

Assessing Biodiversity Net Gain plans: a quick guide for planners and developers

Agile Initiative
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Executive Summary

Biodiversity Net Gain (BNG) is achieved when development projects leave the natural environment in a measurably better state than before. Under the Environment Act 2021, from November 2023, nearly all planning permissions granted in England, except for small sites, will have to include a Biodiversity Gain Plan that demonstrates the development achieves at least 10% Biodiversity Net Gain, as measured by the statutory Biodiversity Metric. BNG will be required for small sites from April 2024, and Nationally Significant Infrastructure Projects (NSIPs) from 2025.

This quick guide, designed for use by Local Planning Authorities (LPAs) and developers, provides an easy-to-use checklist to help understand whether submitted Biodiversity Gain Plans are correctly completed, are feasible, and take into account their local ecological and social context.

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Introduction

With mandatory BNG being rolled out in late 2023, there is a need to support Local Planning Authorities (LPAs) with guidance on evaluating the Biodiversity Gain Plans submitted with planning applications to Local Planning Authorities. There is also a need for guidance on good practice for those planning and implementing developments. Much guidance already exists¹, but this can sometimes be overwhelming, and requires time to read and operationalise the findings.

Our team of researchers² have been working over a number of years on BNG. Over the last 12-months, we have worked intensively to understand the potential outcomes of mandatory BNG implementation, with a focus on housing, funded by the UKRI Agile Initiative³. Our work included detailed ecological and social fieldwork across Oxfordshire, as well as desk reviews of the outcomes of BNG pilot schemes, and consultation with implementers (Defra, Natural England, and others). During this time, we observed numerous issues, including basic errors in metric calculations, and infeasible habitat creation proposals. Research from members of our team found that 21% of applications submitted to planning authorities across early adopter councils contained errors in their metric calculations⁴. Half of these applications containing errors had already been accepted by planning authorities. Here, we share these findings in order to support planners in reviewing planning applications with BNG calculations, and developers in making better Biodiversity Gain Plans.

Biodiversity Net Gain is achieved by following the Mitigation Hierarchy⁵, by first avoiding impacts where possible, minimising, and then compensating for them by enhancing and creating habitats. 'Biodiversity' in this case is measured via the metric to calculate the mandatory minimum of

10% BNG. Additionally, to deliver BNG in practice requires robust design and long-term management planning for habitats based on sound ecological principles. It is critical that the habitat creation and enhancement envisioned in a biodiversity metric calculation is feasible and realistic, given local site conditions and the planned management and use of the site. If it is not, there is a high chance that the measures outlined in the Biodiversity Gain Plan will not translate in reality.

Biodiversity Net Gain is implemented within a governance framework that includes a range of different elements at both local and national levels. At the local level, a key document is the Local Plan, as well as local policies on incorporating health and wellbeing into planning policy. Having a strong BNG element within the Local Plan, and the resources to implement it (e.g. local ecologists) is an important foundation for planning and executing effective BNG policy. In addition, based on our work on the social and wellbeing outcomes of BNG, we strongly urge LPAs, alongside other regulators and developers, to fully consider the social context of their Biodiversity Gain Plans and use them to promote positive social outcomes.

In this document, we focus on what to do when a Biodiversity Gain Plan is put forward for a new development. We use what we have learnt in our work to detail the most common mistakes and pitfalls in real planning applications, and how they can easily be detected. Some mistakes can be corrected readily by the developer, but as we have seen many instances of these simple errors, it is important to also bring them to the attention of planners.





