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Rother
District Council

Rother District Council

Biodiversity Audit

Land off Shrub Lane, Burwash

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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 Land off Shrub Lane, Burwash.

1.2. Methodology

The audits were performed using standard methodologies; habitats were defined according to the UK Habitat Classification and habitat conditions were assessed against the 'Biodiversity Net Gain' metric schema (Natural England, 2023a; Natural England, 2023b). 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).

Land off Shrub Lane, Burwash is not currently covered by any international, national or local nature conservation designations. The site is located in proximity to 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 is 0.57ha in size, and is situated at the northern end of the village of Burwash (central grid reference: TQ 67871 25294). It comprises a grassland field with a line of mature trees in the north-west half. There is a small area of hardstanding where the site boundary extends onto a pathway and road along the southern boundary. No information on current or past management of the site was available; the grassland is maintained by mowing, as was evident at the time of the survey visit.

The site is surrounded by Burwash village, with residential properties and roads bounding it on all sides. The wider landscape is characterised a network of fields, woodland parcels and hedgerows. Directly to

the north of the properties bounding the site, approximately 100m away, is Shrub Wood, which is listed on Natural England's Priority Habitat Inventory (Natural England, 2023c). This woodland has limited connectivity to the site, beyond a line of residential gardens. To the east, approximately 350m, lies a network of hedgerows and woodland belts forming part of Park Wood, which at 43ha, is the largest woodland in the immediate area. Park Wood is also listed on Natural England's Priority Habitat Inventory.

The table below shows the habitats which are present at Land off Shrub Lane, Burwash. Detailed descriptions of each habitat type are given in Section 1.16.

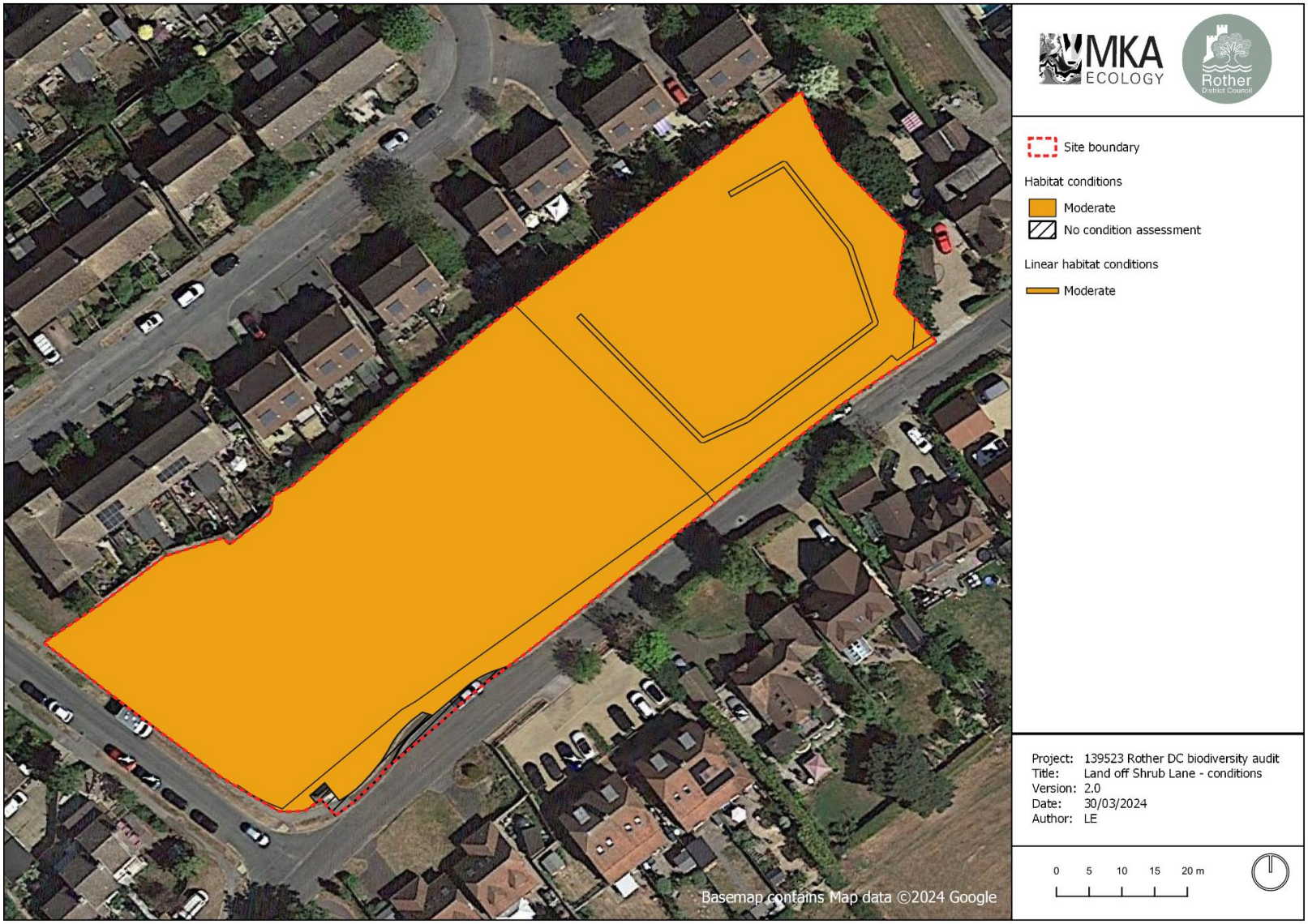
Habitat type	Description
Other neutral grassland	A widespread grassland type, distinguished by an absence of strong calcareous or acidic indicator species, and low occurrence of palatable grasses typical of modified grassland.
Line of trees	Native and non-native trees planted in distinct lines.
Developed surface	Areas of road, carpark and paths.

