



3. Assessment of Challenges

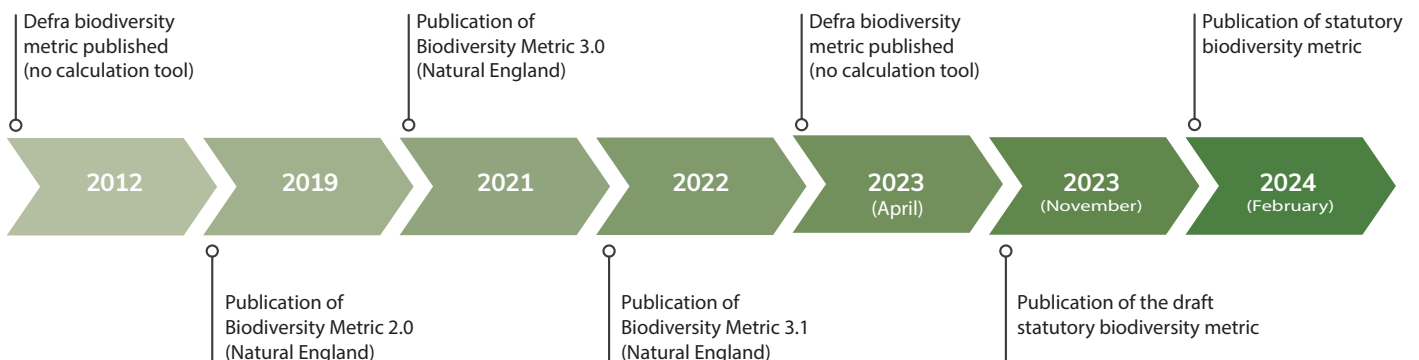
Metric

The statutory biodiversity metric⁴ ('the metric') is the central component of England's Biodiversity Net Gain policy.

It provides a consistent way of measuring both the losses and gains to biodiversity, allowing for compensatory action to be built into the decision-making process of those with influence over land use – developers on-site and land managers off-site. By providing this single measurement and quantifying the need for such compensatory action, markets and transactions can take shape to channel private finance into nature at scale.

Many consider the development of the metric to be a monumental feat. It was developed over 10 years by Natural England, with input from environmental experts, government stakeholders, data scientists, land managers and developers. The metric was trialled through five major versions, and was accompanied by several practical pilots and research programmes that collected the missing environmental and market data that was needed to make the metric functional.

Metric development timeline





What makes a good biodiversity metric?

In reviewing and testing this metric throughout this 10-year period, many market and government stakeholders – including those within this Roadmap's Working Group – have commented on the fundamental principles that make a successful biodiversity metric. These can be surmised as:

1. **Measurable** – and therefore verifiable.
2. **Useable** – by the metric's target user group.
3. **Scientifically robust** – based on relevant ecological data and research.
4. **Responsive to changes** – including those made towards future habitat predictions.
5. **Repeatable** – allowing for standardisation and scale.
6. **Consistent** – and therefore predictable for users.
7. **Combinable** – with other ecological tools, frameworks and resources.
8. **Impactful** – aligned to its overall purpose and mission.

While these principles are all important for a robust and reliable biodiversity metric, there will always be natural trade-offs between them for any metric that aims to measure overall levels of biodiversity in a given area. This is especially true for the statutory biodiversity metric, which can be used for over 116 different habitat types across England. Examples of these trade-offs include:

- Being easy to use (useability) vs capturing the complexity of different local ecologies (scientifically robust).
- Delivering robust outcomes through its own outputs (impactful) vs operating alongside other metrics, tools and local priorities (combinable).
- Incentivizing rare habitat creation (impactful) vs capturing the higher risk of establishing these over the 30-year period (scientifically robust).

Many stakeholders with ideas of how to improve the metric will often find themselves in discussions about such trade-offs. The GFI's Working Group, convened in early 2024, had such discussions around the metric, and the below recommendations to central government have been put forward while bearing these trade-offs in mind.

Requests to improve the statutory biodiversity metric

In March 2024, members of the Working Group gathered to discuss ideas for improving the metric, based on the official version launched on the 12th of February 2024. These ideas are put forward here for the benefit of Defra, which now manages the metric, and Natural England, which is conducting ongoing research and design testing for monitoring purposes and for future iterations of the metric.