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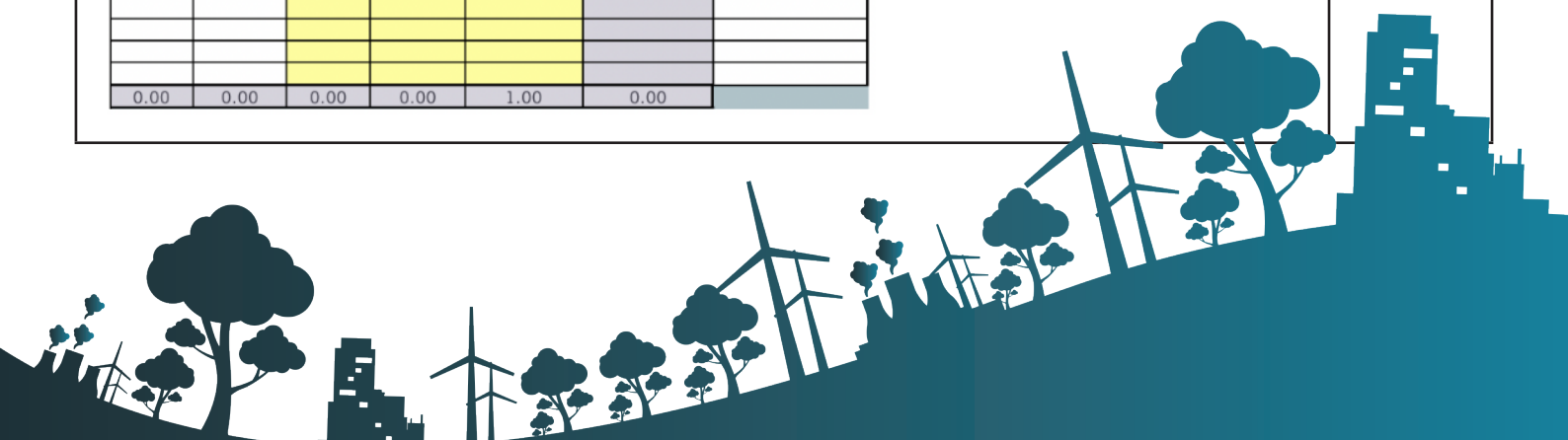
Checklist

A. Biodiversity Metric Use

These checks relate to the metric spreadsheet which accompanies the submitted plan for delivering BNG in the planning application. For full details, the Metric User Guide must be consulted.

		Check										
1. Does the spreadsheet contain automatically identified errors?		✓										
<p>Open the biodiversity metric spreadsheet and check each relevant part for red or orange boxes (Figure 1). These boxes indicate that further attention is required, or that the BNG trading rules highlighted in the Metric User Guide have not been met⁶. The Metric User Guide contains detailed information on what each error box means and what needs to be done to rectify the error.</p> <p>Note that some issues can be justified: these should be highlighted in either the Assessor Comments or in an accompanying report.</p> <p><i>Figure 1</i></p> <table border="1"> <thead> <tr> <th colspan="2">Summary</th> </tr> </thead> <tbody> <tr> <td>Total Net Unit Change</td> <td>0.00</td> </tr> <tr> <td>Total Net % Change</td> <td>0.00%</td> </tr> <tr> <td>Trading Rules Satisfied</td> <td>Yes ✓</td> </tr> <tr> <td>Area Check</td> <td>Error - Area created does not equal area lost ▲</td> </tr> </tbody> </table>		Summary		Total Net Unit Change	0.00	Total Net % Change	0.00%	Trading Rules Satisfied	Yes ✓	Area Check	Error - Area created does not equal area lost ▲	
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2. What's being done for irreplaceable habitats?																																															
<p>Where 'very high' distinctiveness or 'irreplaceable' habitats are present on site, are they being retained and enhanced? One of the aims of BNG is to protect and enhance England's habitats of highest conservation value, so ideally, these habitats should be retained and enhanced.</p> <p>Check the irreplaceable habitats tab. If irreplaceable habitats are present, these must be recorded in the irreplaceable habitats sheet within the metric spreadsheet.</p> <p>If removal is proposed, has full justification been provided? If yes, has bespoke compensation been agreed (Figure 2)?</p> <p><i>Figure 2</i></p> <table border="1"> <thead> <tr> <th colspan="6">Retention category biodiversity value</th> <th rowspan="2">Bespoke compensation agreed for unacceptable losses</th> </tr> <tr> <th>Area retained</th> <th>Area enhanced</th> <th>Baseline units retained</th> <th>Baseline units enhanced</th> <th>Area habitat lost</th> <th>Units lost</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>0.00</td> <td>0.00</td> <td>1.00</td> <td>Any Loss Unacceptable ▲</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>1.00</td> <td>0.00</td> <td></td> </tr> </tbody> </table>						Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost			0.00	0.00	1.00	Any Loss Unacceptable ▲																0.00	0.00	0.00	0.00	1.00	0.00		
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A. Biodiversity Metric Use (continued)

