CSA environmental

The Nash, Nutbourne

Biodiversity Net Gain Baseline Assessment

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CONTENTS

		Page
1.0	**Introduction**	**1**
2.0	**Planning Policy and Legislation**	**2**
3.0	**Biodiversity Net Gain: Good Practice Principles**	**3**
	Biodiversity Net Gain	3
	Good Practice Principles	3
4.0	**Methods**	**5**
	Desk Study	5
	Field Survey	6
	Limitations	7
	Condition Assessment	7
	Calculation of Biodiversity Units	8
	Strategic Significance	8
	Spatial Risk	8
	Trading Summary	9
	Assumptions and Limitations	9
5.0	**Baseline ecological conditions**	**10**
	Nature Conservation Designations	10
	Irreplaceable / Notable Habitats	11
	Floral and Faunal Records	11
	Strategic Significance	13
	Spatial Location	13
	Existing Habitats	14
	Biodiversity Unit Calculations	22
6.0	**Discussion**	**27**
7.0	**References**	**28**

Appendices

Appendix A- Habitats Plan (CSA/6555/100)

Appendix B- Habitat Condition Assessment Sheets & Species List

Appendix C- Desk Study information

Appendix D- Photo sheet

1.0 INTRODUCTION

1.1 This report has been prepared by CSA Environmental on behalf of Lee Goossens. It sets out the findings of a Biodiversity Net Gain Baseline Assessment (undertaken using Biodiversity Metric 4.0) and aims to outline the baseline biodiversity units of land at The Nash, Nutbourne (hereafter 'the Site'), where potential for the creation of a 'Habitat Bank' / Biodiversity Offset site is being considered.

1.2 The Site occupies an area of c. 7.82ha and is located around central grid reference TQ 06996 19337, to the north-west of Nutbourne. Habitats within the area surveyed comprise other neutral grassland and modified grassland fields, parcels of mixed and bramble scrub and associated boundary lines of native trees and hedgerows (see Habitats Plan in Appendix A).

1.3 This Assessment has been informed by a UK Habitat Classification Survey and habitat condition assessments undertaken in May 2023. Whilst this is outside the optimal period for grassland survey, the results provided herein are considered to provide an indicative assessment of grassland type and condition.

1.4 Calculation of biodiversity net gain units has been undertaken using the Natural England Biodiversity Metric 4.0 (April 2023); and follows guidance set out within the Biodiversity Net Gain: Good practice principles for development (Baker *et al.*, 2019).

1.5 This BNG Baseline Assessment aims to:

- Provide baseline data to classify the type, distinctiveness, condition, connectivity and strategic significance of habitats present.
- Ensure that baseline habitat conditions are classified in a robust and consistent manner, and that classification is based on the best data available data at the time of assessment.
- Clearly identify data collection methods and any limitations.
- Calculate baseline habitat units and hedgerows units for the Site and explore potential habitat creation and enhancement opportunities.
- Propose possible Biodiversity Net Gain design measures with the aim of maximising biodiversity net gain through habitat creation, enhancement and succession.

2.0 PLANNING POLICY AND LEGISLATION

2.1 The National Planning Policy Framework (NPPF3) (Ministry of Housing, Communities and Local Government, 2019) sets out requirements for the delivery of biodiversity net gain, and this is supported within Planning Policy Guidance (PPG) (updated July 2021). The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular the PPG promotes the delivery of **measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.**

2.2 The Government confirmed the intention to mandate Biodiversity Net Gain at a minimum of 10%, with this requirement being set out within the Environment Act 2021. Whilst the Act was adopted as UK law in November 2021, secondary legislation will be necessary to require biodiversity net gain to be a condition of planning permission, with a two-year implementation period being anticipated from that point. However, in light of this forthcoming legislation, many Local Planning Authorities have started to include biodiversity net gain requirements in Local Plan Policy.

2.3 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Practice Guidance (PPG). That relating to the protection and enhancement of the Natural Environment was most recently updated in August 2021. The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular the PPG promotes the delivery of measurable biodiversity net gain through the creation and enhancement of habitats alongside development.

3.0 BIODIVERSITY NET GAIN: GOOD PRACTICE PRINCIPLES

Biodiversity Net Gain

3.1 Biodiversity net gain has been defined as 'development that leaves biodiversity in a better state than before, and an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation' (Baker, 2016).

Good Practice Principles

3.2 Good practice principles for biodiversity net gain are set out within Table 1.1 of Biodiversity Net Gain: Good practice principles for development (Baker *et al*., 2019). Key principles include:

- Apply the 'Mitigation Hierarchy' (in line with CIEEM Guidelines for Ecological Impact Assessment (EcIA) (CIEEM, 2018) and be 'additional' by achieving outcomes that exceed existing obligations.
- Avoid losing biodiversity which cannot be off-set elsewhere (e.g. irreplaceable habitats).
- Be inclusive and equitable (e.g. engage and involve stakeholders in the design, implementation, monitoring and evaluation of the approach to Net Gain.
- Address risk (e.g. difficulty of achieving habitat creation/enhancement for net gain).
- Make a 'measurable' net gain contribution (e.g. calculated using an appropriate metric) and ensure that calculations consistent and transparent (i.e. limitations and assumptions are clearly identified).
- Ensure that net gain design achieves the best outcome for biodiversity (this may require both quantitative and qualitative assessment) and create a net gain legacy for long-term benefits.
- Be additional, i.e. achieve nature conservation outcomes that demonstrably exceed existing obligations.
- Create a Net Gain legacy, i.e. ensure long-term benefits by agreeing practical solutions to secure Net Gain perpetuity, plan for adaptive and long-term management, designing Net Gain to be resilient to external factors (e.g. climate change), mitigating risk from other land uses and avoiding displacing harmful activities from one location to another.

- Optimise sustainability by prioritising Biodiversity Net Gain and, where possible, optimise the wider environmental benefits of a sustainable society and economy
- Be transparent, i.e. communicate all Net Gain activities in a transparent and timely manner.

4.0 METHODS

Desk Study

4.1 An ecological desk study was undertaken in May 2023 comprising a review of online resources and biological records centre data as detailed below.

4.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify nature conservation designations within the following search radii:

- Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 5km of the Site (including possible/proposed sites)
- Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 1km of the Site
- Other relevant data e.g. S41 Priority Habitats, Natural England Habitat Network Enhancement Zones and the Ancient Woodland Inventory within 1km of the Site

4.3 A review was undertaken of the location of any such designations, their distance from and connectivity with the Site, and the reasons for their designation. This information was used to determine whether they may be within the proposed development's Zone of Influence (ZoI).

4.4 Sussex Biological Records Centre (SxBRC) was contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 1km of its central grid reference. This search area was selected to include the likely zone of influence upon non-statutory designations and protected or notable habitats and species.

4.5 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.

4.6 Existing habitat survey information for the Site contained within the Initial Rewilding Report and Phase One Habitat Survey and Fixed-Point Photography Report (Richard Godbehere June 2022), was also reviewed and taken into account when assessing the type and condition of the habitats present. These reports sets out the findings of a Phase 1 Habitat Survey undertaken in July 2022.

