

Extracts from Biodiversity Metric 3.0

From Biodiversity Metric 3.0 User Guide.pdf

1.1 This guidance is for anyone planning to use biodiversity metric 3.0 and anyone who wants to understand the outputs of the metric. This includes developers who have commissioned a biodiversity assessment using the metric, communities wanting to understand the impacts of a local development, and planning authority decision-makers interpreting metric outputs included in a planning application or land owners wishing to provide biodiversity units from their sites to others.

1.4 Biodiversity metric 3.0 is an updated version of the original Defra biodiversity metric. It is the culmination of a Defra commissioned project to develop a metric that began in 2008

1.7 Biodiversity metric 3.0 only accounts for **direct impacts** on habitats within the footprint of a development or project.

1.9 Biodiversity metric 3.0 does not include **species** explicitly. Instead, it uses habitat types as a proxy for the biodiversity 'value' of the species communities that make up those different habitats.

1.14 This metric can be applied at a range of scales from developments of a few houses or land management changes in individual fields to strategic allocations or entire land holdings.

1.15 Biodiversity metric 3.0 supports and reinforces the application of the **mitigation hierarchy** (*which*) means aiming to retain habitats in situ and avoiding or minimising habitat damage so far as possible, before looking to enhance or recreate habitats.the metric applies multipliers that are based on the risks inherent in creating or restoring habitat, and which are not applicable when existing habitat is safeguarded.

2: Summary of how biodiversity metric 3.0 works

2.1. This chapter provides an overview of what biodiversity metric 3.0 measures and how, the key steps in the process and the principles and rules that must be applied.

2.2. Biodiversity metric 3.0 uses **habitats**, the places in which species live, as a proxy to describe biodiversity. These habitats are converted into '**biodiversity units**'. These biodiversity units are the 'currency' of the metric.

2.3. Biodiversity units are calculated using the **size** of a parcel of habitat and its **quality**. The metric uses **habitat area** (measured in hectares) as its core measurement, except for linear habitats (hedgerows and lines of trees and rivers and streams) where **habitat length** (measured in kilometres) is used.

2.4. To assess the **quality** of a habitat biodiversity metric 3.0 scores:

- a. Habitats of different types, such as woodland or grassland, according to their relative biodiversity value or **distinctiveness**. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread.
- b. The **condition** of a habitat. Scoring the biodiversity value of the habitat relative to others of the same type.
- c. Being 'better' and 'more joined-up' are important facets of habitats that can contribute to halting and reversing biodiversity declines, so the metric also accounts for whether or not the habitat is sited in an area identified, typically in a relevant local strategy or plan, as being of **strategic significance** for nature.

2.5. Where new habitat is created, or existing habitat is enhanced, the difficulty and associated **risks** of doing so are taken into account by biodiversity metric 3.0. If habitat is created to compensate for losses elsewhere, then the metric also takes account of its proximity to the site of the losses.

2.7. There are ... three broad categories of habitats and biodiversity units for which scores are calculated differently:

- Area habitats (such as grasslands, woodlands and mudflats)
- Linear hedgerows and lines of trees
- Linear rivers and streams

2.8. It is an important rule of the metric that **the three types of biodiversity units described above are unique and cannot be summed, traded or converted** (*see Rule 4 below*).

How area habitat biodiversity units are calculated

2.9. The metric uses widely used classifications for categorising habitats.

2.10. The metric operates by applying a score to each of the quality elements set out above in section 2.4:

Distinctiveness

e.g. modified grassland has a “Low” distinctiveness score, lowland meadows are “Very High”. *See picture from Table TS3-1 below.*

Condition

A score based on the biodiversity value of the habitat relative to others of the same type. This is determined by condition criteria set out in the technical supplement

Strategic significance

A score based on whether the location of the development and/or off-site work or the habitats present/created have been identified as significant for nature.

2.11. The metric operates by applying a score to each of these elements. It then multiplies the size of each habitat parcel with each of these ‘quality’ scores to produce a number that represents the **biodiversity unit** value of each habitat parcel ...

2.12. The user would first calculate the ‘**baseline**’ or ‘**pre-intervention**’ value of a site in biodiversity units before any development or management change has occurred.

2.13. The calculation is normally then repeated for the ‘**post-intervention**’ scenario. This calculation should include any retained or enhanced existing habitats and newly created habitats. At this stage, because the metric is measuring predicted changes rather than existing habitats, additional factors to account for the risk associated with creating, restoring or enhancing habitats are also considered. Figure 2-2 sets out the three risk factors incorporated into the metric.

