

## Biodiversity Net Gain Technical Note

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### Appendices

Appendix		Reference
A	Defra (2012) Biodiversity Metric Biodiversity Offsetting Pilots Technical Paper: the metric for the biodiversity pilot in England	CLA.D6.ISH4.BNG.AA
B	Crosher A. et al (2019). The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England	CLA.D6.ISH4.BNG.AB
C	DMRB LA 108 Biodiversity	CLA.D6.ISH4.BNG.AC

## 1. Introduction

1.1. This Technical Note on Biodiversity Net Gain has been produced to address Action Points 8, 9 and 10 of Issue Hearing 4, as follows:

Action Point		Please refer to
8	Submit DEFRA 2.0 metric technical appendix and user guide in relation to interpreting Biodiversity Net Gain (BNG).	Section 2-4
9	Provide evidence as to whether the use of the DEFRA metrics in assessing Biodiversity Net Gain (BNG) has been included in other NSIPs.	Section 5
10	Position and supporting policy basis, especially in NPS NN, regarding the need to use BNG metrics.	Section 6

## 2. Defra's Biodiversity Metrics

2.1. Defra has released three biodiversity metrics. The most recent metric supersedes the previous version(s). The three metrics are:

- [The Biodiversity Metric](#) (Biodiversity Off-setting pilot 2012) (published 2012)<sup>1</sup>
- [The Biodiversity Metric 2.0 \(JP029\)](#) (published 2019)<sup>2</sup>
- [The Biodiversity Metric 3.0 \(JP039\)](#) (published 2021)

2.2. The metric is a tool to allow biodiversity losses and gains to be measured, by using habitat features as a proxy measure for capturing the value and importance of nature. While the metric calculators have evolved over time (through an iterative process between Natural England, developers and other organisations), the underlying principles of the metrics have not changed.

2.3. The principles for the metric are set out in the accompanying technical / user guides. They include requirements to expand and restore habitats (not merely protect the extent and condition of what is there) and contribute to England's ecological network, with a focus on the restoration / creation of priority habitats and that there should be no "trading down" of habitat distinctiveness<sup>3</sup>. There is also a requirement to be transparent and giving clarity on how the metric calculations are derived (paragraph 17, Defra (2012)).

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<sup>1</sup> Defra (2012) Biodiversity Metric Biodiversity Offsetting Pilots Technical Paper: the metric for the biodiversity pilot in England. Available at:

<sup>2</sup> IAN CROSHER A, SUSANNAH GOLD B, MAX HEAVER D, MATT HEYDON A, LAUREN MOORE D, STEPHEN PANKS A, SARAH SCOTT C, DAVE STONE A & NICK WHITE A. 2019. The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England.

<sup>3</sup> See Rule 3, page 20, Crosher A. et al (2019). The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019). Natural England (Appendix B)

### 3. Trading Down of Habitat Distinctiveness

3.1. The Defra Biodiversity Metrics categories habitat into 'distinctiveness' categories based on their biodiversity value:

- Very High Distinctiveness: Priority habitats that are highly threatened, internationally scarce and require conservation action (Biodiversity Metric 2.0 / 3.0 only)
- High Distinctiveness: Priority habitats
- Medium Distinctiveness: Semi-natural habitats not classed as priority habitat
- Low Distinctiveness: Habitats of Low Biodiversity Value
- Very Low: Little or No Biodiversity value, e.g. hard standing (Biodiversity Metric 2.0 / 3.0 only).

3.2. In order for schemes to deliver biodiversity enhancements, focus should be on the restoration / creation of priority habitats (high distinctiveness) and "trading up" habitat of lower quality for nature (e.g. enhance to medium / high distinctiveness).

