



Leverhulme Centre
for Nature Recovery

Consultation response: a biodiversity metric for Scotland's planning system

May 2024

From time to time the Leverhulme Centre for Nature Recovery responds to call for evidence on topics that relate to nature recovery and where its researchers can provide expert insight.

NatureScot published a [consultation on the development of a Scottish biodiversity metric](#) in April 2024.

This response was written by: [Natalie Duffus](#), [Joe Bull](#), [Richard Grenyer](#), [Owen Lewis](#), [Alison Smith](#), [Nell Miles](#), [Lila Stewart-Roberts](#), and [Thomas Atkins](#) (all University of Oxford) on behalf of the Leverhulme Centre for Nature Recovery. It was submitted on 8 May 2024.

This response has been prepared on behalf of the Leverhulme Centre for Nature Recovery (LCNR). The Centre aims to understand and support what it takes to deliver effective, inclusive, and scalable nature recovery. LCNR is located at the University of Oxford and is funded by the Leverhulme Trust. LCNR brings together experts from multiple disciplines (e.g. governance, economics, medical sciences, ecology, AI) to understand better the factors that enable or challenge nature recovery.

More information available at <https://www.naturerecovery.ox.ac.uk/>.

i. Do you agree with the issue(s) identified?

Below we outline some comments on the issues identified by NatureScot, drawing on our experience of using the Statutory Biodiversity Metric in England.

Habitat Classification System and Irreplaceable Habitats

Using a more comprehensive habitat classification system than the UK Habitat Classification System (UKHab) could be beneficial. In its current application in England, UKHab amalgamates a lot of different unique National Vegetation Classification (NVC) communities' habitats into single categories. This is particularly evident for grasslands which currently uses level 4 UKHab coding. To give an example, the level 4 UKHab definition of "Lowland Meadow" encompasses at least 6 NVC communities, each of which has its own number of distinct sub-communities. The trading rules under Biodiversity Net Gain (BNG) (e.g., like-for-like habitat trading) apply to level 4 UKHab coding and could mask the trading of one distinct lowland meadow NVC community for a different lowland meadow NVC community.

Therefore, we would consider the use of NVC or a similarly detailed habitat classification system to be an improvement. We would also recommend that for full transparency, assessors should provide their floral quadrat data to evidence the habitat identification made.

When it comes to defining irreplaceable habitats, there is currently little consideration given to ancient habitats beyond woodland in England. Consideration should be given to whether ancient habitats of other types should be considered irreplaceable. For example, floodplain meadows, the assemblages of which cannot be recreated within short timescales¹.

Reference

1. Woodcock et al. 2011. Can long-term floodplain meadow recreation replicate species composition and functional characteristics of target grasslands?
<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2011.02029.x>

Condition Assessment Methodology

If the habitat classification system is being changed then there would be a need to review whether the condition sheets need to be parsed out further by habitat type. For example, the medium/high/very high distinctiveness grassland condition sheets apply the same criteria to a vast range of different grassland types. Different grasslands require different levels of management, and the levels of acceptable bare ground/scrub varies significantly between them, and having different criteria for different habitat types would reflect this.

One consistent critique of the current metric in England is the criteria used in the condition assessment sheets and how they may penalise habitats which have high value to important aspects of biodiversity, including invertebrates or reptiles. There are several papers which explore this^{1,2,3}. Of particular attention has been the medium/high/very high distinctiveness grassland condition sheet. This includes a threshold of no more than 5% cover scattered scrub, 1-5% cover bare ground, and 5% cover of “species indicative of sub-optimal condition”. The penalties applied to these features has been called into question owing to their value on certain grassland types and to a range of species.

We feel that while the condition assessment sheets are being reviewed for use in Scotland, there is an excellent opportunity to conduct a comprehensive review of the criteria used in condition assessment methodology and align them with the habitat features which are known to be important for groups such as invertebrates. There could also be a move away from species indicative of ‘sub-optimal’ condition and toward the use of species indicative of ‘optimal’ condition which would assign higher value to habitats which have key indicator species present. Another feature currently not given much attention is habitat heterogeneity. Heterogeneous habitats and mosaics of diverse habitats can support high levels of biodiversity, so a mechanism for promoting a diversity of habitats in schemes where appropriate (rather than a single contiguous habitat type) would be of benefit.

There is also reference to species interventions being included in the metric in some capacity (artificial nest, bee bricks, invertebrate hotels etc.). This could pose difficulties in weighing a gain of an artificial habitat (e.g., bee brick) against the loss of a natural habitat (e.g., species rich grassland) to give a net outcome in the metric spreadsheet. These interventions are also easier and cheaper for developers than habitat enhancement and creation, so careful thought would need to be given on the weighting afforded to these interventions relative to habitat creation, and the number permitted per development. The inclusion of these interventions could exacerbate the current trend where BNG results in an overall reduction in green space post-development⁴. The inclusion of these measures in the metric would require careful consideration to ensure there are no unintended outcomes.