	Check
3. Where has the redline boundary⁷ been placed?	✓
<p>Does it appear that high or very high distinctiveness or ecologically sensitive habitats (e.g., hedgerows or watercourses) have been placed outside the red line boundary, when they will in fact be directly impacted by the development and should be part of the biodiversity metric calculation? If yes, is there a justification as to why these habitats are not within the redline boundary?</p>	
4. Do the data add up?	
<p>Do the number, type, and condition of the parcels shown on the map match those on the metric spreadsheet tabs (both pre and post development)? If not, is this because multiple habitats of the same type have been condensed into one row in the metric spreadsheet? If yes, ensure there are still separate data and justification for each parcel and evidence that each parcel has been studied and categorised individually.</p> <p>The metric spreadsheet should be accompanied by all raw data for habitat parcels which feed into the metric score. This includes UKHab and other floral survey data used to determine the habitat type, and the condition scoring sheets used to determine habitat condition.</p>	
5. Is the proposal supporting strategic priorities?	
<p>Have appropriate sources been used to determine and justify the strategic significance multiplier in the metric? <i>'Published plans, strategies or policies which are relevant to the habitat's location'</i> should be consulted (see section 5.4.4 in the metric User Guide). This will include Nature Recovery Networks (NRNs) and Local Nature Recovery Strategies (LNRS) when published. When habitats are in these plans, this could mean that the 'high' strategic significance multiplier is applied.</p> <p>Application of the medium multiplier requires professional judgement on the significance of the ecological functionality of the habitat. For example, if the habitat is adjoining the NRN or LNRS, using the medium strategic significance multiplier would recognise the ecological functionality of that habitat in buffering those recovery network habitats.</p> <p>There are other tools to aid in determining if the medium strategic significance multiplier is appropriate. We recommend checking the Metric User Guide, Natural England habitat network maps⁸, identifying Biodiversity Opportunity Areas (BOAs), using resources from Wildlife Trusts such as the BBOWT nature recovery network map⁹, or the Buglife Important Invertebrate Areas¹⁰.</p> <p>Has sufficient explanation and reference to these strategies been provided to support a 'low' or 'medium' strategic significance score?</p>	



B. Ecological Decision Making

This outlines checks related to the plans for retention, creation, and enhancement of habitats in the Biodiversity Gain Plan, and their feasibility.

	Check
<p>6. Are the proposed actions feasible?</p> <p>Has justification and evidence on the feasibility of the proposed habitat retention, creation and enhancement been provided in the post-development metric calculation?</p> <p>For example, has consideration been given to suitable soil conditions (especially critical for grassland creation and enhancement) and potential disturbance from land use within and neighbouring the site? Also, has the species type, method of establishment, immediate aftercare and long-term adaptive management been informed by evidence and good practice in the literature?</p> <p>Has sufficient justification and evidence on the proposed target habitat conditions been provided?</p> <p>Has a formal design drawing for the BNG been provided for the post-intervention habitat retention, creation and enhancement shown in the biodiversity metric, divided into respective parcels?</p> <p>The most common form of enhancement and creation is grassland¹¹, but the right conditions (e.g., soil) and management need to be in place for this to be realised. Consulting guidance from Natural England¹², The Floodplain Meadows Partnership¹³, Defra¹⁴, and eNGOs will help inform what is feasible.</p> <p>If there are uncertainties surrounding the ecological feasibility of the plan, it is worth contacting the local Wildlife Trust¹⁵ to draw on their expertise, and reading any existing Wildlife Trust response documents to the application. Local Wildlife Trusts often provide responses to planning applications, with detailed evidence to suggest whether post-intervention habitat changes are ecologically feasible.</p>	<p>✓</p>
<p>7. Is the proposal realistic?</p> <p>Be cautious, for example, where creation of medium and high distinctiveness grasslands interspersed within urban areas is proposed. Grasslands within housing developments (and other sites subject to use and disturbance) are unlikely to exceed low distinctiveness 'modified grassland' due to high levels of use and pressure.</p>	



“ We use what we have learnt in our work to detail the most common mistakes and pitfalls in real planning applications, and how they can easily be detected ”

B. Ecological Decision Making (continued)

This outlines checks related to the plans for retention, creation, and enhancement of habitats in the Biodiversity Gain Plan, and their feasibility.

	Check
8. Are there meaningful efforts to avoid impacting existing habitats?	
<p>In line with the Mitigation Hierarchy, has appropriate consideration been given to retaining existing habitats and incorporating these into the Biodiversity Gain Plan? Existing habitats already support species, so effort should be made to conserve the existing community, rather than removing it and replacing it with a new habitat. For example, if parkland is to be created after the destruction of existing grassland, the grassland instead should be retained to form the basis of the new parkland.</p> <p>Temporal continuity of wildlife communities is essential, and is a much easier way to achieve biodiverse habitats than establishment of new habitats. For example, research has demonstrated that it is very difficult to re-establish certain groups that are associated with particular habitats, such as insects¹⁶, after the fact and that it may take decades to restore typical plant communities in some grassland types¹⁷.</p>	
9. Is there an ongoing plan for management and monitoring?	
<p>Does the Biodiversity Gain Plan include a Management and Monitoring Plan covering the duration of the BNG requirement?¹⁸ Is it clear who will be responsible for managing these habitats, and if so, are those managers likely to fulfil the requirements of the plan, including for the offset areas?</p>	

C. People, wellbeing, and the local context

These checks help to identify how the Biodiversity Gain Plan has considered the views and wellbeing of local people and communities.

