based on their compatibility with the WCC/PC, their robustness within the biodiversity market, and the adoption of the method in the UK and global contexts. From this review, the Operation Wallacea Methodology was selected as the underlying framework for biodiversity uplift quantification. This method has been used domestically and internationally, and other market leaders in carbon and biodiversity have based their standard on the same methodology. The methodology is open source and is based on an idea like the Consumer Price Index; As biodiversity is too complex to reduce to a single metric, a biodiversity credit would be derived from a combined multi-metric, which brings together a range of biodiversity indicators to generate combined average values. A credit is defined as a 1% increase in combined values (the multi-metric) per hectare. The multi-metric requires a mix of structural (e.g., habitat condition, spatial complexity) and taxonomic (e.g., breeding birds, higher plant diversity) metrics.

The Operation Wallacea methodology provides guidance for how a project can quantify biodiversity change on a project with or without a reference site. Under the Woodland Carbon and Peatland Code biodiversity quantification guidelines, projects can use either method.

At this time, the standards are not adopting the Operation Wallacea explicit guidance on community benefits. The Woodland Carbon and Peatland Codes are exploring community engagement and benefit frameworks that are better contextualized to the UK nature restoration marketplace and landscape.

Voluntary biodiversity credits and Biodiversity Net Gain

Biodiversity Net Gain has recently been implemented in England. It is a statutory approach to make sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before the development. This is considered part of a compliance market, because developers are legally required to generate or purchase credits based on their activity. As such, the units do not pass the legal additionality tests within the WCC/PC additionality criteria.

The Biodiversity Net Gain metric can facilitate restoration within the context of English planning law, because it fits within the structure of wider policy. However, many voluntary credits standards have a much higher data threshold than what is required in calculating Biodiversity Net Gain units. As such, a voluntary biodiversity credit that only uses the Biodiversity Net Gain metric is at risk of being considered low integrity when compared to the rest of the market. Feedback from academics and project developers suggests that components of the Defra metric can be incorporated into voluntary biodiversity credits for new woodland creation.

Offsetting

The IAPB framework on high-integrity markets explicitly states that offsetting should not be part of the biodiversity crediting market, and that biodiversity uplift in one place does not replace biodiversity loss in another location. Biodiversity is geographically unique and context specific at each site. We are proposing to adopt this approach - with no “like for like” trading of biodiversity - to create a high-integrity biodiversity market which would help investors in nature positive outcomes to be able to quantify their impact and communicate it in a standardised way.

Metrics and monitoring

Monitoring biodiversity in a habitat creation or restoration project must be contextualised to the site. However, a current concern in biodiversity credits is the issue of comparability between credits. If biodiversity uplift is measured and monitored using completely different approaches between two sites (even within the same standard), there can be no “apples to apples” comparison of credits, and standardisation of the credits is lost.

A potential solution to this problem is to be explicit about what is measured on projects (e.g., higher plants, bird populations, standardised habitat condition assessments), while allowing the monitoring approaches to be contextualised to each site. That way, each biodiversity uplift unit within the standards represents the same metrics.

What makes a good metric

There are programme and project-level considerations for metric selection. When considering the suitability of metrics to include, the following methodological considerations for indicator (metric) selection were recommended, based on Czúcz et al. (2021) and David et al. (2021):

- Indicators should be applicable and assessable at the appropriate scale (both temporal and spatial).
- Indicators should be sensitive and responsive to changes in condition within woodland and/or peatlands in the UK, i.e., there should be sufficient discriminatory power to distinguish differences within and among assessment sites.
- When combined, the set of indicators should minimise redundancy – indicators should provide different information on condition than other indicators.
- Indicators should be understandable and translatable.
- Methods should be repeatable and precise, i.e., can be applied consistently across independent assessment efforts conducted by different parties.
- Indicators should be able to be calibrated to reflect subtle but important differences in condition or track changes in condition over time (e.g., there is a need to consider limitations of datasets and/or data resolution).
- Efficiency – consider cost and difficulty in data collection and analysis approach (e.g., skills and knowledge needed to collect and analyse data, cost of equipment and training).
- Data collection to inform metrics should be verifiable/auditable.