It is important to note that, as the statutory biodiversity metric is underpinned by legislation, many aspects of the metric cannot be altered until BNG's statutory review, which is set to take place in the next three to five years.



Short term (1-2 years)

- Work with relevant industry to provide further guidance on:
 - Factoring impacts of anthropogenic pressure (such as neighbouring land use) into the metric.
 - The use of the strategic significance (SS) multiplier, including appropriate ecological datasets and tools for the '1.1' SS multiplier, and appropriate application of the '1.15' SS multiplier as more Local Nature Recovery Strategies (LNRSs) are published.
- Expand the list of irreplaceable habitats – in line with the public consultation to take place in the second half of 2024.
- Work with relevant industry to standardise the way habitats are baselined and surveyed in the condition assessment process.

Medium Term (3-5 years)

- As part of the statutory review of BNG:
 - Explore further measures to strength the relationship between habitat and biodiversity levels – including soil type and connectivity.
 - Review the trading rules using market data – including vulnerable habitat types, hectare requirements when 'trading up' in habitat quality.
 - Review how on-site habitats can be valued at baseline when located within LNRS boundaries, such as through connectivity measures.
- Explore the digitisation of the metric, including through an assessment of digital providers operating in the market.
- Clarify the process by which Rule #4 can be exercised through Local Planning Authorities (LPAs) and Responsible Bodies (RBs).

1. Explore how urban impact on sites can be factored into the metric on a more systemic basis

Priority: High

Summary:

Habitats that are susceptible to anthropogenic pressures are more likely to face damages and not reach their target conditions, therefore increasing the risk of non-delivery of biodiversity. Examples of such anthropogenic pressures include pedestrian footfall, use of pesticides, or even the impact of construction on adjacent habitats that are deemed 'non-impacted' in site surveying. These pressures can be more pronounced with smaller, less protected on-site habitats that are near dwellings or other population-linked developments.

This impact should be captured as part of the condition assessment, and considerations of risk and important ecological factors are reflected by the principles in the User Guide. However, such considerations may not always be factored in during the habitat planning stage and it can lead to less realistic metric calculations being proposed about the future habitat's condition.



It is worth noting that the target off-site and significant on-site habitats need to be legally secured through local land charges, including detailed information on planned enhancements and specific actions to ensure habitats meet target condition. However, in the case of habitat failure, the extent of liability and enforcement measures is not clear to all in practice (see Action #4 in Supply Side). Moreover, non-significant on-site habitats do not need to be secured through local land changes and face even weaker enforcement measures (see Action #9 in Central Governance).

Potential Solutions for Central Government:

- Provide or support the provision of more specific guidance on how to factor in expected urban impact on habitats within the BNG calculations, working with relevant industry bodies to align with existing work on this topic.
 - Building on the above, include a section within the condition assessment where the surveyor can demonstrate where this thinking has been applied, including where impacts on the wider site are expected from the construction phase.
- Expand the guidance on pesticide use in on-site habitat management.
- Review on-site risk multipliers (including the difficulty multiplier) to assess whether the risk of urban impact can be factored into the metric calculations more directly.
 - Building on the above, allow an option for fenced-off on-site habitats to face the risk multipliers of off-site habitat – incentivising on-site but protected habitat delivery.

2. Strengthen the use of habitat as proxy for delivering real biodiversity gains, using other ecological factors.

Priority: High

Summary:

The biodiversity metric uses habitat as a proxy for biodiversity – with a key assumption being if the habitat is created or enhanced then more biodiversity (e.g. species presence and abundance) will occupy that habitat. There have been some studies^{5,6} that show there is not always an uplift in biodiversity with such habitat delivery, and that there can be significant variability of biodiversity levels within habitats – including grasslands – that is not always captured through the quality-based multipliers of the metric.

A number of factors, including site age and connectivity, can strengthen the link between this proxy and the desired outcome, but are not currently factored in due to the complexity of doing so and the reduction of useability and measurability that the metric offers. For example, connectivity was factored into Version 2.0 of the metric that included GIS integration. However, this was removed due to technical challenges that caused the metric Excel to stop working for many users.