1.5. Maps

The maps presented below show the existing habitats at Land off Shrub Lane, Burwash, 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 Classifications map

Figure 2: Condition assessments



1.6. Photographs

Photograph 1: Other neutral grassland (south-west half of site)

Photograph 2: Other neutral grassland (north-east half of site)

Photograph 3: Line of trees

Photograph 4: Line of trees

1.7. Priority habitats

There are no Priority Habitats present at this location. However, the presence of a number of veteran pedunculate oak trees is notable, both for biodiversity and landscape value.

1.8. Biodiversity units

The biodiversity units at Land Shrub Lane, Burwash, based on broad habitat types, are shown in the table below.

Habitat type	Total biodiversity units
Other neutral grassland	5.22
Developed land; sealed surface	0.00
Total habitat units	**5.22**
Linear features type	**Total biodiversity units**
Line of trees	0.42
Total hedgerow units	**0.42**

1.9. Invasive non-native species

No invasive non-native species were recorded at Land off Shrub Lane, Burwash.

1.10. Constraints

Below are detailed some constraints relating to protected and notable species, which should be considered as part of habitat enhancement or creation programmes. 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 hedgerows, dense scrub and trees.
- Presence of reptiles in grassland, woodland and scrub habitats.
- 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 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 Land off Shrub Lane, Burwash, and also measures to provide further opportunities for priority species. Given the habitats within and surrounding the site, and its location within the Rother, Brede and Tillingham Woods BOA, it is suggested that restoration of existing habitats is the main focus.

Opportunities – Habitats

Habitat type	Opportunities
Neutral grassland	This is the dominant habitat type at the site and is currently in moderate condition. There appears to be a gradation of grassland community types through the site from north-east to south-west, with the latter less grass dominated and with a greater variety of herbaceous species. All areas of grassland at the site would benefit from and could be restored by either: • Modifying the mowing regime to vary sward height throughout the grassland (as well as maintaining paths), open up the sward and increase cover of herbaceous species; or • Introducing a combination of a hay cut and aftermath grazing, again with the objective of opening up the sward and increasing cover of herbaceous species. This is the preferred option from a purely biodiversity perspective, but would place limitations on amenity use of the site, both before the hay cut and during grazing. Long-term, an over-seeding programme (preferably using green hay from a nearby nature reserve with a similar habitat type, if available) could be combined with either of the above options to accelerate restoration. Given the existing baseline at the site, in time it may be possible to uplift the neutral grassland in the south-west of the site to Lowland Meadow Habitat of Principal Importance (given nutrient inputs from the trees, this may be less feasible in the north-east). Further botanical survey (undertaken before the grassland is mown) and soil sampling is recommended to inform restoration efforts.
Line of trees	This is clearly an old feature, with the mature/veteran oak and hornbeam trees of particular biodiversity value. Interventions to restore and maintain this habitat should include infill native tree planting to remove canopy gaps and replace lost veteran trees. Coppicing of hornbeam and field maple trees would also increase the longevity of these existing trees. There is scope to extend this habitat by planting a small wood (using the Miyawaki Method; CTF, 2024) in the north-east of the site. This would support wider targets around woodland creation and restoration in the BOA, and help

Habitat type	Opportunities
	to link existing woodland habitats in the local area (see Section 1.4). However, this would need to be balanced with other objectives for the site, including grassland restoration. Woodland planting may become a viable option if grassland restoration in this part of the site does not result in significant uplift in condition.

Opportunities - Species

Species	Opportunities
Invertebrates (saproxylic)	The deadwood and veteran trees at the site already provide multiple opportunities for saproxylic invertebrates. Any further tree works at the site should, where possible, leave all felled wood in situ. The following specific habitat features can be created with felled wood: *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 where possible, on mature trees. Bird boxes with varying entrance hole sizes should be used to provide for a range of species.
Bats	Installation of bat boxes where possible on mature trees.

1.12. Key targets for the short and long term

Short-term targets

Some key targets for upcoming 5 to 10 years:

- Infill tree planting to rejuvenate line of trees;
- Increase number of deadwood features, where opportunities arise;
- Begin restoration of grassland; introduce modified mowing regime to vary sward height and increase species diversity;
- Investigate potential of introducing seasonal grazing.

