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Biodiversity Audit

Dixter Lane, Northiam

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1.1. Introduction

In March 2023, MKA Ecology Ltd was commissioned by Rother District Council to undertake Biodiversity Audits of 23 sites owned and managed by the district council. The aims of the biodiversity audits were to provide baseline information on the type and quality or condition of these areas with a view to identifying measurable opportunities for positive biodiversity interventions using the Biodiversity Metric. This report refers specifically to Dixter Lane, Northiam.

1.2. Methodology

The audits were performed using standard methodologies; habitats were defined according to the UK Habitat Classification and habitat conditions were assessed assist the 'Biodiversity Net Gain' metric schema (Natural England, 2023). By assigning values to habitats by their 'distinctiveness' or rarity, and their condition, the overall measurable biodiversity contained within the surveyed sites was calculated using the Defra Biodiversity Metric (v4.0). In principle, larger/longer, more valuable and better condition habitats score more highly. A detailed methodology is provided at the end of this document.

1.3. Site status

The site is located within the High Weald National Landscape (formerly known as Area of Outstanding Natural Beauty (AONB) and High Weald National Character Area (NCA).

Dixter Lane, Northiam is not currently covered by any nature conservation designations. The Site is 0.5km west of Northiam Site of Scientific Special Interest (SSSI), which is designated for geological rather than ecological features.

There are no Priority Habitats or ancient woodland on-site as identified on Natural England inventories (Natural England, 2023c,d). It lies within Rother, Brede and Tillingham Woods Biodiversity Opportunity Area (BOA; Sussex Biodiversity Partnership, 2024). Target habitat types for this BOA for creation, restoration and management are woodland, meadows and wetlands.

1.4. Site description

This Site lies on Northiam Beacon Field, an area of community parkland (centred on grid reference TQ 82340 25234) and measures approximately 0.9 hectares. It is situated in the centre of the village of Northiam. Habitats present include grassland, woodland, rural trees and hedgerows. The Site is well connected to the wider area through woodland corridors adjoining Weights Wood to the north and Harlot's Wood to the east, both of which are listed on Natural England's Priority Habitats and Ancient

Woodland Inventories (Natural England, 2023c,d). The immediate surroundings are largely residential with some arable fields south and west. A Priority Pond is located 0.3km south of the Site. Within 2km of the Site there is also an expansive area of Coastal and Floodplain Grazing Marsh, and numerous small Traditional Orchards.

The table below shows the habitats which are present at Dixter Lane, Northiam. Detailed descriptions of each habitat type are given in Section 1.16.