A team of ecologists at SRUC reviewed specific metrics for peatlands and woodlands. These were sent to market and academic groups for feedback and were reviewed by the biodiversity advisory groups for woodlands and peatlands. Final metrics were selected by their ability to meet the above criteria of a good metric, and their capacity to be applicable across a range of UK woodland and peatland projects. The final selected metrics are included within the methodology documents.

In the development of this standard, there were three feedback rounds that focused on both market players and ecologists with regards to metric selection. The specific metrics outlined in the two quantification methodologies were determined to be most advantageous across a variety of considerations. Metrics had to

be relevant across all UK woodland or peatlands, yet able to capture the unique nuance of each site. SRUC has developed a learning package for the Woodland Carbon and Peatland Codes to discuss the relevance of each metric, and appropriate methodologies for in-field measurement.

In this process, there were many metrics that were considered, but ultimately determined to not be a good fit for this context. The following are examples of metrics that were considered, and the justification for not including them. As best practices in nature markets and corresponding technologies develop, these metrics may be revisited.

Metrics considered but not included:

Soil eDNA – Although soil sampling is a great method for understanding a site's ecology, the technology still has many limitations. Many results are lumped into groups due to lack of resolution in the analysis, and assigning conservation values can be very challenging. Additionally, due to the hydrological function of peatland, peat has a great potential to accumulate DNA fragments from the watershed and store them for long periods of time. As a result, it is challenging to associate the eDNA results with current conditions.

Fungi – Fungi are a great indicator of the overall health of forests as the mature, particularly in temperate rainforests. However, lack of standardised sampling approaches and local expertise makes this a challenging metric to implement.

Connectivity – Habitat connectivity is a very common metric in many measurements of ecosystem integrity. However, a quantification of habitat connectivity would be almost impossible to do without explicitly quantifying land use practices outside the boundary of the project. As a result, connectivity was not considered a useful metric for the scale of UK projects.

Mammals – although mammals are often the poster child of biodiversity monitoring, they are frequently not sensitive enough of an indicator to show subtle improvements in habitat. Additionally, their relative presence across the lifespan of a project might not differ significantly. Finally, in many cases, grazing mammals are actually not an indicator of healthy ecosystems in the UK.

Deer or Grazing Pressure – Deer are well understood to be one of the biggest challenges in nature restoration in the UK. However, grazing management is a metric that is considered "activity-based", rather than outcome-based. Activity-based metrics are useful, but they are under the purview of certification programmes, such as the Forest Stewardship Council certification. For biodiversity credits, buyers are purchasing a measured improvement on a site, and as such, outcomes-based metrics are better suited.

At the end of this document, further research goals are discussed, including the role of different metrics in the future of the methodologies.

Additionally, proxies for biodiversity were investigated, such as water quality in peatlands. Following several rounds of discussions with experts, it was determined that the programme would avoid using other ecosystem services as a proxy for biodiversity. This is for two key reasons. The first is that, because nature markets are rapidly expanding, there is the potential for other ecosystem services to become part of a future bundle of credits. If this were to occur, then projects using our methodology would be ineligible as that would qualify as "double counting". Additionally, a biodiversity credit is already a simplified approximation of biodiversity on site. If we start using proxies that are progressively further away from what we are trying to quantify, we end up producing "approximations of approximations", which dilutes the meaning of the credit and can add confusion to buyers with regards to claims.

Additional guidance for monitoring strategies

A team of experts at SRUC are currently developing a learning package to work with biodiversity methodologies. The experts will review the metrics proposed in the methodology, and methods of collection that create decision-grade, independently verifiable datasets that can be used in biodiversity crediting. This is expected to be complete in February 2025 and will offer further clarity on how the metrics can be measured and monitored with sufficient scientific robustness.

Additionally, within the standards, there is the requirement that monitoring plans be independently reviewed during project registration to ensure that they are sufficiently robust and appropriate to the site's context. This includes the justification of invertebrate groups selected as part of a monitoring plan. The standards are actively developing a clear set of guidance on who can be an independent expert in the review process, their role in project design, and level of robustness required. Organisations like the Biodiversity Futures Initiative could potentially provide a route, though independent assessment will not be exclusive to that organisation.