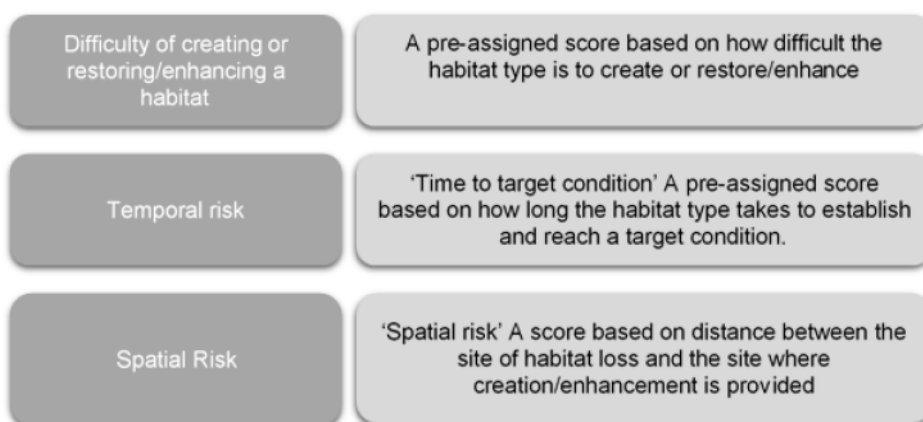


FIGURE 2-2: Risk components of biodiversity metric 3.0

2.14. The predicted value of the habitats in biodiversity units ‘post-intervention’ is then deducted from the baseline ‘pre-intervention’ unit score to give a net change in unit value. Biodiversity metric 3.0 can be used to calculate the numbers of units or the percentage net gain your design is predicted to deliver. The post-intervention proposals can be adjusted to revise the scheme design to improve the number of biodiversity units or percentage net gain obtained.

2.15. The metric can be used to measure off-site habitat changes, where this is required to achieve a net gain, usually when the metric is being applied in a development context. The processes for measuring on-site and off-site changes are very similar. The biodiversity unit value of the off-site habitats is calculated for the baseline ‘pre-intervention’ and ‘post-intervention’ stages. The ‘pre-intervention’ units are then subtracted from the ‘post-intervention’ units to work out how many biodiversity units will result from that off-site habitat change. For off-site changes, there is an additional ‘spatial risk’ multiplier *see 5.59 below* which is applied to reflect the proximity of the off-site changes to the project site where the biodiversity loss is occurring. Biodiversity metric 3.0 then combines any off-site gains or losses of biodiversity units with the on-site results to show overall changes in biodiversity unit value and percentage change relative to the on-site baseline.

Principles and rules for using the metric

Limitations

2.21. Assessments should be conducted with regard to a set of **key principles and rules**. These are set out below:

Principles

Principle 1: The metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species and habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.

Principle 3: The metric’s biodiversity units are only a proxy for biodiversity and should be treated as relative values. While it is underpinned by ecological evidence the units generated by the metric are only a proxy for biodiversity and, to be of practical use, it has been kept deliberately simple. The numerical values generated by the metric represent relative, not absolute, values.

Principle 6: The metric is designed to inform decisions, not to override expert opinion.

Management interventions should be guided by appropriate expert ecological advice and not just the biodiversity unit outputs of the metric. Ecological principles still need to be applied to ensure that what is being proposed is realistic and deliverable based on local conditions such as geology, hydrology, nutrient levels, etc. and the complexity of future management requirements.

Principle 7: Compensation habitats should seek, where practical, to be local to the impact. They should aim to replicate the characteristics of the habitats that have been lost, taking account of the structure and species composition that give habitats their local distinctiveness. Where possible compensation habitats should contribute towards nature recovery in England by creating ‘more, bigger, better and joined up’ areas for biodiversity.

Rules

Rule 2: Compensation for habitat losses can be provided by creating new habitats, or by restoring or enhancing existing habitats. Measures to enhance existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.

Rule 3: ‘Trading down’ must be avoided. Losses of habitat are to be compensated for on a “like for like” or “like for better” basis. New or restored habitats should aim to achieve a higher distinctiveness

and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric.

Rule 4: ... the three types of biodiversity units generated by this metric (for area, hedgerow and river habitats) are unique and cannot be summed.

3: Data Collection & Preparation for Use in the Metric

3.1 This section sets out how to collect the data required for a biodiversity net gain assessment, and how to prepare this data for use in biodiversity metric 3.0.

3.2 To calculate area biodiversity units, the following data must be obtained for both existing and proposed habitat parcels (a habitat parcel is a contiguous area of habitat of the same type and condition):

- Habitat types (including artificial and sealed surfaces of no biodiversity value)
- Area of each habitat parcel (hectares)
- Condition of each habitat parcel (Good, Moderate, Poor)
- Strategic significance of each habitat parcel (High, Medium, Low)

3.3 To calculate hedgerow and line of trees biodiversity units, the following data must be obtained for both existing and proposed hedgerow habitat and for both on-site and off-site locations.