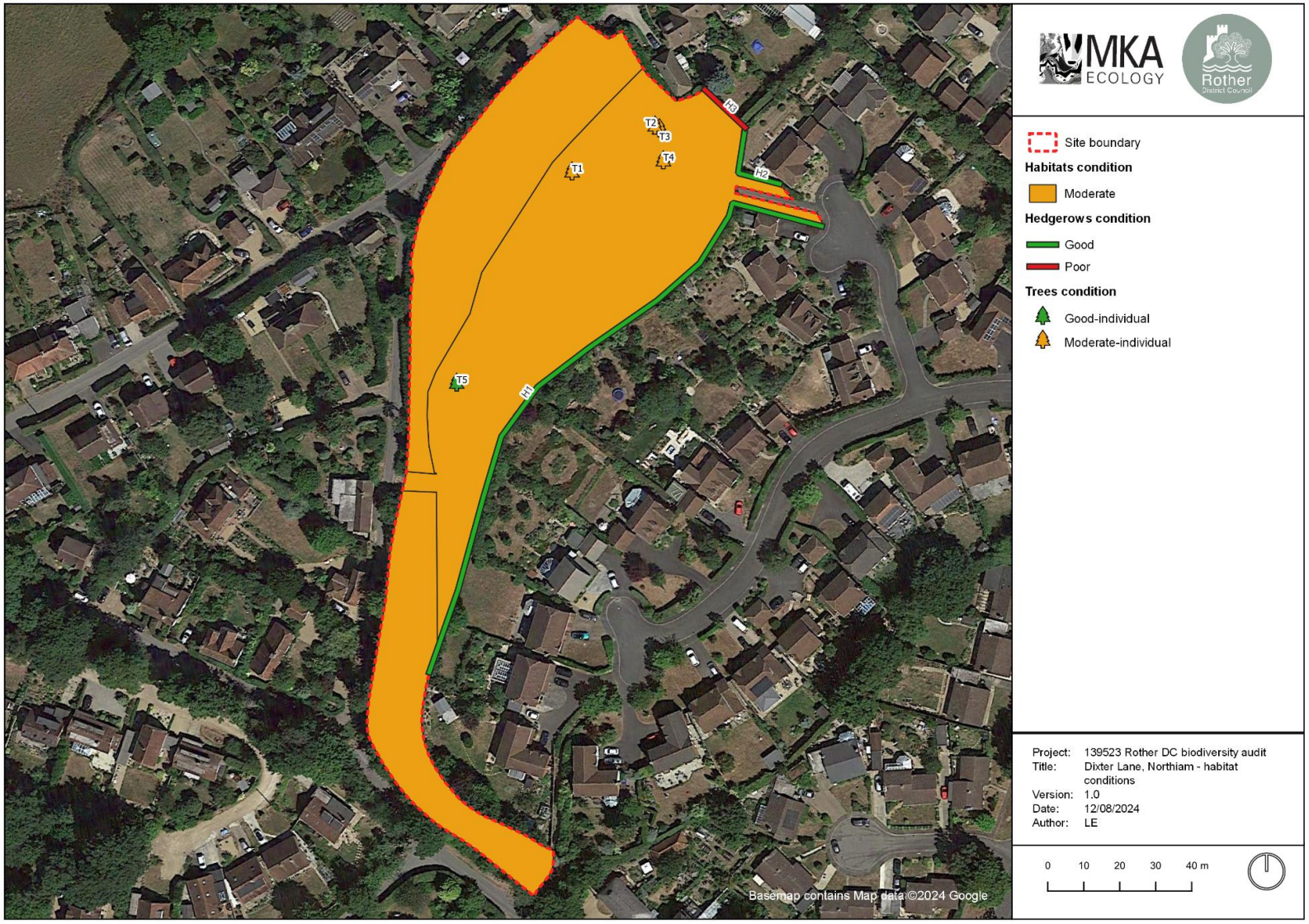
Habitat type	Description
Lowland mixed deciduous woodland	Includes both semi-natural and ancient woodland growing on a range of soil types, comprising native deciduous tree and shrub species. Deciduous species occupy >80% of tree cover.
Other neutral grassland	A widespread grassland type, distinguished by an absence of strong calcareous or acidic indicator species, and low occurrence of palatable grasses typical of modified grassland.
Rural individual trees	Individual trees in a rural setting.
Native hedgerow with trees	Hedgerows comprised of predominantly native species, including larger tree species.
Native species-rich hedgerow	Hedgerows comprising at least five native woody species, and including mature tree standards.
Ornamental non-native hedge	Hedgerows dominated by ornamental, non-native woody species.

1.5. Maps

The maps presented below show the existing habitats at Dixter Lane, Northiam and their conditions. Quadrats ($1m^2$) were used to determine the average number of species per square metre in the grassland, which informs the condition assessments for Biodiversity Net Gain.

Figure 1: UK Habitats Classification map

Figure 2: Condition assessments



1.6. Photographs

Photograph 1: Other lowland deciduous woodland

Photograph 2: Native hedgerow with trees

Photograph 3: Other neutral grassland

Photograph 4: Rural individual trees (background of image)

Photograph 5: Non-native and ornamental hedge

Photograph 6: Invasive Cherry Laurel

Photograph 7: Species-rich native hedgerow

1.7. Priority habitats

Although not identified on Natural England inventories (Natural England, 2023c,d), it is considered the following Priority Habitats are present at this location;

- Lowland Mixed Deciduous Woodland;
- Native Hedgerows.

Habitats of Principal Importance are recognised as the most important habitats in the UK and are listed within the Natural Environment and Rural Communities Act (2006).

1.8. Biodiversity units

The biodiversity units at Dixter Lane, Northiam, based on broad habitat types, are shown in the table below.