The need for consistency is key and there should be use of a defined uniform classification system for assessment of habitat type and condition for woodlands and mosaic habitats (e.g. UK Habitat Classification). This should make use of standardised methods and record keeping templates for submission as part of validation. Evidence of surveyor competency across all metrics to a defined threshold (e.g. Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) should be included.

Providing surveyor competency is determined, arial imagery may then be used as a tool in validation to assess accuracy of habitat type and delineation between boundaries. Georeferenced photography would be required to support definition of baseline habitat type/ condition and species baselining methods and outputs (where possible). The use of georeferenced photography adds to the body of documentary evidence and enables an analysis of data that is consistent with what was seen at the time by the project developer and so limits the impact of seasonal variation in date of on-site assessment.

In support of this project, SRUC has developed a learning package for those wishing to engage in biodiversity and nature markets within the UK. Within this learning package is an assessment of appropriate methods for monitoring metrics outlined in the biodiversity quantification documents. This document should be used to better understand the range of methods that are considered high integrity for each metric, the pros and cons of each, and how to apply them to a management and monitoring plan.

Process and documentation

Baseline validation would happen in three steps. Once a project is registered, the project's biodiversity monitoring plan in the Biodiversity Project Design Document shall be approved by the validation and verification body. Then, a site will collect their baseline biodiversity data. Finally, the baseline data shall be validated through a site visit by a validation and verification body. These are the key steps to getting a project registered and baselined, which is what is required prior to restoration activities.

Registration

Projects that would like to register shall follow the requirements set out in the WCC/PC for project registration, including uploading relevant site documentation to the registry.

Biodiversity project design validation

After a project is approved on the registry, projects shall complete a Biodiversity Project Design Document which shall outline the project information, restoration/habitat creation activities and long-term monitoring activities. This Biodiversity Project Design Document shall ensure the biodiversity monitoring strategy has been independently approved by an expert for its robustness and relevance to a site's context.

The completed Biodiversity Project Design Document shall be submitted to a validation and verification body for review. Once the Biodiversity Project Design Document has been approved, a project shall begin the baseline biodiversity monitoring which shall be completed within eighteen months of Biodiversity Project Design Document approval.

Site survey and baseline validation

The same methodology outlined in the Biodiversity Project Design Document shall be used for baselining a site as well as monitoring future biodiversity uplift.

Projects shall send the baseline information to be reviewed by the validation and verification body. The validation and verification body will visit the site. Once the baseline data has been validated, it is uploaded to the UK Land Carbon Registry.

For peatland 'standalone' biodiversity projects, the start date of a project is when the validation and verification body has validated the baseline biodiversity data. For Carbon+ projects, the start date is determined through the carbon project requirements.

Note: As restoration and habitat activities can sometimes be initially disruptive to a habitat, baselining shall occur before any restoration work or woodland creation activities have begun on site.

Verification

Year 5 verification shall follow the protocol for biodiversity monitoring outlined in the key project documents at validation. Additional guidance on this step will be included in the updated version of this document.

Clarifications

The following are points within the standards where the Guidance Document was referenced for additional clarity.

Eligible activities

The eligible activities are the same as what is under the WCC/PC: new woodland creation or peatland restoration. The only difference is that for standalone peatland biodiversity credits, eligibility criteria that are explicit carbon calculations are removed. This means that provided the site meets the definitions of peatland outlined in the methodology and the activity is explicitly peatland restoration, there is no minimum peat depth for eligibility for biodiversity-only credits.

At this time, existing carbon projects that are already underway will not be able to add biodiversity crediting to their work. This is not to say that these projects are not increasing biodiversity to some extent. Rather, it is because of the issue of financial additionality. These projects have already demonstrated that existing funding through grants or the sale of carbon credits is sufficient to facilitate the restoration project. As such, sales of biodiversity credits on top of that would be considered "not financially additional". As nature markets beyond carbon continue to develop, if approaches around additionality change, we may reconsider this stance. But for the time being, only new projects that can prove financial additionality can use this framework for Carbon+ for biodiversity credits.