	Check
10. What level of consultation has been undertaken?	
<p>Has there been sufficient consultation (especially with local stakeholders) on the Biodiversity Gain Plan for the development? Is there evidence of how this has been acted upon to inform the plan?</p> <p>Evidence of Parish Council consultation and coordination with the neighbourhood plan would be one example of a sign that local views have been sought on the Biodiversity Gain Plan.</p>	✓
11. Have people's values been considered?	
<p>Has the Biodiversity Gain Plan been integrated with recommendations from any Health Impact Assessment carried out, especially to account for the existing community's relationship with the local natural environment and sensitivity to change (based on primary and secondary data)? For example, this could involve identifying the community's uses of nature, the value of ecological heritage, and mental health baselines.</p>	
12. Have the impacts of offsite delivery of BNG been considered?	
<p>The Biodiversity Gain Plan includes compensatory provision of biodiversity for losses incurred from the development (e.g., offsetting). Have the impacts of the compensatory provision on people's health and wellbeing been considered and represented?</p> <p>Has the Biodiversity Gain Plan been presented in the context of other biodiversity-related Local Plan requirements, especially to check for any conflicts? For example, if the Local Plan contains the target that people have 15-minute access to green space (both for existing residents adjacent to development and for occupiers of the new development), does the Biodiversity Gain Plan support or hinder that target?¹⁹</p>	



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D. Wider context and authority priorities

These checks relate to the wider context, and consider how the Biodiversity Gain Plan addresses the priorities of the local authority.

	Check
13. Does the Biodiversity Gain Plan meet requirements for BNG in the Local Plan?	
<p>While the mandatory BNG requirements may be satisfied, each council may have specific requirements in its Local Plan. For example, Doncaster Council requires that ecological function of habitats is maintained in trading under BNG²⁰. In South Oxfordshire, proposals to create high distinctiveness habitat are not acceptable without justification of feasibility and relevant expertise²¹. These local requirements should be met in the Biodiversity Gain Plan.</p>	✓
14. What is the timing of losses and gains?	
<p>What is the time lag between biodiversity losses and proposed future gains? If a delay is proposed, how will losses be minimised or compensated for in the interim?</p> <p>How does the timetable of biodiversity losses and gains under BNG align with other developments in the area? If all Biodiversity Gain Plans in the area result in the enhancement or creation of habitats that will take decades to achieve target condition, what effect will this have on provision of green space and nature in the interim? Considering this will help to avoid the scenario of trading too much of today's biodiversity for possible future gains.</p>	
15. Has the climate been considered?	
<p>Has sufficient evidence and detail been included on climate resilience measures²² for the Biodiversity Gain Plan? For example, climate resilience measures could include flood risk mitigation measures, electric charging points, natural cooling and shading through street trees.</p> <p>Additionally, have the proposed habitat types (and even vegetation species within those habitats) been selected to be resilient to future climate scenarios?</p>	