Habitat type	Total biodiversity units
Other neutral grassland	4.05
Lowland mixed deciduous woodland	5.63
Individual rural trees	0.83
Total habitat units	**10.51**
Linear features type	**Total biodiversity units**
Native hedgerow with trees	2.24
Species-rich native hedgerow	0.29
Non-native and ornamental hedgerow	0.02
Total hedgerow units	**2.55**

1.9. Invasive non-native species

Cherry laurel *Prunus laurocerasus* was recorded within the woodland and is distributed sparsely over this habitat. Cherry laurel is not listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), but within woodlands this evergreen shrub creates dense shade to the detriment of native woodland plants, and can therefore outcompete native species. The presence of this species incurs a penalty in the Biodiversity Metric condition assessment for woodland.

1.10. Constraints

Constraints relating to protected and notable species, which should be considered as part of habitat enhancement or creation programmes, are listed below. It should be noted that most risks associated with protected species constraints can be easily avoided with appropriate planning.

- Presence of nesting birds within the grassland, hedgerows, woodland and trees.
- Presence of reptiles in grassland, woodland and hedgerow habitats.
- Potential presence of amphibians (such as great crested newt *Triturus cristatus*) in thick vegetation during their terrestrial phase, due to the presence of priority pond habitat within 2km and Natural England Great Crested Newt licence applications nearby.
- Potential use of the habitats onsite by foraging and commuting bats.
- Potential use of trees onsite by roosting bats.
- Potential presence of hedgehogs *Erinaceus europaeus*.
- Potential presence of hazel dormouse *Muscardinus avellanarius* in woodland and hedgerow habitats.
- Potential presence of badger *Meles meles* setts (no setts recorded during the site visit).

1.11. Opportunities

The following sections detail the potential opportunities for creating new habitats or enhancing existing habitats at Dixter Lane, Northiam, and also measures to provide further opportunities for priority species.

Opportunities - Habitats

Habitat type	Opportunities
Woodland	Although not listed on Natural England inventories, the species composition suggests this is an ancient woodland a Priority Habitat, and is allocated high distinctiveness in the Biodiversity Metric. The interventions that would contribute most significantly to enhancing this habitat are: • Reducing (ideally eliminating) cover of cherry laurel and encouraging growth of native species; • Introducing rotational coppicing to create more areas of open space within the woodland (particularly in the north parcel), and encourage regeneration of native flora. Create log and brash piles with the arisings to increase the deadwood resource, particularly in the north parcel where there is currently very little. • Browsing pressure may also be negatively impacting the woodland, but this is hard to manage in practice without coordinated effort at a landscape scale. Measures to protect recovering vegetation (such as coppice stools) from

Habitat type	Opportunities
	over-browsing can be incorporated into the management practices.
Hedgerows	The two native hedgerows (H1 and H2) currently score the maximum within the condition assessment. Whilst the hedgerows are currently in an ideal condition to support wildlife, changes in management (or no management at all) may result in degradation of this condition. Introduce a hedgerow management plan, including a rotational cycle for phased cutting or laying of all hedgerows. Sections and sides of the hedgerow should be cut in alternate years to ensure a continuous food supply and habitat for birds, hazel dormice and other wildlife. Hedgerow H1 could also be re-classified as a native species-rich hedgerow if more than five woody species per 30m length can be encouraged; either through infill planting or natural regeneration. Ideally, species composition of H3, the non-native hedgerow, would be altered to gradually replace garden privet with native species. This should be done over time, without disrupting connectivity of the hedgerow, which is arguably more important than its species composition.
Other neutral grassland	The grassland is already under a less regular mowing regime. Some further interventions, which could be detailed as part of a management plan for the site: • Implement a slightly more regular rotational mowing regime to create greater variety in sward height. Cut and collect arisings to reduce nutrient inputs; • Regular management to keep growth of undesirable species below threshold levels; • Increase botanical diversity within the sward as a longer-term goal. Soil sampling is recommended to inform appropriate management.
Rural trees	Individual trees could be connected to hedgerows and the woodland with further tree planting. Veteranising of existing trees where health and safety considerations allow (see Woodland Trust, 2014).