Buyer claims

The version of this document that is formally adopted will include final claims that buyers can use in statements of environmental impact.

Future developments

This is the first iteration of the WCC/PC biodiversity methodologies. Continuous improvement and iterative design based on user feedback and market changes are a crucial part of maintaining market integrity and scientific robustness. As with all nature-based standards, as better science becomes available, or changes in market structure occur, the codes with respond and update accordingly. Indeed, the reason for a biodiversity quantification methodology is in response to changes in the market. Valuing biodiversity is the entire reason nature markets exist. Our approach will always be based on the best available evidence, which will require iterative design of the codes. From later in 2025, we propose a wider pilot phase of measuring biodiversity baselines with a small set of interested project developers. This will help us to further test and refine the monitoring requirements, validation and verification of those requirements and the process and documentation required for either Carbon+ or standalone biodiversity projects.

There are already some key components to the biodiversity quantification approach that would benefit from further refinement. Below are some of the key priorities that would be addressed in a second phase of piloting:

Conservation Values and Community Similarity Index

Within the Operation Wallacea Methodology, “conservation values” are assigned to the results of the taxonomic monitoring. The methodology recommends using the IUCN threat levels of given species to assign these conservation values. There may be potential to establish other sources for conservation values that better reflect the context of conservation priorities in UK woodlands and peatlands. Examples include the UK Biodiversity Action Plan, RSPB resources, or the Joint Nature Conservation Committee. The aim would be a data hierarchy, where monitored species get assigned a conservation value that is most relevant to the site, and moving towards progressively broad conservation status frameworks until a conservation value can be assigned.

Additionally, a community similarity index is planned to be included as an additional structural metric in the quantification of biodiversity within this framework. However, additional data collection and aggregation is required to generate the community similarity index. Data collection using standard methods must be applied across many types of UK woodlands and peatlands, and then aggregated based on specific factors in order to allow the community similarity index to be contextualised to given projects. As an added benefit, this same level of data collection and aggregation would allow for the codes to create a library of reference sites. This would allow projects to use a contextualised “meta-reference” site, without having to pay the cost of monitoring a reference site at the beginning of the project. This allows for an increased production of credits under the Operation Wallacea methodology and offer an improved capacity to predict potential biodiversity uplift for a given site. Exploring the application of the Mean Species Abundance metric as a simplified approach to a community similarity index should also be further reviewed.

Self-assessments

Most other biodiversity frameworks require a site to perform biodiversity monitoring every five years, with independent verification each time. For Carbon+ projects, this will often happen on an “off year”, where a vintage of carbon is not being generated. Because biodiversity uplift and monitoring are less established than carbon calculations, biodiversity monitoring should still happen at least every five years, to ensure that biodiversity uplift is occurring. However, in the future we may explore the self-assessment approach for the years where carbon vintages are not being generated, to reduce the cost of long-term monitoring and verification. As increased data is available on patterns of biodiversity uplift using this method, there is also the potential for the “off year” biodiversity validations to be reconsidered or removed entirely.

Multi-credit bundles

Once the biodiversity and carbon markets mature to a point where there are established frameworks for a multi-credit bundle without reputational risk (i.e., the sale of two bundled or linked credits from the same activity), further work could explore moving from the Carbon+ explicit bundle to a multi-credit bundle, including whether retroactive conversion of explicit carbon bundles to multi-credit bundles would be feasible and meet additionality criteria.

Optional extra metric

It is understood that biodiversity credits cannot capture the complete biodiversity of a site. Rather, we selected metrics that can most efficiently and effectively tell the story of overall habitat uplift on a site. However, there are some situations where a restoration or habitat creation activity might have explicit biodiversity goals that are not part of the basket of metrics used in the standards. Therefore, we are exploring the potential for projects to add one additional metric on top of the standard five. That way, the credits would still be easily understood and compared within the standards, but speciality projects can show their unique biodiversity impacts. An example would be including mammal monitoring as a metric in projects where beaver or lynx reintroduction is the primary goal, or lichen monitoring in woodland creation that is focused on Atlantic rainforest.