3.3. In order to protect the existing biodiversity value, all Defra biodiversity metrics require there to be no "trading down" of habitat distinctiveness. These requirements are set out in the following sections of the technical / user guides for biodiversity metrics:

#### Defra Biodiversity Metric 2012 (trading down)

3.4. The Technical Guide for Defra Biodiversity Metric (2012) is attached at Appendix A. Paragraph 22 clearly sets out that trading down of habitat distinctiveness should not occur:

*"22. One of the guiding principles for developing our approach to offsetting is that it should result in an improvement in the extent or condition of the ecological network. To do this the focus of habitat restoration or creation through offsetting should be on priority habitat. Where development is taking place on habitats in the low distinctiveness band, the offset actions should result in expansion or restoration of habitats in the medium or, preferably, high distinctiveness band. At no time should an offset result in "trading down", for instance in the replacement of habitat of high distinctiveness with creation or restoration of a habitat of medium distinctiveness. Habitats that are of high distinctiveness would generally be expected to be offset with "like for like" i.e. the compensation should involve the same habitat as was lost".*

#### Defra (2019) The Biodiversity Metric 2.0 (trading down and summation)

3.5. The User Guide for Biodiversity Metric 2.0 is attached at Appendix B. A list of rules that the User must abide by are set out at page 20, including:

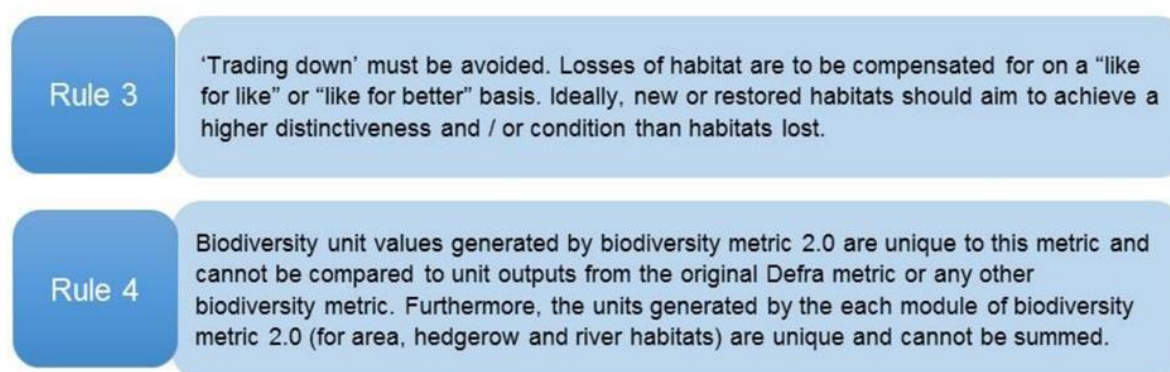


Figure 1: Excerpt from list of BNG rules (The User Guide for Biodiversity Metric 2.0)

### Rule 3 – Trading down

3.6. Rule 3 confirms that “trading down” must be avoided. Any loss of medium / high distinctiveness habitats must be compensated. One reason for the need for this rule, is that the biodiversity credits available for habitat creation is weighted against the difficulty of its creation and the time it takes to reach its target status. This means that a scheme that delivers medium / high distinctiveness habitats that are harder to create / take more time to reach target status (e.g. calcareous grassland), has the potential to provide far fewer biodiversity credits, than a landscape scheme providing lower quality habitats, which are easier to create. Rule 3 helps the assessor to identify whether the existing quality of biodiversity habitats has been protected, rather than just focussing on the percentage net gain of biodiversity (credits) alone.

3.7. The distinctiveness band of each habitat is pre-assigned in biodiversity metric 2.0, and has a ‘trading down summary’ tab that identifies if Rule 3 has been broken:

*“4.43. The trading summary tab provides details of trading between habitat types and an indication of whether the development has abided by the trading rules (See Rule 3). It is designed to set out the available data in a way that allows assessors and reviewers to determine whether or not trading principles described in rule 3 (see chapter 2) have been adhered to.”*

3.8. The calculation also identifies what type of compensation is required. High distinctiveness habitats need to be compensated on a “like for like” basis, with the same type of habitat being created. Medium distinctiveness habitats need to be compensated as “like for like/ better” on the same broad habitat (e.g. grassland, woodland and forest, cropland), such as a loss of mixed woodland can be compensated for by net gains in broad-leaved woodland of medium / high quality.