References

1. Duffus et al., 2024. Leveraging biodiversity net gain to address invertebrate declines: <https://doi.org/10.32942/X2TP5V>
2. Falk, 2021. Comments on the biodiversity metric 3.0: https://www.researchgate.net/publication/374478235_Comments_on_the_Biodiversity_Net_Gain_Metric_30
3. Wilson, 2021. Are we delivering biodiversity net gain? Do broad habitat metrics mask biodiversity net loss and can a focus on invertebrates help? In Practice Issue 113: <https://cieem.net/resource/in-practice-issue-113-30th-anniversary-edition-the-next-30-years-september-2021/>
4. zu Ermgassen et al. 2021. Exploring the ecological outcomes of mandatory biodiversity net gain using evidence from early-adopter jurisdictions in England: <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12820>

Strategic Significance

Thought should be given to how the metric applies strategic significance. In England, it currently only applies post-development to habitats which are specified as a priority for creation in the Local Nature Recovery Strategy (LNRS). This has the perverse outcome of making it easier to achieve a 10% BNG when developing infrastructure in areas which are important for local nature recovery¹. This multiplier also does not allow for habitats which are currently serving an important role for nature recovery to be afforded more units in the baseline habitat calculation, failing to recognise that connectivity can play an important role in determining the biodiversity value of existing sites. A more robust measure of connectivity should be considered for incorporation into the metric considering how important connectivity is, particularly for less mobile taxa.

As well as connectivity, guidance on minimum habitat size would also be beneficial. There are examples in England of retained or proposed habitats being very small (e.g., <0.05ha). Given that larger habitats have higher capacity to support populations, this is something that should be considered.

Reference

1. <https://www.endsreport.com/article/1859260/change-bng-metric-set-incentivise-building-areas-earmarked-nature-recovery>

Risk Multipliers

It is important to note that the risk multipliers are already quite high in England (e.g., high difficulty = 0.3), and in some cases this means that habitat transitions toward valuable habitats result in a net loss in units, causing landowners to default to the creation of more generic, less biodiverse habitat type (e.g., other neutral grassland). This needs to be kept in mind when considering increases to multipliers and where they apply.

There are also important differences affecting on-site versus off-site habitat creation to consider. On-site habitats (e.g., within a housing development) can be subject to higher levels of disturbance from footfall and other recreational pressures which may limit their ability to achieve high ecological quality. Off-site habitats (e.g., provided by habitat banks) can be placed more strategically, e.g., buffering existing Sites of Special Scientific Interest (SSSIs) and other important habitats, and therefore are subject to less of those pressures. Off-site habitat creation is also put onto the off-site register, allowing the outcomes to be more readily evaluated. The current spatial multipliers incentivise the creation of new habitats on-site, but these differences in the habitat potential between on-site and off-site should be kept in mind. Considering these challenges associated with on-site vs off-site, a precautionary approach could be taken, whereby a set proportion of the biodiversity value of the project (e.g., 25%, 50%) must be invested into habitat banking schemes, creating large, connected habitats of high ecological value.

ii. Are there any other issues relating to this aspect of England's metric that we need to consider?

Percentage Uplift

The metric is used in England with a mandatory % uplift and there are benefits and challenges associated with setting a % uplift target. If the metric is being used in Scotland to provide evidence toward National Planning Framework (NPF) 3.b¹, which relates to biodiversity being “demonstrably better” than without intervention, then it would be expected that Local Planning Authorities (LPAs) are looking for a metric spreadsheet that goes beyond No Net Loss (NNL) (e.g., positive % uplift in biodiversity units). Part of the rationale behind 10% BNG in England stems from the fact that requiring a marginal gain of 10% increases the probability of there being at a minimum a NNL due to the many uncertainties in the processes underpinning BNG². Therefore, consideration should be given toward whether the Scottish metric comes with a minimum recommended % uplift. If a metric were to be submitted with a marginal 0.5-1.0% uplift, then the likelihood of biodiversity being “demonstrably better” (or even NNL being achieved) could be called into question. Setting a recommended minimum % uplift (e.g., 5-10%) would help developers know what is required to be “demonstrably better”.

References

1. <https://www.gov.scot/publications/national-planning-framework-4/pages/3/>
2. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839610/net-gain-ia.pdf

Capacity and Upskilling

It is also worth considering some of the challenges which LPAs are facing in England. This includes metric assessments being submitted with a number of errors¹ and LPAs having limited capacity to detect and address these errors. Metric spreadsheets require a lot of scrutiny to detect less conspicuous errors or bad practice such as over-promising ecologically sensitive habitats on-site². Therefore, capacity building within LPAs and for consultants using the metric will be essential.

Thought should be given to how new habitats created under the scheme will be tracked (e.g., an offset register) so that compensatory habitat creation can be easily identified and monitored.

References

1. Rampling et al. 2023. Achieving biodiversity net gain by addressing governance gaps underpinning ecological compensation policies: <https://conbio.onlinelibrary.wiley.com/doi/10.1111/cobi.14198>
2. Duffus et al. 2023. Assessing Biodiversity Net Gain plans: a quick guide for planners and developers: <https://zenodo.org/records/8167972>