MKA ECOLOGY

Rother District Council

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Biodiversity Audit

Land at Goddens Gill, Northiam

Land at Goddens Gill, Northiam

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 at Goddens Gill, 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).

Land at Goddens Gill, Northiam is not currently covered by any nature conservation designations. The Site is less than 100m west of Northiam Site of Scientific Special Interest (SSSI), which is designated for geological rather than ecological features.

There are no Priority Habitats on-site. 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

The Site is situated in the centre of the village of Northiam (central grid reference TQ 82756 25285). It consists of modified grassland, with a small pocket of bramble scrub in the south. There are eleven scattered trees, and a concrete pathway intersects the field in the south. Along the northern boundary is a native hedgerow and line of trees; a native hedgerow is also present in the south leading to the area of bramble scrub. The Site is well-connected to habitats in the wider area, through hedgerow and woodland corridors connecting Weights Wood to the west and Harlot's Wood immediately to the east.

The immediate surroundings are largely residential with some arable fields north and south. A large expanse of Coastal and Floodplain Grazing Marsh (Natural England, 2023c) formed from the River Rother runs 1km north of the Site. Lowland Mixed Deciduous Woodlands, the majority of which are semi-natural ancient woodland, are frequent in the wider landscape, the closest being 200 metres south. A small Traditional Orchard is 1.5km east, and two large areas of Lowland Meadow are situated 1.6km east and 1.1km south.

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

Habitat type	Description
Modified grassland	Frequently managed grasslands found in recreational areas. Species composition is not diverse and the habitat is dominated by vigorous grasses that can withstand trampling and mowing such as perennial rye-grass *Lolium perenne*.
Line of trees	Native and non-native trees planted in distinct lines throughout the park.
Urban trees	Individual and groups trees within the park.
Bramble scrub	Dense scrub dominated by bramble *Rubus fruticosus agg.*
Non-native and ornamental hedgerow	Hedgerows dominated by ornamental, non-native woody species.
Native hedgerows	Dense native, native species-rich hedgerows, and native species-rich hedgerows with trees along boundaries.
Developed surface	Areas of road, carpark and paths.

1.5. Maps

The maps presented below show the existing habitats at Land at Goddens Gill, 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 Habitat Classification map

Figure 2: Condition assessments

1.6. Photographs

Photograph 1: Modified grassland

Photograph 2: Individual urban trees

Photograph 3: Non-native and ornamental hedge

Photograph 4: Urban trees and bramble scrub (background)

Photograph 5: Developed land; sealed surface pathway

Photograph 6: Native hedgerow

1.7. Priority habitats

The following Priority Habitats are present at this location;

- 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 Land at Goddens Gill, Northiam, based on broad habitat types, are shown in the table below.

Habitat type	Total biodiversity units
Modified grassland	1.54
Bramble scrub	0.00
Developed land; sealed surface	0.00
Individual trees	2.44
Total habitat units	**3.98**
Linear features type	**Total biodiversity units**
Line of trees	0.24
Non-native and ornamental hedge	0.06
Native hedgerow	0.36
Total hedgerow units	**0.66**

1.9. Invasive non-native species

No invasive non-native species were recorded at Goddens Gill.

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, bramble scrub and trees.
- Potential use of the habitats onsite by foraging and commuting bats.
- Potential use of the trees 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 Goddens Gill, and also measures to provide further opportunities for priority species.

Opportunities - Habitats

Habitat type	Opportunities
Hedgerows	Infill planting to reduce gaps and increase overall width of the hedge. Removal of undesirable species within the adjacent grassland will also help improve condition of this hedgerow. Infill planting with native species to create a native species-rich hedgerow (which is allocated a higher distinctiveness in the Metric). The quality of the hedgerows will also be improved by reducing the frequency of hedgerow trimming, which will allow hedgerows to establish a width and height above 1 metre, and ideally more. The bases of hedgerows can be improved as habitat niches by leaving a strip of at least 1m on either side of the hedgerows unmown and undisturbed. There is also scope to plant more hedgerows across the site, along the existing boundary and fence lines.
Modified grassland	This habitat is allocated low distinctiveness in the Biodiversity Metric and is currently of limited value for biodiversity, due to lack of botanical and structural variation. The interventions that would contribute most significantly to enhancing this habitat are: • Enhance areas of grassland not used for intensive recreation. Mow the grass less regularly to encourage a more diverse sward structure and range of flowering plants in the sward. The initial aim would be to achieve a 'bee lawn', approximately 5-10cm in height; which could still be used for amenity purposes, but support more flowering plants. • Some supplementary management over-seeding may be required to increase the number of flowering species. The long-term aim would be to enhance these areas to a higher distinctiveness grassland type, such as neutral grassland.
Urban trees	Individual and lines of trees could be connected to linear features elsewhere in the site with further tree planting. Veteranising of existing trees (see Woodland Trust, 2014). Existing trees could be incorporated into woodland planting (see below).

Habitat type	Opportunities
Woodland	There is ample space at this site to create small areas of woodland in place of modified grassland. These could be created using the Miyawaki Method (CTF, 2024), and could use wetland specialist tree species to complement the wetland habitats recommended above, as well as designated intertidal habitats adjacent to the site. • Increase cover of woodland through planting new areas of native woodland on habitats of lower distinctiveness (modified grassland). Extension of woodland could reinforce current treelines, forming a belt of woodland around the site perimeter. • Reinforce tree planting with native scrub planting, to create an understorey layer; and Encourage a more diverse ground flora through re-seeding and planting.