### Summing of net gain values

3.9. One of the changes implemented at Biodiversity Metric 2.0 is the separation of the net gain assessment into three distinct habitat categories – habitat (area), hedgerows (linear) and river habitats. These three categories are considered unique and in accordance with Rule 4, their biodiversity net gain value cannot be summed together. Therefore, a scheme delivering biodiversity loss in habitat area or hedgerow value cannot be off-set through biodiversity net gain in river habitats.

#### 4. A428 scheme's BNG calculations

- 4.1. DMRB LA 108 Biodiversity – revision 1 (Appendix C) sets out National Highways' specific requirements relating to the use of biodiversity metrics to support the reporting of the scale and nature of biodiversity changes. At page 5, it states that "*Biodiversity Metric 2.0 JP029... can be used to supplement the reporting of significance of environmental effects, by providing a way of calculating biodiversity gains and losses*". Therefore, the Councils suggest greater weight is given to the calculations utilising Defra Biodiversity Metric 2.0 [REP3-012] / [REP3-013]. Greater weight should be given to the output of the Defra Biodiversity Metric 2.0, given that it has become the industry standard (with the latest version Defra Biodiversity Metric 3.0).
- 4.2. Notwithstanding the above, the Councils demonstrate below how neither of the metrics submitted by National Highways follow the built in rules to avoid trading down.

#### 6.3 - Environmental Statement - Appendix 8.19 - Biodiversity Net Gain [APP-206]

- 4.3. The National Highways Biodiversity Net Gain metric used within Appendix 8.19 is based on a modified version of the Defra Biodiversity Metric 2012 (see paragraph 1.1.1 [APP-206]). However, the biodiversity net gain doesn't consider the "trading down" principle of Defra Biodiversity Metric 2012 as part of the assessment.
- 4.4. There will be net loss (shown in Table 3-1) of the following high distinctiveness habitats (identified in Table 3-2):
- A3.1 Parkland and scattered trees – Broadleaved
  - F1 Swamp (W08 Reedbeds)
  - J2.1 Boundaries - Hedges – Intact
  - J2.2 Boundaries - Hedges – Defunct
  - J2.3 Boundaries - Hedges - With trees
- 4.5. Table 3-1 and 3-2 also confirm net loss in medium distinctiveness habitats.
- 4.6. It is unclear why uncompensated losses of priority habitat (high distinctiveness) haven't been discussed and justified robustly within the biodiversity net gain assessment, particularly given this has been included as part of assessment for other NSIPs, including *TR010027 - M42 Junction 6 Development Consent Order Scheme* (discussed below).

#### 9.25 Biodiversity Net Gain: Metric 2.0 [REP3-012] & [REP3-013]

- 4.7. Defra Biodiversity Metric 2.0 is the standard metric used by Highways England/ National Highways, as set out at page 5 of DMRB LA 108 Biodiversity (March 2020).
- 4.8. National Highways submitted an updated biodiversity net gain assessment utilising the Defra Biodiversity Metric 2.0 at [REP3-012]. Table 3-10 shows:
- Area-based habitat: net gain in biodiversity value (16.48%)
  - River habitats: net gain in biodiversity value (+9.96%) river habitat
  - Hedgerow: net loss in biodiversity value (-31.66%).