4.7 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

Field Survey

4.8 A UK Habitat Classification survey ('UKHab') of the Site was undertaken by Clare Caudwell CEcol MCIEEM (FISC[1] Level 4) and Lydia Galbraith (FISC Level 3) on 02 May 2023. The UK Habitat Classification survey was undertaken in fine and dry weather conditions and encompassed the Site and immediately adjacent habitats that could be viewed. Habitat type and condition were recorded and mapped in line with the UK Habitat Classification survey methodology (UK Hab; Butcher *et al.*, 2020). A Habitats Plan (CSA/6555/100) showing the baseline habitat parcels is provided in Appendix A.

4.9 UKHab is a unified and comprehensive system for mapping and classifying habitats, designed to provide a simple and robust approach to surveying and monitoring, and replaces Phase 1 Habitat survey methods. The method allows for identification of important habitat types, including habitats of Principal Importance under Section 41 (S41) of the NERC Act (2006) and Habitats Directive Annex I habitats. This method also allows for direct translation of habitats into the current Biodiversity Metric (Natural England, version 4.0).

4.10 The following parameters were adopted for the UKHab survey undertaken for this Assessment:

- UKHab Professional edition (Butcher *et al.*, 2020, commercial End User Licence Agreement (EULA))
- Minimum Mappable Unit (MMU):
    - $10m^2$/0.001ha (polygons)
    - 5m (linear)
- Primary Habitats recorded to a minimum of Level 2 (see below) with UKHab codes provided
- Mandatory secondary codes used
- Base-mapping comprising a combination of aerial imagery and topographic information

4.11 Primary Habitats are recorded to a minimum of Level 2. Where the survey is conducted at an appropriate time of year (e.g. May to July for grassland) habitats may be recorded to Level 3, 4 or 5, only if conditions and the experience of the surveyor allow.

4.12 To assist with classification of grassland habitats quadrat samples were taken during UKHab survey. Representative sample locations were identified within each grassland parcel, spread evenly to avoid habitat transitions or ecotones, following a 'W' shape through the parcel and a covering a minimum of five sampling locations. Both average (mean) species count per m^2 and peak species counts are reported for comparison.

[1] Field Identification Skills Certificate, Botanical Society of Britain and Ireland

4.13 Identification of habitat stands were made arbitrarily by the surveyor based upon obvious habitat structure, composition or other delineating feature (e.g. field or enclosure).

4.14 Quadrats of 1m x 1m were used, repeated four times in each sample location (i.e. 2m x 2m or 4m2). This technique assists, for example, with distinguishing between modified (g4) and other neutral (g3c) grasslands (using the threshold of nine species per m2, reporting an average of the four samples) and of lowland meadows (g3a) (using the threshold of 35 species per 2m x 2m samples).

4.15 Alongside the UKHab survey, additional field survey information was collected, comprising:

- Detailed floral species lists recorded for each identified habitat/parcel
- Further habitat condition information based upon current Biodiversity Metric (Natural England, version 4.0) condition assessment guidance
- Evidence of, or potential for, European Protected Species (EPS) and/or other UK protected species
- Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- Any other survey information relevant to ecological matters

4.16 Results of the UKHab survey are presented on the Habitats Plan in Appendix A. Appendix D provides photographs of the habitats at the Site and Appendix B provides a list of floral species recorded in each habitat parcel. Nomenclature for higher plants within this report is consistent with the fourth edition of The New Flora of the British Isles (Stace, 2019).

Limitations

4.17 There were no specific limitations to the desk study or field survey, which was conducted at a suitable time of year for habitat survey and in good conditions. Whilst field survey was undertaken outside the optimal period for grassland survey (typically June-July), the results provided herein are considered to provide an indicative assessment of grassland type and condition.

Condition Assessment

4.18 A high-level assessment of 'habitat condition' was also undertaken, although it should be noted that the accuracy of this assessment was somewhat constrained by the time of year in relation to grassland (as outline above). Further discussion is provided within the 'Assumptions and Limitations' section herein.

4.19 Habitat condition was assigned following guidance from the 'Technical Supplement' document (Natural England, 2023) which accompanies the Biodiversity Metric 4.0. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat present. Habitat Condition Assessment Sheets are provided in Appendix B.

Calculation of Biodiversity Units

4.20 The Biodiversity Metric 4.0 (April 2023) was used to calculate the potential change in biodiversity units (including habitat units and hedgerow units) if the site were to be used as a 'Habitat Bank' and the overall percentage of gain that could feasibly be achieved. Metric calculations have been reviewed by Clare Caudwell CEcol MCIEEM who has completed the 'Calculating and Using Biodiversity Units with Metric 2.0 CIEEM Training Course' (December, 2019) and has completed numerous net gain assessments using iterations of the Metrics v2.0 to v4.0.

4.21 Pre-development baseline and proposed habitat areas were measured as distinct habitat parcels. Habitat parcels were measured using habitat mapping and aerial imagery overlain in QGIS.

4.22 The baseline habitat areas were calculated using measurements taken from information gathered during the site visit and using aerial photography where appropriate. Hedgerows and tree lines were included as linear habitats only (as per the Metric requirements).

4.23 Habitat condition for created habitats was assigned taking a precautionary approach and with consideration of biotic conditions (i.e. those which may limit the extent to which 'good' condition is likely to be reached). A full copy of the Biodiversity Metric 4.0 calculator should be read in conjunction with this report and is available upon request.

Strategic Significance

4.24 This criteria within the Biodiversity Metric 4.0 was assessed by determining if habitat areas within the Site occur within any strategic locations for biodiversity, form part of a designated site for nature conservation or are identified within local plans such as Biodiversity Opportunity Areas and Ecological Networks (MAGIC) and/or Natura conservation designations.

Spatial Risk

4.25 When proposing off-site solutions for BNG (i.e. use of a 'Habitat Bank' / biodiversity offset), the Metric applies a 'spatial risk multiplier'. The multiplier is based on whether the offset land is located within the same Local Planning Authority (LPA) or National Character Area (NCA) as the development site, or is "*deemed to be sufficiently local, to the site of biodiversity loss*".

Trading Summary

4.26 'Trading Up' is a concept which requires 'conserving through offset components of biodiversity that are of a higher conservation priority (for example because they are more irreplaceable and vulnerable) than those affected by the development project for which the offset is envisaged' (BBOP, 2018). For example, should non-irreplaceable habitats be lost / impacted as a result of proposed development, offsets should be achieved through the creation/enhancement of habitat of the same or higher distinctiveness, where environmental conditions are appropriate and where it generates the greatest benefits for biodiversity. Trading has been considered during the design stage.

Assumptions and Limitations

4.27 It should be noted that the accuracy of habitat area measurement is limited by the form of baseline data collection and resolution of development proposal plans. In this instance baseline habitat areas have been calculated by cross referencing illustrative Habitats Plans with aerial imagery. Areas of habitat creation and enhancement have been informed by discussions with the landowner and taking into consideration local biotic conditions. In the absence of detailed plans, reasonable assumptions have been made with regards to the type and condition of habitats that could be created.