Long-term targets

Some key targets for long term planning;

- Introduce hay cut and grazing regime to grassland;
- Depending on success of grassland restoration in north-east of site, establish a woodland to reinforce line of trees.

1.13. Further monitoring work/other activities

Specific surveys for protected and priority species could be undertaken for bats and invertebrates, to understand how these species groups use the site. 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.

Soil sampling and further botanical survey 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 The site consists of a grassland field. At the time of the survey visit, the grass had been mown, with limited regrowth of grasses and flowering plants in the sward. Plant species identification was constrained by the mown sward. However, it was apparent that species composition varies between the north-east and south-west ends of the site. The north-east half (beneath the trees) supports a more grass-dominated sward; towards the south-west, forb abundance and diversity are greater, and different grass species are present. The site sits on a gradation of soil types (LANDIS, 2024); the whole area is slightly acidic, but with more loam and clay towards the north. This gradation in soil type, together with leaf fall from the trees over time causing nutrient enrichment in the north-east of the site, could both contribute to the differences in grassland composition observed. Although situated on slightly acid soils, the species compositions present throughout the site are more indicative of a neutral grassland community. **Areas of grassland in the south-west:** Grass species recorded include sweet vernal grass *Anthoxanum odoratum*, perennial rye-grass *Lolium perenne*, crested dog's-tail *Cynosurus cristatus,* red fescue *Festuca rubra* and Yorkshire fog *Holcus lanatus.* Perennial rye-grass is present in low abundance. The sward is relatively open, particularly in some areas, allowing for a diverse range of flowering plants including red clover *Trifolium pratense*, white clover *Trifolium repens*, self-heal *Prunella vulgaris*, bird's-foot trefoil *Lotus corniculatus* and cat's-ear *Hypochaeris radicata.* **Areas of grassland in the north-east, beneath the trees:** The sward is dominated by grasses – perennial rye-grass, crested dog's-tail, creeping bent *Agrostis stolonifera,* meadow foxtail *Alopecurus pratensis*, *Phleum* sp., and red fescue. Fewer forbs were recorded than in the south, and predominantly comprised creeping buttercup *Ranunculus repens,* a species indicative of degradation and/or nutrient enrichment; lesser stitchwort *Stellaria graminea* is also present. The species composition here is one typical of nutrient-enriched soils – this could have occurred over time as a result of leaf-fall from the trees (and a richer under lying soil type; see above).
Condition **g3c – Other neutral grassland** Both grassland types identified are in **moderate condition**. Both are limited by lack of variation in sward height (the grassland had been mown prior to the survey); occurrence of undesirable species in the sward (in the south-west, white clover; in the north-east, creeping buttercup) and low species

Grassland
diversity (fewer than 10 species per 1m^2). However, the grassland in the south-west (average 9 species per 1m^2) is notably more diverse than that in the north-west (average 6 species per 1m^2).

Linear features
UKHabs habitat types present (secondary codes in brackets) **w1g6 – Line of trees**
Description **w1g6 – Line of trees** The north half of the grassland has a line of trees forming a semi-circle around its boundary. The trees are predominantly veteran mature pedunculate oak *Quercus robur*, with hornbeam *Carpinus betulus* and field maple *Acer campestre*. One oak tree had been felled, with the majority of the trunk left in situ in the grassland. The trees over-top grassland for the most part; along the south-east and north-east boundaries of the site, this gives way to an understorey of cleavers *Galium aparine*, bramble *Rubus fruticosus* agg., pendulous sedge *Carex pendula*, grey sedge *Carex divulsa* and cow parsley *Anthriscus sylvestris.*
Condition **w1g6 – Line of trees** Moderate condition. Condition is limited by gaps in canopy cover, and the proximity of this habitat feature to the adjacent hardstanding pavement and road. However, the trees are all native species; there are plenty of veteran features present, particularly in the oak and hornbeam trees; and the trees all appear to be in a healthy condition.

Urban
UKHabs habitat types present (secondary codes in brackets) **u1b – Developed land; sealed surface**
Description **u1b – Developed land; sealed surface** The south-east boundary of the site is bounded by a short stretch of hardstanding, which acts as a parking layby.
Condition **u1b – Developed land; sealed surface:** N/A - Other

1.16. References

Butcher, B., Carey, P., Edmonds, R., Norton, L., & Treweek, J (2020) *The UK Habitat Classification User Manual Version 1.1* http//www.ukhab/org/.

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Natural England (2023a) *Biodiversity Metric 4.0 Calculation Tool*. Natural England: York.

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

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Sussex Biodiversity Partnership (2024). *Biodiversity Opportunity Areas.* https://sussexlnp.org.uk/boa/. Accessed 19/01/2024.

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

1.17. Surveyors

The survey was undertaken by Lydia Ennis ACIEEM. Lydia has six years' experience undertaking habitat surveys and delivering management advice to landowners. The report was written by Lydia and Joe Gillis, Graduate Ecologist, at MKA Ecology Ltd. Joe has a season's experience 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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