Opportunities - Species

Species	Opportunities
Invertebrates (saproxylic)	*Standing deadwood piles:* The creation of 'stumperies' with large volume wood (as generated by management works) dug into the soil (eg: PTES, 2016). *Artificial rot-holes:* Cavities cut into stumps to mimic rot holes. These often fill with water and provide habitat for the larvae of a range of specialist invertebrates.
Invertebrates (pollinators)	Increasing the proportion of wildflowers within the grassland will create additional foraging habitat for pollinators.
Invertebrates (generalist)	'Bug hotels,' 'bee banks' and log piles could be installed around the Site.
Birds	Installation of generalist bird boxes in the woodland and trees within the grassland. Bird boxes with varying entrance hole sizes should be used to provide for a range of species.
Amphibians	Creation of a wildlife pond within the grassland would add a high value habitat to the existing habitat mosaic, particularly of value to local amphibian populations.
Reptiles	Reptiles could be present at the site, and could be supported through creation of bespoke reptile refugia and hibernacula, providing additional areas for basking and foraging.
Bats	Installation of bat boxes in the woodland and on trees within the grassland.
Hazel dormouse	Installation of dormouse boxes within the woodland, and management for key food plants for this species within the understorey (e.g. hazel, honeysuckle).

1.12. Key targets for the short and long term

Short-term targets

Some key targets for upcoming 5 to 10 years:

- Further botanical surveys and soil sampling of grassland;
- Reduce undesirable species within grasslands, and commence mowing regime, informed by survey effort;
- Create a management plan for the woodland, including plans to reduce cover of cherry laurel and reintroduce coppicing;
- Implement reduction of cherry laurel and coppicing.
- New tree planting;
- Investigate veteranizing existing trees;

- Install bat and bird boxes; and
- Create and implement hedgerow management plan.

Long-term targets

Some key targets for long term planning;

- Explore options for increasing botanical diversity of grassland, including grazing;
- Veteranise selected trees where health and safety allows; and
- Review woodland and hedgerow management plans.

1.13. Further monitoring work/other activities

Specific surveys for protected and priority species could be undertaken for hazel dormouse, bats, invertebrates, birds and reptiles. There are survey methods for all these species which can be undertaken by volunteers; groups could be supported by a licensed ecologist or local specialist if needed.

These targeted surveys could be supplemented by regular Bioblitz surveys at the site, carried out by volunteer groups, to monitor general species diversity.

Further specialist botanical survey work, and soil sampling, is recommended to inform management activities to enhance grassland habitats.

1.14. Future risks to condition

- Potentially increased levels of recreational pressure;
- Changes in management and land use;
- Tree disease;
- Impacts of climate change on the habitats present, such as increased drought, fire and flood risk; and
- Introduction and spread of invasive, non-native species.

1.15. Habitat descriptions and conditions

Grassland
UKHabs habitat types present (secondary codes in brackets) **g3c – Other neutral grassland**
Description **g3c – Other neutral grassland:** Covering the eastern extent of the site, this grassland has a tall sward around 1m high, with sections of mown pathways cutting throughout the field for access. The species list for this habitat is extensive and includes soft brome *Bromus hordeaceus*, Yorkshire fog *Holcus lanatus*, common bent *Agrostis capillaris*, meadow vetchling *Lathyrus pratensis*, barren brome *Anisantha sterilis*, sweet vernal grass *Anthoxanthum odoratum*, bird's-foot-trefoil *Lotus corniculatus*, cut-leaved crane's-bill *Geranium dissectum*, selfheal *Prunella vulgaris*, creeping buttercup *Ranunculus repens*, perennial rye-grass *Lolium perenne*, broad-leaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense*, white clover *Trifolium repens*, red clover *Trifolium pratense*, and Timothy *Phleum pratense*. A 1mx1m plot averages eight plant species. A pedunculate oak *Quercus robur*, hornbeam *Carpinus betulus*, and whitebeam *Sorbus sp.* are scattered within the grassland field.
Condition **g3c – Other neutral grassland: Moderate.** Fails to reach good condition due to lack of variation in sward height, above threshold levels of undesirable species (creeping buttercup, creeping thistle, white clover) and low botanical diversity (fewer than 10 species per 1mx1m plot).