4.28 The condition of baseline habitats has been informed by a habitat survey undertaken at the beginning of May 2023. Early May survey is outside of the optimal period for botanical survey of grasslands. Given the dominance of grassland habitat at the Site's it is considered that an update survey should be completed for grassland area between June and July to confirm the indicative habitat type and condition assessments, presented herein, to ensure the accuracy of the baseline habitat assessment.

4.29 Recommendations for potential habitat enhancement and creation measures which could be delivered as part of a proposed 'Habitat Bank' / biodiversity offset scheme, will be subject to ongoing appropriate management to ensure that they reach the allocated target condition within the required timeframe. It is assumed that all habitats (retained, enhanced or created) will be maintained for a period of 30 years, in line with requirements of the Environment Act 2021. A Management Plan will would need to be produced, setting out how management actions will deliver habitat enhancement / creation measures which meet the relevant criteria the delivery of Biodiversity Net Gain Units.

4.30 Full justification for the habitat types selected (baseline and proposed) are detailed herein.

5.0 BASELINE ECOLOGICAL CONDITIONS

Nature Conservation Designations

5.1 There are no statutory or non-statutory designations covering any part of the Site.

5.2 Two international statutory designations were identified within 5km of the Site, including Arun Valley Ramsar, SAC and SPA (c. 1.4km south-west of the Site) and The Mens SAC (c. 4.9km north-west of the Site).

5.3 One national statutory designation was identified within 1km of the Site. This was Marehill Quarry SSSI (c. 0.6km south-west of the Site). This Site is also designed as a Local Geological Site (LGS) and is partially managed as a Sussex Wildlife Trust Reserve. The SSSI / LGS designations relate to the sites geological interest, however the cave systems created by the former quarrying use support winter hibernation roosts for a range of bat species including Natterer's, Whiskered *Myotis nattereri* and Daubenton's *Myotis daubentonii*.

5.4 These designations are described in Table 1 below.

Table 1. Statutory and Non-Statutory Designations within search radii

Site Name & Designation	Distance & Direction from Survey Area	Special Interests or Qualifying Features
International Designations within 10km		
Arun Valley Ramsar	c. 0.6km south-west	Wet meadows on the floodplain of the River Arun between Pulborough and Amberley. The area is of outstanding ornithological importance for wintering wildfowl and breeding waders. The Site holds several British Red Data Book invertebrates and Nationally rare and scare plant species.
Arun Valley SAC	c. 0.6km south-west	Wet meadows on the floodplain of the River Arun between Pulborough and Amberley. Designated for being one of the three main population centres of Ramshorn snail *Anisus vorticulus*.
Arun Valley SPA	c. 0.6km south-west	Wet meadows on the floodplain of the River Arun between Pulborough and Amberley. Designated for regular use by 1% of more of the Great Britain population of Annex 1 Bewick's Swan *Cygnus columbianus bewickii.*
The Mens SAC	c. 4.9km north-west	Mature beech woodland, classified as Annex 1 habitat Atlantic acidophilous beech forest with Ilex and sometimes Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion).

National Designations within 1km		
Marehill Quarry SSSI	c. 0.6km south-east	Designated for historical and stratigraphic interest, managed by Sussex Wildlife Trust
Non-Statutory Designations within 1km		
Marehill Quarry LGS	c. 0.6km south-west	Designated for historical and stratigraphic interest, managed by Sussex Wildlife Trust

Irreplaceable / Notable Habitats

Ancient Woodland / Trees

5.5 There is no ancient woodland, as shown on the ancient woodland inventory, covering any part of the Site or immediately adjacent land.

5.6 Two parcels of Ancient Woodland are present within 1km of the Site, these include an unnamed parcel of woodland c. 600m to the east, and another parcel c. 800m north of the Site.

5.7 No trees on or adjacent to Site are listed on the Ancient Tree Inventory.

S41 Priority Habitats

5.8 Three Section 41 Priority Habitats are present within 1km of the Site, including Good Quality Semi-Improved Grassland, Traditional Orchard and Deciduous Woodland, the closest of which is a parcel of Tradition Orchard that abuts the Site to the south.

5.9 Within the wider landscape, a number of additional S41 Habitats are present, including further parcels of Deciduous Woodland and additionally Coastal and Floodplain Grazing Marsh (largely associated with the River Arun floodplain c. 1.2km to the south-west of the Site), Heathland and Lowland Fen (associated with Hurston Warren SSSI c.1.7km south of the Site). A S41 Priority Habitats and Ancient Woodland map is shown in Appendix C.

Floral and Faunal Records

Notable Flora Records

5.10 The SxBRC provided 45 records of 27 notable plant species from within the search area between 1905 and 2020.

5.11 Those of potential relevance to the Site are summarised in Table 2 below. Whilst only native bluebell *Hyacinthoides non-scripta* was noted on Site, it is considered possible that the Site / surrounding landscape could support the following species.

Table 2. Relevant notable flora data search

Common name	Taxon name	Latest record date	Proximity to site	Status
Bluebell	*Hyacinthoides non-scripta*	2009	c. 230m	WCA Sch8

Green winged orchid	*Anacamptis morio*	2008	c. 690m	RedList GB post2001 NT, RedList ENG post2001 VU
Cornflower	*Centaurea cyanus*	2004	c. 270m	UK BAP Priority, Sussex Rare
Crosswort	*Cruciata laevipes*	2010	c.600m	RedList ENG post2001 NT
Wild strawberry	*Fragaria vesca*	2008	c. 290m	RedList ENG post2001 NT
Aggregate-headed hawkweed	*Hieracium aggregatum*	2011	c. 290m	Nationally Rare
Field scabious	*Knautia arvensis*	2004	c. 290m	RedList ENG post2001 NT
Lesser spearwort	*Ranunculus flammula*	2010	c. 290m	RedList ENG post2001 VU
Common valerian	*Valeriana officinalis*	2011	c.290m	RedList ENG post2001 NT
Opposite leaved pondweed	*Groenlandia densa*	2011	c. 630m	RedList GB post2001 VU, RedList ENG post2001 VU, Sussex Rare
Fringed water lily	*Nymphoides peltata*	2006	c. 680m	Nationally Scarce
Ivy-leaved crowsfoot	*Ranunculus hederaceus*	2004	c. 290	Sussex Rare

Notable Faunal Records

5.12 The SxBRC provided 517 records of 62 notable fauna species from within the search area. Protected / notable species records comprises bats (at least 10 species), four mammal species, 40 bird species, two reptile species, one amphibian species, five invertebrate species.

5.13 The potential for protected / notable species to be present should be considered as part of any proposed land use / management changes. It was noted during the field survey that a large badger sett is present on the southern boundary of F3, with outlier setts on the western and northern boundaries. The Protection of Badgers Act 1992 affords badgers and setts protection; as such any land use changes to seek to buffer and retain sett features. The timing of proposed management work should also take account of potential impacts to nesting birds (likely to be nesting within hedgerow / scrub features between March-August) and reptiles (potentially present within rough grassland areas on embankments / unmanaged scrub / grassland), which are afforded

protection under provisions of The Wildlife and Countryside Act 1981 (as amended).

5.14 It is considered the open and agriculturally improved habitats present generally offer some limited opportunities for local wildlife at present, but that with habitat enhancement and creation works that significant improvements could be made in terms of habitat diversity and connectivity.