Biodiversity score as a scale

Although percent uplift is common in biodiversity crediting methodologies, it is not without its problems. For example, a ten percent improvement from an extremely degraded baseline does not necessarily represent the same impact of a ten percent improvement from a site with a less degraded baseline condition. To address this, the capability of converting the results of biodiversity monitoring to a 0-100 scale is being investigated. This requires significant reference data to create this scale, but it would have many benefits to the overall process. Data between sites could be more easily compared, baselining and estimating habitat uplift would be more straightforward, and improvements in overall habitat condition would be better scaled across the life of a project. The scale would also allow us to anticipate the upper limit of potential biodiversity uplift of a site, at which point an assumed dynamic equilibrium of biodiversity would occur. It is important to understand where this limit is to know the expected lifespan of credit generation.

Uncertainty

Quantifying the degree of uncertainty in biodiversity monitoring is a challenge. When better reference libraries exist, a better understanding of uncertainty will allow for improved understanding of biodiversity buffer pools and the specific claims buyers can make.

Improved alignment between carbon and biodiversity

Although the parallel methodology approach was designed to create potential synergies in project development and registration across biodiversity and carbon, there are still aspects of overall project management that do not usefully align between the two standards. In a commitment to continuous improvement, the methodologies will be investigated repeatedly to ensure that any possible synergies between the two processes are explored, to reduce cost and time for project developers.

Matching market mechanisms to desired outcomes

There are two key outcomes for the development of biodiversity credits – increased funding for nature restoration, and changes in land management for improved biodiversity outcomes. It would be advantageous

to perform additional market research to better understand how to structure this market so that is achieves both of the above goals.

New metrics and continuous iteration of existing metrics

Carbon codes are continually updating their methodologies and calculations as new science and data become available. The biodiversity market should be no different. As new science becomes available, the metrics and methods should be reviewed to make sure the standards are performing their purpose with the utmost integrity. A protocol for including new types of metrics should be developed so the codes have the agility to adjust to a rapidly changing market.

For example, though the Defra BNG metric is popular, it must be reviewed to ensure its relevance to this context. The first use of this protocol should be to review the BNG metric, and identify what aspects of it (e.g. urgency and risk multipliers) are useful for a planning policy context, but don't fit within a biodiversity crediting framework. Alternatively, the same protocol could be used to compare the Woodland Condition Assessment tool to the BNG metric.

Additionally, environmental technology is a rapidly evolving field, and will continue to evolve in response to nature markets. The results will be a continued increase in new cost-effective methods to collect environmental data. A protocol for reviewing the efficacy of new technologies must be developed so that project developers can use the most cost-effective monitoring strategies, rather than being locked into a system that could be considered expensive and antiquated in the future.

Financial modelling

As acknowledged in the public consultation, there is limited data in estimating the percent biodiversity uplift a project like this could realistically produce. Although the Carbon+ model can incorporate the cost of enhanced management and monitoring into the pricing structure, this isn't the same for the standalone credits. For both systems, this data limitation creates obstacles in financial modelling. The data collection discussed above to generate a community similarity index would provide a significant amount of this data, but further analysis for a financial perspective would provide valuable tools for project developers and produce useful estimates for long-term financial forecasting. Other types of financial modelling could look at the price and costing relationship between different types of standalone or bundled credits to better understand the impact that a new market mechanism could have on existing markets. Finally, modelling to understand the risk of lower values at the very beginning of a project (due to the disruption that occurs when creating a new landscape) should be investigated.

Continuous alignment with the evolving regulatory environment of the UK

The field of nature markets is rapidly expanding beyond carbon, including biodiversity and a range of ecosystem services. As such, the UK government is also moving extremely quickly to keep up with biodiversity. Aligning with UK regulatory guidance is a priority for the UK Woodland Carbon and Peatland Codes. However, currently many of the regulations are still in development. It is critical for the success of this programme that a protocol is established to continuously align with the multiple sources of guidance that are relevant to this market. From a Scottish version of the BNG metric, to the role of the UK ETS on the WCC, and how BSI develops, there are many potential sources of regulations that need to be tracked. Continued development of this project allows for governmental organizations to learn from this project, and for their guidance to inform further iterations of the biodiversity quantification methodology.