Potential Solutions for Central Government:

- Review how connectivity can be added back into the metric in a sustainable manner – for example within the condition assessment scoring sheets.
 - The contributors of this Roadmap express their support of Government’s intention to review how connectivity can be added into the metric ahead of the next consultation and legislative update (within the next three to five years), and wish to highlight the importance of this work.
 - Explore the use of current datasets, such as the Network Enhancement Zones within the Habitats Network dataset⁸, which some suggest could be factored into the ‘1.1’ strategic significance multiplier by LPAs ahead of the metric’s next update.
- Work with relevant industry to expand current research into how effective the distinctiveness and condition scoring system is as a proxy for biodiversity, and the ecological factors that strengthen the links between different habitats and biodiversity – such as site age and soil type – so that the proxy of habitat in the metric can be improved over time.

3. Evaluate the risk of overall habitat cover loss - as larger, lower-quality habitats can be traded for smaller, higher-quality habitats.

Priority: High

Summary:

To an extent, the trading rules of the metric allow for larger, lower quality (in condition and distinctiveness) habitats that are built upon to be mitigated with smaller, higher quality habitats off-site. Though this is considered by many to be ‘trading up’ in terms of value for biodiversity, some studies have shown the overall loss of greenspace could be up to 34%⁸.

There is an impact trade-off here in that the metric is designed to encourage the creation of higher-quality habitat that is better for biodiversity, and an argument that some area loss of lower-quality habitat is acceptable for this outcome. For this same reason, the trading rules do not generally allow higher quality habitats to be compensated or ‘traded down’ for larger but lower quality habitats.

When habitats are ‘traded up’, it was also noted that the effect of the ‘difficulty’ and ‘time to target condition’ multipliers can also mitigate the extent to which area cover is lost when using smaller but more complex and distinct habitats to compensate for larger and less distinct habitats.

Market stakeholders with experience in the statutory metric voiced these thoughts and flagged that the metric’s Principle #9 focuses on maintaining habitat extent and ensuring that habitat is of sufficient size for ecological function. This is reliant on best practice, resources and capacity within the assessment phase. Some have suggested that, in select cases, the metric could be tested to see which habitats may be particularly vulnerable to loss of area cover under the trading rules, and to what extent.



Potential Solutions for Central Government:

- Test how the metric supports hectare requirements of certain habitats and which are vulnerable to loss of area cover when ‘traded up’ for other habitats.
 - Building on the above, review the trading rules in such cases where important habitats may be vulnerable - for example, to what extent high distinctiveness habitats can be traded for smaller but very-high distinctiveness habitats.
- Explore the potential to add in targets of maintaining land cover of certain habitats – similar to how woodland cover targets are included in the guidance.
- Incorporate this challenge into the habitat review work being undertaken by Natural England in the near future.

4. Ensure that baseline habitats within LNRS boundaries are correctly valued, such as through the strategic significance multiplier.

Priority: High

Summary:

Local Nature Recovery Strategies (LNRSs¹⁰) are required by the Environment Act and will be delivered by 48 Responsible Authorities¹¹ across England, showing where and how nature restoration may be delivered to generate the most benefit. LNRSs are built into the metric through the strategic significance (SS) multiplier, which aims to reward BNG activity aligned with these areas through the generation of more units. LNRSs are considered an important resource by many market stakeholders, such as small site developers, who may struggle to navigate various other indicators of strategic significance to find the best areas to support nature restoration or enhancement.

For units generated from habitats located in LNRS boundaries (once in place), these will score ‘1’ under the SS multiplier in the baseline (thus having no uplift in the baseline) rather than the ‘1.15’ score it applied under Version 4.0 of the metric. As a result, the metric will now inadvertently weight the creation of new habitat over recognising existing habitat. This also means that if the pre-development value of existing on-site habitat is valued lower, the overall number of units required to meet the gain will be lower. This may inadvertently incentivise developments in LNRS areas.

A counter argument for this change is that this application of the SS multiplier would further incentivise appropriate habitat delivery in locations identified for nature recovery, where off-site creation or restoration is taking place.

This challenge is somewhat exacerbated by the fact that, as of 30 July 2024, very few LNRSs have been published, and so there is limited understanding of how the SS multiplier will deliver targeted biodiversity outcomes.