Strategic Significance

5.15 The Site is not within a Biodiversity Opportunity Area (BOA). The Parham to Fittleworth BOA is c. 1.3km south-west of the Site.

5.16 The Site is not located within the South Downs National Park (SDNP), but the boundary is located c. 0.9km south-west of the Site. The SDNP comprises a range of habitats including chalk grassland, scrub, mixed woodland and ancient yew forest, and extends from Winchester in the west to Eastbourne in the east.

5.17 The Site is located within Ecological Network Enhancement Zone 1 (Natural England, 2020) (see Appendix C for Network Enhancement Zone map). The Network Enhancement Zone 1 identifies potential locations to consider improving the links and reducing fragmentation at a wider landscape scale, connecting existing patches of 'primary' and 'associated' habitats. Zone 1 is land targeted as areas that are likely to be suitable to join up existing habitat patches and improve habitat connectivity.

5.18 Areas of Network Enhancement Zone 2 are present within 1km of the Site, and are areas less likely to be suitable for the creation of primary habitat.

5.19 Other habitats from the National Habitat Network within 1km of the Site include 'primary habitats' Ancient Woodland, and 'associated habitats' Traditional Orchard. As such, it may be appropriate to target the creation of such habitats and associated supporting habitats, with the aim of promoting habitat linkages / 'stepping-stones' between priority habitat areas.

5.20 As such, whilst the Site is not located within an area 'formerly identified within a local strategy' it is considered to be located within a location which is 'ecologically desirable but not within a local strategy' and therefore has a moderate weighting for strategic significance within the Metric.

Spatial Location

5.21 The Site is located within Horsham District Council LPA and the 'Wealden Greensand' Natural Character Area (NCA). The Wealden Greensand

NCA spans from Surrey to Kent parallel the North Downs, and from Hampshire to West Sussex parallel to the South Downs. Around a quarter of the NCA is made up of extensive belts of woodland, with contrasting more open areas of heath on acidic soils, river valleys and mixed farming (including fruit growing). In West Sussex, much the NCA comprises parts of the SDNP; and is bordered to the south by the South Downs NCA and the Low Weald NCA to the north. The landscape and geology within this part of the NCA is characterised by sandstone ridges, scarp slows and rounded clay vales containing river valleys (e.g. River Arun). Land uses include a mixture of small pasture fields, as well as larger more regular field patterns on larger farms. Soils range from light sandy soils on higher ground to more fertile ground within river valleys, with a wide variation in soil acidity and ferity across the NCA (Natural England, 2013). 'Environmental Opportunities' identified for the Wealden Green NCA of relevance to biodiversity net gain include SEO 2 '*Protect, manage and significantly enhance the mosaic and connectivity of semi-natural habitats within the mixed farming landscape'.. for the benefit of biodiversity..'*.

Existing Habitats

5.22 Habitats recorded on-site are illustrated in Appendix A with detailed species lists provided in Appendix B. Relevant UKHab codes are provided within parentheses for each habitat type recorded [e.g. Other Neutral Grassland (g3c)]. For details of Habitat Condition Assessment criteria see Appendix B.

5.23 The Site is dominated by infrequently managed grassland fields, with marginal areas of tall ruderals and dense scrub. Native hedgerows and lines of native trees are present on the eastern, southern and western boundaries, with an exposed boundary to the north. A former horse mènage is located within field F2, which is located adjacent to an area of hard-standing and agricultural barns (outside the survey area). The Site is set on a roughly south facing slope with sandy subsoils, with long range views to the Arun Valley and South Downs beyond. Neighbouring land-use is dominated by sheep grazed pasture, with a remnant traditional orchard adjacent in the field to the south.

5.24 Previous land management has comprised grazing, by cattle, horses and alpaca. It is understood that this grazing management ceased a few years ago and little management (bar the cutting of access paths / occasional topping of the main fields) has been undertaken since. The grassland swards show signs of nutrient enrichment, owing to the dominance if coarse grasses and lush herb-poor swards (particularly within F2-F4).

5.25 Grassland habitats were previously recorded as 'poor semi-improved grassland' under the Phase 1 Habitat methodology within the Phase 1

Habitat Survey and Fixed Point Photography report (Richard Godbehere 2022), and were dominated by Yorkshire fog *Holcus lanatus*, creeping soft grass *Holcus mollis* and timothy grass *Phleum pratense*, as well as a number of other palatable grass species. The dominance of coarse grasses was considered to indicate previous improvement for grazing. The presence of other coarse grasses (e.g. cocks foot *Dactylis glomeratea*, soft brome *Bromus hordeaceus* and false oat grass *Arrhenatherum elatius*) is indicative of lack of management on fairly fertile soils. However, some finer grass species (e.g. red fescue *Festuca rubra* and sweet vernal grass *Anthoxantum odoratum*) were noted more locally. The widespread presence of tall ruderal species was noted, including undesirable species such as docks, thistles and nettles (all indicators of relatively high levels of fertility). Forbs were noted to be scarce and mainly distributed at field edges, species recorded include greater stitchwort *Stellaria holostea*, bird's-foot trefoil *Lotus corniculatus*, musk mallow *Malva moschata* and oxeye daisy *Leaucanthemum vulgare*.

Other neutral grassland *(g3c)*

5.26 Field F1 is a small paddock area, previously grazed under livestock (horse and alpaca) but at present displays a varied and tussocky sward. A range of fine leaved and coarse grasses were recorded, dominated by Yorkshire fog and smooth meadow grass *Poa pratensis*, with sweet vernal grass, meadow foxtail *Alopecurus pratensis*, red fescue and cock's foot also present. A number of undesirable species[2] are present within the sward, although at relatively low incidence, including common nettle *Urtica dioica*, creeping thistle *Cirsium arvense*, creeping buttercup *Ranunculus repens*, broadleaved dock *Rumex obtusifolius*, curled dock *Rumex crispus* and white clover *Trifolium repens*. Other herbaceous species include meadow buttercup *Ranunculs acris*, bulbous buttercup *Ranuculus bulbosus*, yarrow *Achillea millefolium*, common sorrel *Rumex acestosa*, common vetch *Vicia sativa*, ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum sp*., ivy-leaved speedwell *Veronica hederifolia*, common knapweed *Centaurea nigra* and common centaury *Centaurium erythraea*. Field F1 displayed 6.5 sp/m^2 in the quadrat sampling.

Condition Assessment

5.27 Grassland within F1 was assessed as passing 5 out of 6 criteria for 'medium' distinctiveness grassland; failing on the presence of >10sp/m^2, which is the essential criterion to achieve 'good' condition. This field has therefore been assessed to be in '**moderate**' condition. However as stated in the Assumptions and Limitations section above, this survey was conducted outside of the optimum time for grassland botanical surveys, and therefore this criteria could feasibly be achieved during the optimal botanical surveying period for grassland. For this reason, two scenarios

[2] See Footnote 2 in 'medium' distinctiveness grassland habitat HCA

are presented within the Metric 4.0 calculation and summarised in Table 2 below, with 'Scenario 1' relating to a baseline of other neutral grassland in 'moderate' condition, and 'Scenario 2' relating to a baseline of other neutral grassland in 'good' condition.