*Area-based habitats: Rule 3 – no “trading down” of habitat distinctiveness*

- 4.9. In accordance with Rule 3, there should be no “trading down” of habitat distinctiveness. This rule has not been abided by for area-based habitat resulting in uncompensated losses in medium and high distinctiveness habitats, as set out below. This demonstrates that the scheme delivers the reported “net gain” by creating areas of low-quality habitat, rather than protecting and restoring habitats of higher biodiversity quality.
- 4.10. Failure to meet Rule 3 was not considered or justified within paragraph 3.6.4 of [REP3-012], where only the “net gain” figure was provided. Given this figure is based on infringements of the rules of the metric, we conclude, that the scheme cannot demonstrate no net loss / net gain in area-based habitats and results in uncompensated losses in medium and high distinctiveness habitats, as set out below:

*Area-based habitats: net losses (high & medium distinctiveness habitats)*

- 4.11. There will be significant increases in grassland (+966.58 biodiversity credits) and woodland/ forest (+130.06 biodiversity credits) habitats of medium distinctiveness. In accordance with Rule 3, these gains cannot off-set losses of habitats of higher biodiversity value (high distinctiveness) or other medium distinctiveness habitats that fall within other broad habitat types (e.g. cropland).
- 4.12. The ‘trading summary tab’ is shown on page 7 of the Applicant’s calculations [REP3-013]. Any row highlighted in red within the tables highlight habitat types that require further compensation in order to deliver the required number of units to reach no net loss, which identifies:
- 4.13. Uncompensated for losses for the following high distinctiveness habitats (priority habitats):
- *Reedbeds (-11.77 biodiversity credits)*
  - *Lowland mixed deciduous woodland (-98.77 biodiversity credits)*
  - *Wood-pasture and parkland (-98.77 biodiversity credits)*
- 4.14. Uncompensated for losses for the following medium distinctiveness habitats (broad-habitat types shown in bold):
- *Cropland: Arable field margins tussocky grassland (-54.70 biodiversity credits)*
  - *Heathland and Scrub: Mixed scrub (-28.09 biodiversity credits)*
  - *Lakes: Ditches (-03.80 credits)*
- 4.15. In light of the above, the A428 scheme current will result in loss of biodiversity value of high distinctiveness (priority habitat) and medium distinctiveness habitat, unless further compensation is provided to off-set this issue.

*Rule 4 – summation*

- 4.16. In accordance with Rule 4, the value of net gains / losses across the 3 habitat categories cannot be summed. Therefore, the net gains in river habitat cannot be used to ‘balance’ any loss in hedgerows (linear) and habitat (area). Net losses will remain for these categories of habitat.

## 5. Use of the DEFRA metrics in assessing Biodiversity Net Gain (BNG) has been included in other NSIPs

5.1. Defra biodiversity metrics have been submitted to accompany a variety of NSIP applications, initially the original Biodiversity Metric (2012) but more recently the Biodiversity Metric 2.0. We have not found any NSIP utilising the latest industry standard - Biodiversity Metric 3.0 – although this is not a surprise given it was only published in July 2021. See Table 1 below.

PINS reference	Description	Biodiversity Metric (2012)	Biodiversity Metric 2.0
EN010085	Cleve Hill Solar Park (decided)	[REP2-045] submitted prior to publication of metric 2.0	[REP4-052] produced following publication of metric 2.0. Demonstrates no “trading down” of medium/high distinctiveness habitats, page 35-36. Losses of low distinctiveness habitat are offset by “trading up”: <i>“Whilst there will be a loss of all biodiversity units associated with the cropland and some loss of other neutral grassland, the post-construction habitats that will be created in its place will be of a good condition and have a medium or higher distinctiveness category”</i> , page 8.
TR010027	M42 Junction 6 Improvement (decided)	[REP7-007] modified version of metric. 1.4.4 <i>“There should not be a ‘trading down’”</i> . 3.2.3 Justifies losses of high distinctive habitat. 4.4.4 Offset sites for loss BNG.	
TR010059	A1 in Northumberland: Morpeth to Ellingham (decision by 05/01/2022)	[REP2-009] Table 3-2 demonstrates how the scheme does not meet the 10 Principles of BNG.	Switched to 2.0 [REP5-039].
TR010034	A57 link road (examination)		[APP-169] paragraphs 3.4.4 to 3.4.6 consider “trading down”.