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 where possible, for instance on the mature hawthorn trees and trees within the hedgerow. Bird boxes with varying entrance hole sizes should be used to provide for a range of species.
Amphibians	Creation of a wildlife pond within one of the grassland parcels would add a high value habitat to the existing habitat mosaic, particularly of value to local amphibian populations.
Bats	Installation of bat boxes where possible.
Hedgehog	Hedgehog hibernation boxes may be installed at the bases of the hedgerows, ideally positioned near to species-rich grassland.

1.12. Key targets for the short and long term

Short-term targets

Some key targets for upcoming 5 to 10 years:

- New tree, grassland and scrub planting, together with a management plan;
- Feasibility studies for woodland creation;
- 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;

- Enhance modified grassland to neutral grassland;
- Woodland creation, together with a management plan; and
- Veteranise selected trees where health and safety allows.

1.13. Further monitoring work/other activities

Specific surveys for protected and priority species could be undertaken, especially activity surveys to monitor use of the linear habitat features by bats. These could 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.

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) **g4 – Modified grassland**
Description **g4 – Modified grassland** Covering almost the entire extent of the site, this grassland is under intensive mowing management keeping the sward short at approximately 5cm throughout. The species composition is reflective of this, with perennial rye-grass *Lolium perenne* the only grass species recorded, interspersed with forbs such as daisy *Bellis perennis*, dandelion *Taraxacum sp.*, ribwort plantain *Plantago lanceolata*, and creeping cinquefoil *Potentilla reptans*.
Condition **g4 – Modified grassland** Poor condition due to low species diversity and short sward height.

Hedgerows and lines of trees
UKHabs habitat types present (secondary codes in brackets) **h2a5 – Native hedgerow** **h2b – Non-native and ornamental hedge** **w1g6 – Line of trees**
Description **h2a5 – Native hedgerow** Found in the north and south of the site, both hedgerows (H1 and H3) are short in length (both around 0.03km in length), but have very different structures. H1 is a shorter and narrower hedge compared to H3, being only 1.5-2m tall and 1m wide, although is very dense throughout with no disjunct areas. It consists of sycamore *Acer pseudoplatanus*, bramble *Rubus fruticosus agg.*, blackthorn *Prunus spinosa*, and non-native box honeysuckle *Lonicera nitida.* The ground flora consisted of mallow *Malva sylvestris* dog's mercury *Mercurialis perennis*, meadow buttercup *Ranunculus acris*, and barren brome *Anisantha sterilis*. H3 is a structurally large hedge at 6m in height and 2-3m wide. Field maple *Acer campestre*, rose *Rosa sp.,* cypress *Chamaecyparis lawsoniana*, and hawthorn *Crataegus monogyna* are the main species in this hedge. The ground flora composed of broad-leaved dock *Rumex obtusifolius*, perennial rye-grass, bramble, and garlic mustard *Alliaria petiolata*, reflective of shady conditions.

Hedgerows and lines of trees
h2b – Non-native and ornamental hedge Ornamental hedge (H2) 3m high and 1m wide separating the site from a residential garden, composed of cherry laurel *Prunus laurocerasus*, cypress, elder *Sambucus nigra*, and privet *Ligustrum sp*. **w1g6 – Line of trees** This tree line runs along the northern boundary of the site, and is composed of whitebeam *Sorbus sp.* and lime *Tilia x europaea* trees.
Condition **h2a7 – Native hedgerow – H1 and H2** Good condition. Passes all condition criteria apart from criteria C1, due to the regular and intensive management of the adjacent grassland to the south, and the presence of residential properties to the north. **h2b – Non-native and ornamental hedge – H3** This habitat type is automatically allocated poor condition. **w1g6 – Line of trees** In moderate condition. Passes all criteria relating to continuous tree canopy and tree health. Condition is limited by the absence of undisturbed naturally-vegetated strip of at least 6m on both sides of the trees, due to their setting within a publicly accessible park.

Scrub
UKHabs habitat types present (secondary codes in brackets) **h3d – Bramble scrub**
Description **h3d – Bramble scrub** A very small pocket of bramble scrub in the south of the site.
Condition **h3d – Bramble scrub:** N/A – Other (no condition assessment for this habitat type)

Urban
UKHabs habitat types present (secondary codes in brackets) **u1b – Developed land; sealed surface**

Urban
Description **u1b – Developed land; sealed surface** A linear concrete pathway cutting through the grassland field connecting two residential roads acting as a pedestrian cut-through and access to the field space.
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/.

CTF (2024) Creating Tomorrow's Forests: The Miyawaki Method for Creating Forests. https://www.creatingtomorrowsforests.co.uk/blog/the-miyawaki-method-for-creating-forests. Accessed 26/01/2024.

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.

Natural England (2023c) Priority Habitats Inventory (England) Available at: https://www.data.gov.uk/dataset/4b6ddab7-6c0f-4407-946e-d6499f19fcde/priority-habitats-inventory-england. Downloaded 30/10/2023.

Natural England (2023d) Ancient Woodland Inventory (England) Available at: https://naturalengland-defra.opendata.arcgis.com/datasets/ancient-woodland-england/explore. Downloaded 30/10/2023.

PTES (2016) *Build a log pile for stag beetles.* People's Trust for Endangered Species (PTES). Available at https://ptes.org/wp-content/uploads/2016/11/Build-a-log-pile-for-stag-beetles.pdf

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.

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 eight years' experience undertaking habitat surveys. The report was written by Rory and 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:

- 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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