Other neutral grassland *(g3c), tall herb (16)*

5.28 Two parcels of grassland dominated by tall ruderal occur within field F2, along the eastern field margin and eastern facing bank around the manège. These areas did not appear to be under management at the time of survey.

5.29 These areas of tall ruderal have been classified as 'other neutral grassland' under the UKHabs methodology, with a secondary code of 'tall herb', are present within Field F2. The first situated on the south-west facing bank (TR1), and consists of common nettle, broadleaved dock, creeping thistle and Yorkshire fog. The second parcel (TR2), to the east of F2 has a similar composition, with the addition of cleavers *Galium apraine*, spear thistle *Cirsium vulgare*, dandelion and white clover.

Condition Assessment

5.30 These parcels of tall ruderal within Field F2 have been assessed to be in '**poor**' condition, in line with the Biodiversity Metric guidance.

Modified grassland *(g4)*

5.31 The rest of the Site is dominated by modified grassland, present in Fields F2, F3, F3a (south facing bank on northern boundary of F3) and F4. Historically these fields were managed by cattle, horse and alpaca, and display signs of nutrient input. More recently, these areas have been rarely managed, with infrequent topping and maintenance of mown pathways which allow access across the Site.

5.32 Field F2 includes areas of mown paths and longer, less managed grassland in the north and on the banks leading to the manége (see Target Note 6 on Habitats Plan). Whilst the species composition is fairly similar throughout, the shorter mown grassland is more abundant in perennial rye grass and smooth meadow grass with some cock's foot, whilst the longer grassland is more abundant in Yorkshire fog and red fescue. Some undesirables[3] are present within the sward, although not at high incidences, including common nettle, creeping thistle, creeping buttercup, broadleaved dock, curled dock and white clover. Other herbaceous species include cut-leaved cranesbill *Geranium dissectum*, red deadnettle *Lamium purpureum*, spear thistle, common ragwort *Jacobaea vulgaris*, common vetch, yarrow, ribwort plantain, common cat's-ear *Hypochaeris radicata* and a localised patch of field madder *Sherardia arvensis*.

[3] See Footnote 1 in 'low' distinctiveness grassland habitat HCA

5.33 Fields F3 and F4 are similar in grassland composition, abundant in Yorkshire fog and soft brome, with occasional meadow foxtail, annual meadow grass *Poa annua* and red fescue, and localised areas of sweet vernal grass (towards the south end of the field bottom of the slope), larger / coarser grasses such as oat grass sp *Arrhenatherum sp*. and meadow fescue *Festuca pratensis* towards the north part of the site (top of slope). Herbaceous species include chickweed, common mouse ear *Cerastium fontanum*, creeping buttercup, creeping thistle, curled dock and dandelion.

5.34 Other forb species recorded rarely to occasionally included yarrow, common vetch, hedge cranesbill *Geranium pyrenaecium*, red campion *Silene dioica*, bird's-foot trefoil and common nettle within Field F3, and cut-leaved cranesbill, meadow buttercup and broadleaved dock within field F4.

5.35 F3a is located on the steep and south-facing bank on the northern boundary of Field F3. Grassland species include cock's foot, giant fescue *Schedonorus giganeus*, barren brome *Anisantha sterilis*, oat grass sp. and red fescue. Herbaceous species included cleavers, creeping buttercup, sow thistle *Sonchus sp*., common sorrel, foxglove *Digitalis digitalis* and curled dock.

5.36 Quadrat sampling indicated an average of 5.9sp/m^2 in F2, 5.5sp/m^2 in F3, 5.4sp/m^2 in F3a and 5.75sp/m^2 in F4. In line with the UKHab habitat descriptions, Fields F3, F3a and F4 have been categorised as 'modified' grassland due to the habitat consisting over >75% grass species. Typically modified grassland is characterised by an abundance of Rye-grass *Lolium sp*. whilst other neutral grassland is defined as has <30% cover. Whilst the grass sward is dominated by coarse grasses including Yorkshire fog, cock's-foot and meadow grass *Poa sp.* indicative of agricultural improvement / high nutrient content, perennial rye grass *Lolium perenne* is present, although not abundant. However, given the former management of the grassland, occurrence of other coarse grass species and relative lack of forb species, it is considered that the grassland is best descried as 'modified' rather than 'other neutral'.

Condition Assessment

5.37 Fields F2 and F4 passed six out of seven criteria for 'low' distinctiveness grassland, failing on the presence of 6-9sp/m^2, which is the essential criterion to achieve 'good' or 'moderate' condition. These grasslands have therefore been assessed to be in '**poor**' condition.

5.38 Fields F3 and F3a passed five out of seven criteria, also failing on the presence of 6-9sp/m^2, as well as the presence of a varied sward height. These grasslands have therefore been assessed to be in '**poor**' condition.

5.39 However, as stated in the Assumptions and Limitations section above, these surveys were conducted outside of the optimum time for grassland

botanical surveys, and therefore the essential criteria needed for 'good' or 'moderate' condition could feasibly be achieved during the optimal botanical surveying period for grassland (summer). For this reason, two scenarios are presented within the Metric 4.0 calculation and summarised in Table 1 below, with 'Scenario 1' relating to a baseline of modified grassland in 'poor' condition, and 'Scenario 2' relating to a baseline of modified grassland in 'good' condition.

Scrub habitat *(h3)*

Mixed scrub (h3h)

5.40 There is a parcel of mixed scrub on the boundary between F1 and F2, consisting of bramble *Rubus fruticosus* and elder *Sambucus nigra*.

Bramble scrub (h3d)

5.41 There is an area of bramble scrub along the northern boundary of Field F2.

Condition Assessment

5.42 Mixed scrub areas passed two out of five criteria for the scrub condition assessment, failing on the presence of more than three woody species, the presence of all age classes and the presence of clearings and glades, and has therefore been assessed to be in '**poor**' condition.

5.43 Bramble scrub habitats are not given a condition score within the habitat condition assessment.

Artificial, unsealed surface *(u1c)*

5.44 A manége is present within Field F2 and is sunken c. 2m below the grassland level (see Target Note 6 on Habitats Plan).

5.45 Artificial, unsealed surface habitats are not given a condition score within the habitat condition assessment.

5.46 A summary table of baseline habitats and baseline units is provided in Table 3 below.

Table 3. Baseline habitat summary

Habitat Parcel	UKHab habitat	BNG habitat	Scenario 1		Scenario 2	
			Condition	Baseline units	Condition	Baseline units
F1	Other neutral grassland (g3c)	Grassland-Other neutral grassland	Moderate	4.75	Moderate	7.13
TR1	Other neutral grassland (g3c) with Ruderal/ ephemeral (17)	Grassland-Other neutral grassland	Poor	0.09	Poor	0.09

TR2	Other neutral grassland (g3c) with Ruderal/ ephemeral (17)	Grassland-Other neutral grassland	Poor	0.18	Poor	0.18
F2	Modified grassland (g4)	Grassland-Modified grassland	Poor	1.32	Good	3.96
F3	Modified grassland (g4)	Grassland-Modified grassland	Poor	10.08	Good	30.23
F3a	Modified grassland (g4)	Grassland-Modified grassland	Poor	0.22	Good	0.66
F4	Modified grassland (g4)	Grassland-Modified grassland	Poor	3.87	Good	11.62
S1	Mixed scrub (h3h)	Heathland and Shrub-Mixed scrub	Poor	0.09	Poor	0.09
S2	Bramble scrub (h2d)	Heathland and shrub-Bramble scrub	Condition assessment N/A	0.18	Condition assessment N/A	0.18
TN6	Artificial, unsealed surface (u1c)	Urban-Artificial, unvegetated unsealed surface	Condition assessment N/A	0.00	Condition assessment N/A	0.00
			Total baseline units	**20.77**	**Total baseline units**	**54.12**

Hedgerows

Priority hedgerows *(h2a)*

5.47 Under UKHab, all native hedgerows are 'Priority hedgerows' (h2a) and are defined as any hedgerow consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species. 'Other hedgerows' (h2b) are hedgerows that do not consist predominately of at least one woody UK native species. Further divisions of hedgerow habitat types are made within Metric 4.0, depending on their species composition and the presence or absence of standard trees.