Woodland
UKHabs habitat types present (secondary codes in brackets) **W1f7: Other Lowland mixed deciduous woodland**
Description **W1f7: Other Lowland mixed deciduous woodland:** Two parcels of structurally complex woodland are situated on the western side of the site separated by a narrow grassland ride. The southern parcel (W1) has a notably open canopy composed of oak, ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus* allowing for considerable sunlight to penetrate to the understorey and field layers. The understorey consists of a more diverse range of species, including bramble *Rubus fruticosus*, non-native cherry laurel *Prunus laurocerasus*, dogwood *Cornus sanguinea*, holly *Ilex aquifolium*, hawthorn *Crataegus monogyna*, field maple *Acer campestre*, sycamore, hazel *Corylus avellana*, blackthorn *Prunus spinosa*, tutsan *Hypericum androsaemum*, and honeysuckle *Lonicera periclymenum*. The ground flora is composed of hogweed *Heracleum*

Woodland
sphondylium, greater plantain *Plantago major*, perennial rye-grass, common bent, creeping buttercup, common nettle *Urtica dioica*, broad-leaved dock, common ivy *Hedera helix*, cleavers *Galium aparine*, garlic mustard *Alliaria petiolata*, selfheal, bracken *Pteridium aquilinum*, and creeping bent *Agrostis stolonifera*. Deadwood is present throughout, and could support populations of saproxylic invertebrates. The second parcel in the north of the site (W2) is less biodiverse in terms of number of species, and featured no deadwood. The canopy is composed of oak and hazel and is significantly less open than W1. The understorey consists of cherry laurel, blackthorn, hornbeam, ash, holly, and hawthorn. Ground flora includes hogweed, bramble, ivy and cow parsley *Anthriscus sylvestris*.
Condition **W1f7: Other Lowland mixed deciduous woodland:** Both parcels are in **Moderate condition.** The southern parcel (W1) has a slightly higher score due to higher occurrence of deadwood, and its greater structural complexity. Both parcels are limited in reaching good condition by the presence of cherry laurel.

Hedgerows
UKHabs habitat types present (secondary codes in brackets) **h2a7 – Native hedgerow with trees** **H2a5 – Species-rich native hedgerow** **H2b – Non-native and ornamental hedge**
Description **h2a7 – Native hedgerow with trees** This hedgerow (H1) is approximately 0.19km in length and is largely unmanaged barring gaps adjacent to residential properties. It is composed of dogwood, hazel, holly, hawthorn, and field maple, although it contains, on average, fewer than five woody species per 30m length. Tree species interspersed within the hedgerow includes crab apple *Malus sylvestris*, oak, and silver birch *Betula pendula*. The size of the hedge is 2m tall and 1.5m to 3m at its widest; density is high throughout. **H2a5 – Species-rich native hedgerow** This hedgerow (H2) is similar to H1, however, no trees are found within the extent, and the length is much shorter at approximately 0.02km long. It contains, on average, five woody species or more per 30m length, including dogwood, hazel, hawthorn, and holly.

Hedgerows
H2b – Non-native and ornamental hedge Occurring in the north of the site separating the site from a residential property (H3), this ornamental hedgerow is short in length composed of cypress *Cupressus sp.* at 3m tall and 1.5m wide.
Condition **h2a7 – Native hedgerow with trees – H1: Good condition.** Passes all condition criteria apart from one, due to absence of any mature tree standards. **H2a5 – Species-rich native hedgerow – H2: Good condition.** Passes all condition criteria. **H2b – Non-native and ornamental hedge – H3:** This habitat type is automatically allocated **Poor condition.**

Individual trees
UKHabs habitat types present (secondary codes in brackets) **Rural trees**
Description **Rural trees** Pedunculate oak *Quercus robur*, hornbeam *Carpinus betulus*, and whitebeam *Sorbus sp.* trees are scattered within the grassland field.
Condition **Rural trees** Trees T1, T2, T3 and T4 are all in **Moderate condition.** They do not reach good condition because they are not mature, and lack ecological niches of value to other wildlife (bats, birds and invertebrates). Tree T5 (pedunculate oak) is in **Good condition.** It is the only mature tree on the site, but still lacks ecological niches of value to wildlife.

1.16. References

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Natural England (2023b) *The Biodiversity Metric 4.0 – User Guide*. Natural England: York.

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SxBRC (2023) *Sussex Biodiversity Records Centre: data search of protected and priority sites and species in Rother District.* Received 05/06/2023.