Table 1: Examples of NSIP applications utilising Defra Biodiversity Metric 2012 / Biodiversity Metric 2.0

5.2. Transport schemes by Highways England / National Highways have used a modified version of Biodiversity Metric (2012). Recently, DMRB 108 LA Biodiversity (published

March 2020) specifically requires usage of Biodiversity Metric 2.0, resulting in a number of schemes currently going through examination that are supported by a Defra Biodiversity Metric 2.0

- 5.3. Below are examples of transport schemes using a Defra biodiversity metric that consider the importance of “trading down” and confirm net losses / requirement for compensation:

TR010027 - M42 Junction 6 Development Consent Order Scheme - 8.82 Interim Biodiversity Impact Calculation [REP7-007]

- 5.4. A Biodiversity Impact Calculator was submitted for the M42 Junction 6 Development Consent Order for scheme TR010027 [TR010059-REP7-007]. The report utilises a modified version of the Defra Biodiversity Metric to calculate permanent loss of habitat.
- 5.5. The report sets out the principles of biodiversity net gain at section 4.1, including the requirement for not “trading down” (paragraph 4.1.4). Section 3.2.3 states that the “*aim [of the Environmental Masterplan] has been to replace habitats lost with Priority Habitats of the same or a higher distinctiveness*”. Where this has not been achieved, it provides justifications – in this case, the potential bird strike risk, given the “*Scheme being located within Birmingham Airport’s aerodrome safeguarding zone*”.
- 5.6. The M42 scheme results in a net loss in area-based habitats and proposes offset sites, which could “*facilitate the delivery of biodiversity improvements which would offset some of the loss of area-based habitats recorded within the interim calculation*” (paragraph 4.4.4).

TR010059 – A1 in Northumberland: Morpeth to Ellingham - 6.28 Biodiversity No Net Loss Assessment for the Scheme (Tracked) for Change Request [REP5-039]

- 5.7. The Morpeth to Ellingham A1 improvement scheme is currently awaiting decision by the Secretary of State.
- 5.8. The Biodiversity No Net Loss Assessment for the scheme TR019959 originally used the Biodiversity Metric (2012) [TR010059-REP2-009] but has been updated to utilise the Biodiversity Metric 2.0 version [TR010059-REP5-039] because “*this metric supersedes and replaces the former Defra biodiversity metric and represents the current metric at the time of assessment.*”
- 5.9. Paragraph 4.1.4 of the latest version [TR010059-REP5-039] concludes that the “*no net loss cannot be claimed for the Scheme as a whole, due to the loss of irreplaceable habitat (ancient woodland), medium distinctiveness woodland and scrub and river habitat*” albeit “*the assessment calculation does identify a net gain in hedgerows, area-based priority woodland and wetland habitats.*”



## **6. Position and supporting policy basis, especially in NPS NN, regarding the need to use BNG metrics.**

### BNG assessment & implications for the Environmental Statement, Biodiversity Chapter [APP-077]

- 6.1. Before considering policy basis for the Cambridgeshire Councils' position, it is worthwhile explaining how the evidence provided by the biodiversity metric calculations has identified inconsistencies in the Biodiversity Chapter [APP-077] assessment of impact to habitats, particularly priority habitats.
- 6.2. Table 8-9 summarises losses of priority habitat, including woodland, hedgerow and arable habitat. However, it does not include losses of reedbeds and wood-pasture and parkland which are identified as priority habitats (i.e. high distinctive habitats) that will be impacted by the scheme within [APP-206] / [REP3-012].
- 6.3. Table 8-10 summarises the operational impact of the scheme on habitats, but only considers impact of the scheme on area-based habitats of low value, which doesn't reflect the habitats identified as medium / high distinctiveness habitat within the biodiversity metric [REP3-013]
- 6.4. Table 8-10 identifies significant, beneficial effects on woodland habitat. This doesn't reflect the uncompensated loss of high distinctiveness (high priority) lowland mixed deciduous woodland and wood-pasture identified.
- 6.5. Table 8-10 does not consider the potential significant adverse effect on other high distinctiveness habitat (wetland-reedbed) and medium distinctiveness habitat (ditches and mixed scrub).
- 6.6. These significant adverse impacts on habitats, including priority habitats, need to be considered in relation to NPS NN requirements 5.25 & 5.35 and local plan policies SCDC policy NH/4 and HDC policy LP 30, as discussed below.