5.48 There are four Priority hedgerows present within the Site, identified as Hedgerows H2, H3, H4 and H5 on the Habitats Plan.

5.49 Hedgerow H2 is classified as a 'Native Hedgerow' and is c. 3m tall. It is dominated by hawthorn *Crataegus monogyna* with a ground flora of tall ruderal species including cleavers.

5.50 Hedgerow H3 is continuous with H2 and is classified as a 'Native Hedgerow', however becomes a mixed hedgerow and includes holly *Ilex aquifolium*, hazel *Corylus avellana* and elder.

5.51 Hedgerow H4 is a 'Native Hedgerow with Trees', and is an outgrown hedge, c. 4-5m tall. It is dominated by hawthorn, with stands of holly, elder, hazel, blackthorn *Prunus spinosa* and hawthorn interspersed throughout the length. Standard trees throughout hedgerow include large mature English oak *Quercus robur*. The ground flora is limited to nettle, however wood false brome *Brachypodium sylvaticum*, hogweed *Heracleum sphondylium*, native bluebell and hybrid bluebell *Hyacinthoides x massartiana*, bracken *Pteridium aquilinum*, bramble, ground ivy *Glechoma hederacea*, lords and ladies *Arum maculatum* and cleavers were recorded underneath the oak canopies.

5.52 Hedgerow H5 is c. 1.5m tall and is classified as a 'Native Species Rich Hedgerow' as is has more than five woody species evenly distributed across its length, including hawthorn, apple sp *Malus sp*., hazel, elder, holly, blackthorn and dog rose *Rosa canina*, as well as bramble. The ground flora is dominated by nettle, with ground ivy and lords and ladies.

Condition Assessment

5.53 Hedgerows H2 and H3 pass five out of eight criteria for hedgerows, failing on the presence of a gap at the hedge base, gaps >5m within the canopy and the presence of ground flora species indicative of nutrient enrichment, and is therefore considered to be in '**moderate**' condition.

5.54 Hedgerow H4 passes seven out of ten criteria for hedgerow with trees, failing on gaps within the canopy for over 10% of total length, the presence of ground flora species indicative of nutrient enrichment and presence of tree damage (evidence of dead elm *Ulmus procera* specimen), and is therefore considered to be in '**moderate**' condition.

5.55 Hedgerow H5 passes seven out of eight criteria for hedgerows, failing on the presence of ground flora species indicative of nutrient enrichment, and is therefore considered to be in '**good**' condition.

<u>Lines of Trees *(w1g6)*</u>

5.56 There are three lines of trees (Hedgerows H1, H6 and H7) that bound the eastern boundary and the south-eastern corner of the Site.

5.57 Hedgerow H1 consists a line of trees and shrub along the bank between the eastern boundary of Field F1 and the off-Site road. It is dominated by hazel, with elder, with an understory of ash *Fraxinus excelsior*, dogwood *Cornus sanguinea*, holly, field rose *Rosa arvensis* and *cotoneaster* sp., and a ground flora of bramble, common nettle, ivy, cleavers, Spanish bluebell *Hyacinthoides hispanica*, ground ivy, lesser celandine *Ficaria verna*, ivy-leaved speedwell, common vetch, lords and ladies and wood false brome.

5.58 Hedgerow H6 is a line of trees consisting of oak, elder, blackthorn, hazel, hawthorn and bramble, with an understory of cleavers, nettles, creeping buttercup and meadow fescue.

5.59 Hedgerow H7 is a line of trees along the bank between the eastern boundary of F3 and the off-Site road. It consists of hawthorn, cherry *Prunus sp*, English oak, holly and hazel, with an understory of Spanish bluebell and cock's-foot.

Condition Assessment

5.60 Hedgerows H1 and H7 pass 3 out of 5 criteria for Lines of Trees, failing on the presence of veteran features and a naturally vegetated strip of at least 6m on both sides of the tree line (only present on the western side, the eastern side is bordered by a road), and is therefore considered to be in '**moderate**' condition.

5.61 Hedgerow H6 passes 4 out of 5 criteria for Lines of Trees, failing on the presence of veteran features, and is therefore considered to be in '**moderate**' condition. A summary table of baseline habitats and baseline units is provided in Table 4 below.

Table 4. Baseline hedgerow summary

Hedgerow	UKHab habitat	BNG habitat	Condition	Baseline units
H1	Priority hedgerow (*h2a)*	Line of trees	Moderate	0.31
H2	Priority hedgerow (*h2a)*	Native hedgerow	Moderate	0.28
H3	Priority hedgerow *(h2a)*	Native hedgerow	Moderate	0.4
H4	Priority hedgerow *(h2a)*	Native hedgerow with trees	Good	2.35
H5	Priority hedgerow *(h2a)*	Native species rich hedgerow	Good	1.83
H6	Priority hedgerow *(h2a)*	Line of trees	Moderate	0.28
H7	Priority hedgerow *(h2a)*	Line of trees	Moderate	0.26
Total baseline units				**5.70**

Post-Intervention Habitat Creation and Enhancement

5.62 With regards to habitat creation, target condition has been assigned taking into consideration the location, usage and potential management of the habitat. The post-intervention habitat creation and enhancement proposals assessed herein are aimed to target best and most appropriate measures with regards to enhancement for local biodiversity as well as habitat unit yield in biodiversity net gain terms. It should be noted that other habitat creation and enhancement measures will deliver different benefits with regards to habitat unit generation. Additional habitat creation measures may be able to be considered, dependant on the required outcomes of the project.

Biodiversity Unit Calculations

5.63 Biodiversity Metric calculations have been based on the following assumptions in terms of habitat creation and enhancement:

- It is considered achievable that current 'modified' grassland habitats can be enhanced to 'other neutral grassland' in 'moderate' to 'good' condition, through appropriate management / overseeding to improve species diversity and sward structure.

- It is proposed that existing 'other neutral grassland' can be enhanced to 'traditional orchard' in 'moderate' condition, through the planting of locally appropriate fruit tree cultivars and suitable grassland management.

- Scrub planting / creation, and the enhancement of current scrub habitat has been categorised as 'mixed scrub' in 'good' condition, as it is assumed that this can be achieved through appropriate management.