Potential Solutions for Central Government:

- Review how on-site habitats at baseline can be valued within the metric when located within LNRS areas, for example:
 - Through connectivity measures being explored by Defra.
 - By allowing a difference in how risk multipliers are applied to on-site/off-site delivery within LNRS boundaries.
- Once further LRNSs are published, provide further guidance and detailed examples in the User Guide of how the SS multiplier will be applied in practice and how this supports the targeted outcomes of the SS multiplier.
- Ensure that there are methods and measures to value on-site habitats that are accessible to small site developers.

5. Support the provision of higher distinctiveness habitats within the metric's unit generation, where the plans are ecological feasible.

Priority: Medium / High

Summary:

The difficulty multiplier within the metric ensures that proposed habitats that are more difficult to establish (as an example – lowland calcareous grassland), do not generate as many units because it is less likely that they will be delivered over the 30-year period. Market stakeholders acknowledge this as an important feature of the metric, because it results in a more robust approach to habitat delivery and disincentivises the removal of higher-distinctiveness (and often rarer) habitats.

However, users of the metric also reported on instances where higher-distinctiveness habitats were reasonably achievable in the local ecological context but not as rewarded with units in the metric calculations, compared to lower-distinctiveness and less ecologically beneficial habitats. Examples of this were given, such as the condition enhancement of existing high-distinctiveness habitats, instances where the habitat was on favourable soil type, or where the proposed habitat site was surrounded by high-distinctiveness habitats of the same type.

The metric has a rule (Rule #4) that allows the relevant LPA to approve a reduction in the time to target for a habitat in exceptional ecological circumstances. For example, where the site has optimal conditions (such as soil condition, hydrology, nutrient status) for restoration of a wildlife-rich or historic natural habitat, and where the project team has the expertise and resource to deliver the habitat with negligible risk of failure. However, as of yet there are no known examples where this Rule has been exercised, and market stakeholders suspect that the criteria for permitting the use of this rule may be overly restrictive, and specific to cases where large or landscape-scale change is taking place.



Potential Solutions for Central Government:

- Include other ecological factors in the metric – such as connectivity and soil type – to better incentivise higher-distinctiveness habitats where the local ecology means this is a lower-risk activity.
 - Those who contributed to this Roadmap are aware that the inclusion of connectivity measures is being explored by Defra as part of the three- to five-year statutory review and wish to highlight the importance of this work.
- Explore how public funding and BNG can intersect in a way that derisks challenging habitat establishment – “temporally stacking” public payments in the initial few years, followed by BNG payments from an improved baseline (see Action #8 in Supply Side for more detail).
- Review how the metric – including the ‘difficulty to establish’ multiplier – treats creation versus enhancement of existing high or very high distinctiveness habitats.
- Clarify the process by which off-site proposals for high or very high distinctiveness habitats under exceptional circumstances can be reviewed (under Rule #4) for the potential of reduced risk multipliers, providing guidance for LPAs and RBs to exercise this rule.

6. Assess the extent to which very high distinctiveness habitats may be replaced with high distinctiveness habitats.

Priority: Medium

Summary:

Current guidance states that if very high distinctiveness habitat (VHDH) is being built upon, the LPA has three options to consider:

1. priority should be given to replacing losses with units of the same habitat type
2. if this is not possible, losses should be replaced by appropriate units of the same distinctiveness
3. if this is not possible, losses should be replaced by appropriate area units of a high habitat distinctiveness

The outcome between these three options must be agreed in consultation with the LPA. Previously there was no guidance on how bespoke compensation could be reached in regards to the loss of VHDH, which led to some stakeholders feeding back that clearer guidance was needed.

However, some market stakeholders fear this now risks Option #3 being relied upon in excess and a systemic loss of very high distinctiveness habitats – rather than bespoke compensation ratios being agreed with Natural England or the LPA refusing the development.



It could be argued that the extent of the pressure on very high distinctiveness habitat from development is unknown and that pressures on these habitats may be coming from elsewhere. Market stakeholders also expect some difficulty in providing enough supply of very high distinctiveness habitats to meet the potential demand, due to the high-risk multipliers associated with very high distinctiveness habitats.