Woodland Trust (2014) Ancient Trees and special interest trees. Woodwise. Woodland Conservation News, Spring 2014. Available at: https://www.woodlandtrust.org.uk/media/1798/wood-wise-ancient-trees.pdf.

1.17. Surveyors

The survey was undertaken by Rory Roche ACIEEM. Rory has seven years' experience undertaking habitat surveys. The report was written by Joe Gillis, Graduate Ecologist at MKA Ecology Ltd. Joe is in his first season as an ecologist. The report has been reviewed by Will O'Connor CEcol MCIEEM. Will has over 15 years' experience working as an ecological consultant.

Detailed methodology

UK Habitat Classification

The habitat surveys followed the methodology of the UK Habitat Classification (professional) version 2.0 (hereafter UKHab; UK Habitat Classification Working Group, 2023). UKHab works at two levels: a hierarchical primary habitat classification and a list of secondary codes. The primary classification builds on existing habitat and botanical classifications (e.g., Phase 1, NVC). Habitats are described through an increasingly detailed hierarchy until a match is found. The secondary codes provide a list of environmental qualifiers that capture details for a range of other factors (e.g., hydrological regime, management etc). A given primary habitat area may have many secondary codes attached.

Some modifications to the UKHab were made as follows:

- Amenity grassland was categorised separately as 'g4a', a level 4 code of 'g4 - modified grassland'.
- Native hedgerows were categorised according to the more detailed Biodiversity Metric habitat label (see below). A level 5 hierarchy was created under the existing level 4 code 'h2a - Priority hedgerows' to reflect the differing features that hedgerows might contain in combination:

    - Association with a bank or ditch.
    - Species richness.
    - With/without trees.

Incidental plant species lists were gathered for each habitat and distributions of species estimated (using the DAFOR scale; **D**ominant, **A**bundant, **F**requent, **O**ccasional and **R**are). Full botanical inventories were not feasible within the scope of this work. Botanical lists are provided as a separate appendix to this Biodiversity Audit.

Biodiversity Metric

The Defra Biodiversity Metric 4.0 (Natural England, 2023) has been used for this Biodiversity Audit, with certain modifications as detailed in the Appendix. This method uses habitat as a proxy for biodiversity, whereby habitats are assigned the following 'multiplier' scores:

- Distinctiveness: A measure of the type and importance of a habitat. Habitats that are rare and/or support a wide range of species are more distinctive.

- Condition: A measure of the condition of a given habitat type. The condition is assessed according to a suite of criteria described within the methodology below. It should be stressed that condition in biodiversity terms is not to be confused with traditional perceptions of condition or maintenance. A grassland that might be perceived to be well maintained (e.g. regularly mown) is very likely to be in poor condition. Distinctiveness and condition are also not wholly independent. Some of the factors that lead to poor condition grasslands (intensive mowing or grazing) can also lead to a definition as a lower distinctiveness grassland.
- Strategic significance: Any site that possesses a designation is considered High, those deemed ecologically valuable but without designation are considered Medium, and those with limited ecological value and no designation are classed as Low.

These factors are then multiplied to the area (for habitat parcels) or length (hedgerows, lines of trees) to produce an overall 'biodiversity unit.' Large parcels of habitat or long linear features will score better.

The total number of units is presented for the surveyed areas, each site and by habitat type. Indications of how many units are currently contained within habitats of different conditions are also presented; this will help to indicate the opportunities that might be made to increase measurable biodiversity by improving the condition of existing habitats.

Condition assessments

Each habitat type was assessed for condition using the methodology outlined in the Defra Biodiversity Metric 4.0 (Natural England, 2023). Habitat condition is defined as either good, moderate or poor by assessment against a suite of condition criteria. A habitat in good condition will meet more of the criteria for good condition and fewer of the criteria for poor condition. A habitat in poor condition will meet fewer of the criteria for good condition and more of the criteria for poor condition. For the purposes of this assessment the interim categories of 'fairly good' and 'fairly poor' were not used because they are not clearly defined within the methodology and may present inconsistencies with future audit assessments. The habitat condition sheets were modified for use in the field and are supplied as supplementary data.

Habitats were therefore divided into parcels based upon their condition and minimum mappable unit of habitat area.

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