- The creation of a pond within the current menage has been proposed. This has been categorised as 'pond (non-priority)' in 'good' condition.

- Newly planted trees in the south-western corner of the Site have not been included within the baseline net gain assessment, as they fall below the threshold for 'small' trees within Metric 4.0 (small trees are regarded as those with a diameter at breast height of >7cm) (Biodiversity Metric 4.0 User Guide, Natural England 2023). However, as it is understood that these trees have been planted after 30th January 2020, it is considered that they are eligible for inclusion as habitat creation within the Metric.

- Hedgerow enhancements to the 'native hedgerows' along the western boundary have been proposed, and it is considered achievable that these can be enhanced to 'good' condition, by infilling current gaps.

- New species rich native hedgerow planting will be created along the northern boundary of the site (F1- F3), and it is considered that this could achieve 'good' condition.

5.64 Based on the Biodiversity Metric 4.0 calculations, the proposed measures could result in an overall **net gain 48.49 habitat units in Scenario 1, and a net gain of 25.89 habitat units in Scenario 2, in addition to a net gain of 3.20 hedgerow units.** A summary of the Biodiversity Metric calculations is provided in Table 5.

Table 5. Quantitative Assessment of Biodiversity Impact

Factor	Scenario 1	Scenario 2	Hedgerows (km)
	Habitats (ha)	Habitats (ha)	
Total on-site area / length (baseline)	7.82	7.82	0.66
Total site units (baseline)	20.77	54.12	5.70
Area / length retained	0.00	0.00	0.51
Units retained	0.00	0.00	5.02
Area / length enhanced	7.68	7.14	0.15
Baseline units enhanced	20.72	46.86	0.68
Area / length lost	0.14	0.68	0.00
Units lost	0.04	7.26	0.00
Post-intervention* units **on-site**	69.26	80.01	8.90
Net project biodiversity units change	**48.49**	**25.89**	**3.20**
Total project biodiversity % change	**233.48%**	**47.83%**	**56.10%**

**Post-intervention – including habitat retention, creation and enhancement*

Habitats

5.65 In both Scenarios, the Site has the potential to enhance the baseline grassland habitats. However, the extent of which these grassland habitats can be enhanced is dependent on the confirmation of the baseline grassland condition, which would need to be confirmed during the optimal grassland surveying period. The different scenarios in relation to grassland have been explored below.

Scenario 1

5.66 Scenario 1 is based on Field F1 being other neutral grassland in 'moderate' condition, and Fields F2-F4 being modified grassland in 'poor' condition.

5.67 In this Scenario, Fields F2-F4 would be enhanced from modified grassland in 'poor' condition to other neutral grassland in 'good' condition. Field F1 would be enhanced to 'traditional orchard' in 'moderate' condition.

5.68 Table 6 summarises the post-intervention habitat unit change based on Scenario 1.

Table 6. Post-intervention habitat unit change in Scenario 1.

Habitat Parcel	BNG habitat	Condition	Baseline units	Retention category	Proposed habitat	Condition	Units gained
F1	Grassland-Other neutral grassland	Moderate	4.75	Enhance	Grassland-Traditional Orchard	Moderate	5.53
TR1	Grassland-Other neutral grassland	Poor	0.09	Enhance	Grassland-Other neutral grassland	Good	0.19
TR2	Grassland-Other neutral grassland	Poor	0.18	Enhance	Grassland-Other neutral grassland	Good	0.38
F2	Grassland-Modified grassland	Poor	1.32	Enhance	Grassland-Other neutral grassland	Good	5.19
F3	Grassland-Modified grassland	Poor	10.08	Enhance	Grassland-Other neutral grassland	Good	39.43
				Lost	Heathland and Shrub-Mixed scrub	Good	0.18
F3a	Grassland-Modified grassland	Poor	0.22	Enhance	Grassland-Other neutral grassland	Good	0.86
F4	Grassland-Modified grassland	Poor	3.87	Enhance	Grassland-Other neutral grassland	Good	15.22
S1	Heathland and Shrub-Mixed scrub	Poor	0.09	Enhance	Heathland and Shrub-Mixed scrub	Good	0.21
S2	Heathland and shrub-Bramble scrub	Condition assessment N/A	0.18	Enhance	Heathland and shrub-Mixed scrub	Good	0.42
TN6	Urban-Artificial, unvegetated unsealed surface	Condition assessment N/A	0.00	Lost	Lakes-Pond (non-priority habitat)	Good	1.33
				Created	Individual trees- Rural tree	Poor	0.31
Total unit change							**+48.49**

Scenario 2

5.69 Scenario 2 is based on Field F1 being other neutral grassland in 'good' condition, and Fields F2-F4 being modified grassland in 'good' condition.

5.70 In this Scenario, Fields F2-F4 would be enhanced from modified grassland in 'good' condition to other neutral grassland in 'good' condition. Due to macro's within the Metric it is not possible 'enhance' existing grassland within F1 to 'traditional orchard' in moderate condition (as habitat already in 'moderate' condition'); as such it has had to be accounted for as grassland 'lost' and traditional orchard 'created' (although it is anticipated that the existing grassland would be retained and planted over). Table 7 summarises the post-intervention habitat unit change based on Scenario 1.

Table 7. Post-intervention habitat unit change in Scenario 2.

Habitat Parcel	BNG habitat	Condition	Baseline units	Retention category	Proposed habitat	Condition	Units gained
F1	Grassland-Other neutral grassland	Good	7.13	Lost	Grassland-Traditional Orchard	Moderate	3.50
TR1	Grassland-Other neutral grassland	Poor	0.09	Enhance	Grassland-Other neutral grassland	Good	0.19
TR2	Grassland-Other neutral grassland	Poor	0.18	Enhance	Grassland-Other neutral grassland	Good	0.38
F2	Grassland-Modified grassland	Good	3.96	Enhance	Grassland-Other neutral grassland	Good	6.28
F3	Grassland-Modified grassland	Good	30.23	Enhance	Grassland-Other neutral grassland	Good	47.73
				Lost	Heathland and Shrub-Mixed scrub	Good	0.18
F3a	Grassland-Modified grassland	Good	0.66	Enhance	Grassland-Other neutral grassland	Good	1.05
F4	Grassland-Modified grassland	Good	11.62	Enhance	Grassland-Other neutral grassland	Good	18.42
S1	Heathland and Shrub-Mixed scrub	Poor	0.09	Enhance	Heathland and Shrub-Mixed scrub	Good	0.21

S2	Heathland and shrub- Bramble scrub	Condition assessment N/A	0.18	Enhance	Heathland and shrub- Mixed scrub	Good	0.32
TN6	Urban- Artificial, unvegetated unsealed surface	Condition assessment N/A	0.00	Lost	Lakes- Pond (non-priority habitat)	Good	1.33
				Created	Individual trees- Rural tree	Poor	0.31
Total unit change							**+25.89**

Linear features

5.71 All on-Site hedgerows are to be retained. Hedgerows H2 and H3 have the potential to be enhanced from Native Hedgerows in 'moderate' condition to 'good' condition, by infilling the existing gaps with native species. New hedgerow planting is also proposed. Table 8 summarises the post-intervention habitat unit change.