### National Policy Statement for National Networks requirement 5.25 - significant harm

- 6.7. The A428 scheme results in net loss in biodiversity value for hedgerows and high / medium distinctiveness area-based habitat [REP3-013] and therefore, demonstrates that the Scheme does not adequately avoid, mitigate or compensate for significant impacts on these habitats, including priority habitats (as discussed above). As such, the scheme does not accord with NPS NN requirement 5.25:

*“5.25 As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting<sup>[75]</sup> in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.”*

<sup>[75]</sup> *Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for residual adverse biodiversity impacts arising from a development after mitigating measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity.*

6.8. In accordance with paragraph 5.25, appropriate compensation measures should be sought, where such significant harm cannot be avoided / mitigated. Therefore, compensatory measures for the harm to high and medium distinctiveness habitats and hedgerows should be sought. This could be delivered through Biodiversity Offsets to achieve no net loss, and preferably, a net gain of biodiversity (see reference 75, above). However, currently, these habitats are left uncompensated for and resulting in a net loss in biodiversity value.

#### National Policy Statement for National Networks requirement 5.35 - Priority Habitats

6.9. The A428 scheme results in net loss in biodiversity value for priority habitats (hedgerows and woodland, wood-pasture and reedbed of high distinctiveness, [REP3-013]). No priority habitats will be created as part of the scheme. The only exception is the creation of hedgerow, however, this provides insufficient biodiversity units to compensate for the loss of hedgerow habitat [REP3-013].

6.10. Therefore, the scheme has not protected priority habitats for adverse effect of development and as such does not accord with NSP NN requirement 5.35:

*“5.35 Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales and therefore requiring conservation action. The Secretary of State should ensure that applicants have taken measures to ensure these species and habitats are protected from the adverse effects of development. Where appropriate, requirements or planning obligations may be used in order to deliver this protection. The Secretary of State should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits of the development (including need) clearly outweigh that harm”.*

6.11. In accordance with requirement 5.35, it would be possible to off-set these adverse effects through the requirement / planning obligation for compensatory habitat, such as usage of on-site land currently identified for temporary usage (e.g. hedgerow / arable field margins restored / created on borrow-pits) or off-site compensation. Some priority habitats, such as woodland, would be difficult to re-create from new and therefore, may be more appropriate for contributions to off-site projects that will enhance and restore existing woodland, such as the West Cambridgeshire Hundreds project.

#### South Cambridgeshire Local Plan (2018) policy NH.4

6.12. The A428 scheme results in net loss in biodiversity value for hedgerows and high / medium distinctiveness area-based habitat and therefore, does not maintain the existing biodiversity value of the Site. In addition, the Scheme does not adequately mitigate or compensate for significant impacts to priority habitats (hedgerows and high distinctiveness area-based habitat). Therefore, the scheme does not accord with policy NH.4(2) & NH.4(3), which provide as follows:

*“2. New development must aim to maintain, enhance, restore or add to biodiversity. Opportunities should be taken to achieve positive gain through the form and design of development. Measures may include creating, enhancing and managing wildlife habitats and networks, and natural landscape....”*

*“3. If significant harm to the population or conservation status of a Protected Species, Priority Species<sup>1</sup> or Priority Habitat resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will be refused”.*

Huntingdonshire Local Plan to 2036 policy LP 30

6.13. The A428 scheme results in net loss in biodiversity value for hedgerows and medium / high distinctiveness area-based habitat and therefore, does not accord with LP 30:

*“A proposal will ensure no net loss in biodiversity and provide a net gain where possible, through the planned retention, enhancement and creation of habitats and wildlife features, appropriate to the scale, type and location of development. Large scale development proposals should provide an audit of losses and gains in biodiversity produced according to a recognised methodology”.*