Footnotes

- ¹ Chartered Institute of Ecology and Environmental Management (2019) Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide. Available at: <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>
<https://knowledge.bsigroup.com/products/process-for-designing-and-implementing-biodiversity-net-gain-specification/standard>
- ² **University of Oxford:** E.J. Milner Gulland, Owen Lewis, Richard Grenyer, Joseph Bull, Sophus zu Ermgassen, Hannah Nicholas, Amber Butler, Tom Atkins, Natalie Duffus, Michael Clark, Vidya Narayanan, Joss Wright, Cecilia Larrosa. **University of Kent:** Bob Smith. **University of Southampton:** Felix Eigenbrod, Rebecca Collins. **University of Exeter:** Ben Groom, Mattia Mancini, Ian Bateman. **BBOWT:** Prue Addison. **Mott Macdonald:** Julia Baker.
- ³ The Agile Initiative (2023) The Agile Initiative. Available at: <https://www.agile-initiative.ox.ac.uk/>
- ⁴ Rampling, E., zu Ermgassen, S., Hawkins, I., & Bull, J.W. (2023) 'Improving the ecological outcomes of compensatory conservation by addressing governance gaps: a case study of Biodiversity Net Gain in England', *preprint*. doi: <https://doi.org/10.31219/osf.io/avrhf>
- ⁵ Business and Biodiversity Offsets Programme (2012) Standard on Biodiversity Offsets. Available at: <https://www.forest-trends.org/publications/standard-on-biodiversity-offsets/>
- ⁶ For example, [a recent scientific paper](#) (Rampling et al., 2023) found that the area of habitats pre- and post-development in the Metric didn't add up for one-fifth of applications - it's important to check these basic details add up.
- ⁷ Gov.uk (2021) Making an application: plans and drawings. Available at: <https://www.gov.uk/guidance/making-an-application#Plans-and-drawings>
- ⁸ Natural England (2023) Habitat Networks (Individual Habitats) (England). Available at: <https://naturalengland-defra.opendata.arcgis.com/maps/7d16507932cd436d824a1262e7c29594/about>
- ⁹ Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust (2023). Our Nature Recovery Map. Available at: <https://www.bbowl.org.uk/nature-recovery-map>
- ¹⁰ Buglife (2023) Important Invertebrate Areas. Available at: <https://www.buglife.org.uk/our-work/important-invertebrate-areas/>
- ¹¹ Rampling, E., zu Ermgassen, S., Hawkins, I., & Bull, J.W. (2023) 'Improving the ecological outcomes of compensatory conservation by addressing governance gaps: a case study of Biodiversity Net Gain in England', *preprint*. doi: <https://doi.org/10.31219/osf.io/avrhf>
- ¹² Natural England (2023) Managing, restoring and creating grassland. Available at: <https://publications.naturalengland.org.uk/category/513173>
- ¹³ Floodplain Meadows Partnership (2023) Advice. Available at: <https://floodplainmeadows.org.uk/advice>
- ¹⁴ Defra (2023) Farming: Create and restore species rich grassland. Available at: <https://defrafarming.blog.gov.uk/create-and-restore-species-rich-grassland/>
- ¹⁵ Wildlife Trusts (2023) Wildlife Trusts. Available at: <https://www.wildlifetrusts.org/wildlife-trusts>
- ¹⁶ Woodcock, B.A. & McDonald, A.W. (2010) 'What goes wrong? Why the restoration of beetle assemblages lags behind plants during the restoration of a species rich floodplain meadow', *Fritillary*, 5. 21-30. doi: <https://nora.nerc.ac.uk/id/eprint/6373/>
- ¹⁷ Ecological Community Trust (2023) Somerford Mead. Available at: <https://www.ecologicalcontinuitytrust.org/somerford>
- ¹⁸ [Academic work](#) (zu Ermgassen et al., 2021) has shown that it will be very challenging for local authorities to monitor and enforce the delivery of on-site biodiversity gains, with [approximately a quarter of all units](#) (Rampling et al., 2023) delivered by BNG coming through moderate/high condition habitats on-site promised in the future. These units are likely to not materialise in reality without a stringent, and fully implemented, Management and Monitoring Plan.
- ¹⁹ Access to green space could be evaluated using Accessible Natural Green Space Standards (ANGSt). By using the Natural England mapping work, and the neighbourhood, local, and doorstep layers, one can evaluate whether developments restrict or improve access to green space. ANGSt includes thresholds of size and distance for each layer, which can be used to evaluate proposals (see Natural England (2014) *Web Archive: Nature Nearby - Accessible Natural Greenspace Guidance (NE265)*. Available at: <https://webarchive.nationalarchives.gov.uk/ukgwa/20140605145320/http://publications.naturalengland.org.uk/publication/40004?category=47004>).
- ²⁰ City of Doncaster Council (2023) *Biodiversity Net Gain Supplementary Planning Document*. Available at: <https://www.doncaster.gov.uk/services/planning/biodiversity-net-gain-supplementary-planning-document>
- ²¹ South Oxfordshire District Council (2023) *Biodiversity Net Gain*. Available at: <https://www.southoxon.gov.uk/south-oxfordshire-district-council/planning-and-development/wildlife-trees-and-landscape/wildlife/biodiversity-and-accounting/#:~:text=Biodiversity%20net%20gain%20is%20an,applications%2C%20we%20use%20biodiversity%20metrics>
- ²² See Natural England (2020) *Climate Change Adaptation Manual*. Available at: <https://publications.naturalengland.org.uk/publication/5679197848862720> and Forestry Commission (2020) *Managing England's woodlands in a climate emergency*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872285/Climate_Change_Full_Guide.pdf

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