- Hedgerow/Line of trees type - based on the descriptions in Table TS1-2 in the Technical supplement
- Length of each Hedgerow/Line of trees parcel (kilometres)
- Condition of each Hedgerow/Line of trees parcel (Good, Moderate, Poor).
- Strategic significance of each Hedgerow/Line of trees parcel (High, Medium, Low)
- Spatial risk (off-site interventions only) *see 5.59 below*

3.4 To calculate rivers and streams biodiversity units the following data must be obtained for both existing and proposed watercourse habitat and for both on-site and off-site locations.

- Priority Habitat classification, assessed using available data sets
- River classification: to be assessed as a main river, ordinary watercourse, ditch or canal using available data sets
- Culvert presence, meaning whether the watercourse is contained within a culvert
- Length of each watercourse within the site (kilometres)
- Condition of each watercourse (Good, Moderate, Poor)
- The extent of any interventions, encroachment into the riparian zone and watercourse channel
- Strategic significance of each watercourse (High, Medium, Low); and
- Spatial risk (off-site locations only). *see 5.59 below*

3.8

Step 2: Site visit – identifying and mapping habitats

h. Habitats should be classified using either the UK Habitat Classification System, European Nature Information System (EUNIS), Water Framework Directive (WFD) Lakes typologies (see Box 3-2) or the hedgerows and lines of trees key in Box 8-2. A small number of habitats have definitions specific to biodiversity metric 3.0. This means that habitats are classified in a way which is widely recognised and that can be directly input into the biodiversity metric 3.0 calculation tool. **All habitats used in biodiversity metric 3.0 and their definition source are listed in Table TS2-1.** *In Technical Supplement.pdf, or see picture from TS3-1 below.*

Step 3: Site visit – assessing habitat condition

- a. All habitat parcels, hedgerows and watercourses must be assigned a habitat condition score: this is a measure of the habitat's quality. Habitat condition can only be assessed after a land parcel, hedgerow or watercourse has been assigned a habitat type.
- b. The full methodology for assessing habitat condition is set out within Part 1a of the Technical Supplement. The condition assessment criteria for Hedgerows and Lines of trees are set out within Part 1b of the Technical Supplement.
- d. On completion of condition assessments, all habitat parcels should be assigned one of three condition categories: Good, Moderate or Poor. The metric tool does allow for intermediate categories (Fairly Good and Fairly Poor)

Step 5: After site visit – assigning strategic significance

- a. All habitat parcels (both baseline and post-intervention) must be assigned a strategic significance score.
- c. A score should be assigned to each habitat parcel according to the habitat type and what is identified as a priority in a particular area. The options for scoring each habitat parcel are:
 - High - Within area formally identified in local strategy, plan or policy
 - Medium - Location ecologically desirable but not identified in a local strategy, plan or policy
 - Low - Not identified in a local strategy, plan or policy OR No strategy or plan is in place in the area

5: Detailed description of biodiversity metric 3.0

5.59 There are both ecological and social drivers for off-site habitat to be provided close to where losses occur: e.g. to avoid depleting biodiversity in local areas or to recognise the cultural ecosystem services provided by an area of land to a local community. For this reason, the metric penalises proposals where the off-site habitat is located at distance from the impact site. The Spatial risk multiplier is applied to those off-site habitats which are delivered outside either the local planning authority area (LPA), the same National Character Area (NCA) or Marine Plan Area for intertidal habitats. For rivers and streams the waterbody or catchment is the defining boundary and WFD waterbody and catchment boundaries should be used to determine the Spatial risk created by delivering offsets in different locations.

Area habitat data tables

TABLE TS3-1: Area habitat data values (categorical values) for Distinctiveness, Difficulty of creation and enhancement and Time to target condition for habitat creation (Excludes enhancement and restoration time to target condition values - see Table TS3-2)

Key: '-' indicates that an option is not possible or permitted within the metric calculation

| Habitat Description | Distinctiveness | Difficulty of | | Time (years) to target condition for habitat creation | | | | | | |
|---|-----------------|---------------|-------------|---|-------------|----------|-------------|------|--------------------|-------------|
| | | Creation | Enhancement | Good | Fairly Good | Moderate | Fairly Poor | Poor | N/A - Agricultural | N/A - Other |
| Coastal lagoons - Coastal lagoons | High | Medium | Medium | 10 | 8 | 5 | 3 | 1 | - | - |
| Coastal saltmarsh - Saltmarshes and saline reedbeds | High | High | Medium | 15 | 10 | 7 | 3 | 1 | - | - |
| Cropland - Arable field margins cultivated annually | Medium | Low | Low | - | - | - | - | - | 1 | - |
| Cropland - Arable field margins game bird mix | Medium | Low | Low | - | - | - | - | - | 1 | - |
| Cropland - Arable field margins pollen & nectar | Medium | Low | Low | - | - | - | - | - | 1 | - |
| Cropland - Arable field margins tussocky | Medium | Low | Low | - | - | - | - | - | 1 | - |