However, these stakeholders maintain that many very high distinctiveness habitats are ecologically important and should be protected from development, and not be allowed to be compensated for lower-distinctiveness habitats. The role of Irreplaceable Habitats (excluded from the metric) has been discussed as a way of giving additional protection to certain VHDHs.

Potential Solutions for Central Government:

- Review the ability for very-high distinctiveness habitat to be traded for high-distinctiveness habitat within the guidance and trading rules.
- Expand the list of Irreplaceable Habitats and ensure findings from the upcoming consultation (Autumn 2024) are built in, along with current ecological research that is creating definitions for key habitats – e.g. ancient lowland grasslands.
- Conduct a root-cause analysis of the historic destruction of very-high distinctiveness habitat, so that the extent of pressures from development can be confirmed, and if so whether the metric is the most appropriate method of protection.
- Review how the metric – including the ‘difficulty to establish’ multiplier - treats creation versus enhancement of existing high or very high distinctiveness habitats.

7. Support greater consistency in the condition assessments delivered by different ecologists and other site surveyors.

Priority: Medium

Summary:

Surveyors undertaking baseline assessments of a habitat can have different observations and enter in different calculations on the metric. Though government has competency requirements for the metric (making clear that competency is obtained through training, qualifications and experience), there is still margin for error¹² and the potential for diverging opinions, even between trained and experienced ecologists.

In particular, it was noted by some users of the metric that surveying a site at different times of year can change the perceived type, condition and distinctiveness of the habitat. Comparisons have been made on the level of standardisation and resources in surveying methods across different habitats, such as grasslands (less standardisation) and woodlands (more standardisation).



This inconsistency could mean unsuitable applications of the metric in delivering biodiversity uplift – for example by underestimating the condition of the baseline site. It can also undermine the consistency of the metric in verifying the delivery of BNG gains over the habitat's lifetime.

Potential Solutions for Central Government:

- Work with relevant industry to create standardised methods, tools, and processes for surveying different habitats (similar to the level of clarity around woodland assessment). This should also include optimal timings of year for surveyance and additional guidance where habitats are commonly misidentified, such as modified grassland versus ONG.
 - Ensure that UKHab is also included in this work as the provider of the uniform habitat classification system that the metric is based upon.
 - Ensure that there is guidance and standardised methods are accessible to small site developers.
- Set out space in the conditions assessment that makes clear where there is uncertainty from the assessor and where this could lead to inconsistent assessments further down the line.

8. Address the user experience issues within the Excel version of the metric.

Priority: Low

Summary:

Some more technical issues with the Excel version of the metric has been noted. For example, issues with including arable margins in BNG calculations when moving arable land to grassland, or submitting calculations for larger and more complex habitats. This creates a higher risk of technical error.

Potential Solutions for Central Government:

- Provide further visibility on how issues with the Excel are being taken forward.
- Provide more visibility on the plans to convert the metric from Excel to a digitised tool with improved functionality.
 - The contributors of this Roadmap are aware that Government is exploring the digitisation of the metric and wish to acknowledge the importance of these efforts. A key point was raised that replacing the Excel sheet will be highly disruptive and should only be done at the end of the three-to-five year review period, when all persistent issues have been identified.



9. Increase the market's understanding of the spatial risk multiplier – namely the number of units exchanged when selling / buying beyond LPA or NCA (National Character Area) boundaries.

Priority: Low

Summary:

There can be some confusion amongst developers and off-site providers around the implications of the spatial risk multiplier that changes the number of units that an off-site habitat offers in relation to its distance from the development in question.

This is not a challenge with the metric itself but rather a misunderstanding that can occur at the point of marketing / sale of units with off-site providers and developers beyond the respective LPA and NCA boundaries. However, this issue may be mitigated in part by clearer signalling in the metric.

Potential Solutions for Central Government:

- Include a small note on the off-site provider tab to explain the function of the spatial risk factor and to consider its implication if speaking with a developer beyond the site's LPA or NCA boundary.
- Work with relevant industry to:
 - Provide further guidance for landowners and developers on the spatial risk multiplier, as part of wider market guidance.
 - Provide guidance on basing off-site BNG unit sale agreements on hectareage (a fixed input) to prevent misunderstanding and adverse consequences of developers and off-site providers in legal agreements.