Table 8. Post-intervention hedgerow unit change.

Hedgerow	BNG habitat	Condition	Baseline units	Retention category	Proposed habitat	Condition	Units gained
H1	Line of trees	Moderate	0.31	Retain	-	-	-
H2	Native hedgerow	Moderate	0.28	Enhance	Native hedgerow	Good	0.41
H3	Native hedgerow	Moderate	0.4	Enhance	Native hedgerow	Good	0.58
H4	Native hedgerow with trees	Good	2.35	Retain	-	-	-
H5	Native species rich hedgerow	Good	0.92	Retain	-	-	-
H6	Line of trees	Moderate	0.28	Retain	-	-	-
H7	Line of trees	Moderate	0.26	Retain	-	-	-
				Created	Native species rich hedgerow	Good	2.88
Total unit change							**+3.20**

6.0 DISCUSSION

6.1 Biodiversity Net Gain calculations, using the Biodiversity Metric 4.0 (April 2023) have been undertaken for The Nash Manor, Nutbourne. Baseline habitat calculations have been informed by a UK Habitat Classification survey and condition assessments. Calculations for potential habitat creation and enhancement have been based on discussions with the landowner and by taking into consideration local biotic conditions. Assumptions and limitations to the assessment have been highlighted where relevant and identified in the Metric calculator which should be reviewed in conjunction with this report.

6.2 At present, the baseline habitats on Site are 21.21 habitat units in Scenario 1, and 54.56 habitat units in Scenario 2. Depending on the confirmation of grassland habitat type (in the optimum grassland surveying period), the Site has the potential to deliver between 48.49 habitat units and 25.89 habitat units, in addition to 3.20 hedgerow units. Other options for habitat creation and enhancement may be considered which may result in different units yields being able to be delivered.

6.3 It should be noted that as a condition of biodiversity net gain, the management of all enhanced/created habitats must be secured for 30 years, to ensure proposals are achieved. A Habitat Management and Monitoring Plan (HMMP), detailing habitat creation, enhancement, management and monitoring measures would be required to support a registration of the Site as Biodiversity Offset.

7.0 REFERENCES

Baker, J., 2016. *Biodiversity Net Gain: Good practice principles for development*. CIEEM, CIRIA & IEMA.

Baker J., Hoskin, R. & Butterworth, T. (2019). *Biodiversity Net Gain: Good Practice Principles for Development. A practical guide*. CIEEM, CIRIA & IEMA.

Business and Biodiversity Offsets Programme (2018). *Business Planning for Biodiversity Planning: A Roadmap*. Business and Biodiversity Offsets Programme (BBOP). Forest Trends, 2018, Washington, D.C.

Chartered Institute of Ecology and Environmental Management, 2017. *Guidelines for Ecological Report Writing*. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1*. Winchester: CIEEM.

Natural England (May, 2020). *National Habitat Network Maps; User Guide V.2*. Available at: https://magic.defra.gov.uk/Metadata_for_magic/Habitat%20Network%20Mapping%20Guidance.pdf

Tonbridge and Malling Borough Council (2018) *Local Plan Draft*

UKHAB Working Group (2018). *UK Habitats Classification methodology – Version 1*.

Appendix A

Habitats Plan (CSA/5972/100)

- Site boundary
- Other neutral grassland (g3c)
- Modified grassland (g4)
- Dense scrub (h3)
- Artificial unvegetated unsealed surface (u1c)
- Hedgerows (Priority Habitat) (h2a)
- Line of trees (w1g6)
- Field reference
- Hedgerow reference
- Gate
- Fence
- Target note

TN1- South facing bank
TN2- Outlier badger sett with 2x tunnels
TN3- Fox/badger tunnels
TN4- Badger sett with numerous active tunnels
TN5- Mature oak with veteran features
TN6- Manège
TN7- Newly planted trees

0 100 m

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Project	The Nash Manor, Nutbourne	Date May 2023	Drawing No. CSA/6555/100
Drawing Title	Habitats Plan	Scale Refer to scale	Rev -
Client	Lee Goossens	Drawn LG	Checked CC

Appendix B

Habitat Condition Assessment Sheets,
Habitats & Species List

Table 1. UK Habitat Classification Summary Table

Habitat Parcel Number	Habitat Type	Habitat Code(s)	Description
F1	*Other neutral grassland*	*g3c*	A small paddock of previously grazed grassland, displaying a varied and tussocky sward with a variety of fine leaved and coarse grasses and a variety of forbs, including some undesirables at low instances.
F2	*Modified grassland*	*g4*	Area of previously grazed grassland, dominated by coarse grasses and some forbs, with areas of longer grass on the slopes of the menage, and areas of mown grass. Some undesirables including common nettle, creeping thistle, creeping buttercup, broadleaved dock, curled dock and white clover.
F3	*Modified grassland*	*g4 47 56*	Areas of previously grazed grassland (currently unmanaged), dominated by coarse grasses, with herbaceous species including chickweed, common mouse ear, creeping buttercup, creeping thistle, curled dock and dandelion. Young native scatters trees (<7cm diameter) planted in south-west corner.
F3a	*Modified grassland*	*g4*	Steep south facing bank on the northern boundary of F3 (unmanaged), dominated by coarse grasses in many areas (more open ground where disturbed by mammal activity) with herbaceous species including sow thistle, curled dock and foxglove.
F4	*Modified grassland*	*g4*	Areas of previously grazed grassland (currently unmanaged), dominated by coarse grasses, with herbaceous species including chickweed, common mouse ear, creeping buttercup, creeping thistle, curled dock and dandelion.
TR1	*Other neutral grassland with tall herb*	*g3c 16*	Area of tall ruderal species on the south-west facing bank of F2. Dominated by Yorkshire fog, nettle, broadleaved dock and thistle.
TR2	*Other neutral grassland with tall herb*	*g3c 16*	Area of tall ruderal species at the eastern boundary of F2. Dominated by Yorkshire fog, nettle, broadleaved dock and thistle.
	Mixed scrub	*h3h*	Area of scrub between F1 and F2, consisting of bramble and elder.
	Bramble scrub	*h3d*	Area of bramble scrub along the northern boundary of F2
	Artificial, unsealed surface	*u1c*	Ménage

Table 1. Habitat Polygons

Site Name	6555 The Nash, Nutbourne					
Survey Date and Surveyor(s)	02/05/2023 CC & LG					
Scientific Name	**Common Name**	**Habitat Parcel Number/Habitat Type**				
		F1 Other neutral grassland	F2 Modified grassland	F3 Modified grassland	F3a Modified grassland	F4 Modified grassland
Herb Species						
Achillea millefolium	Yarrow	X	X	X		
Bellis perennis	Daisy		X			
Centaurea nigra	Common knapweed	X				
Centaurium erythraea	Common centaury	X				
Cerastium sp.	Common mouse-ear	X		X		X
Cirsium arvense	Creeping thistle	X	X	X	X	X
Cirsium vulgare	Spear thistle		X			
Digitalis purpurea	Foxglove				X	
Galium aparine	Cleavers				X	
Geranium dissectum	Cut-leaved crane's-bill	X	X			X
Geranium pyrenaicum	Hedgerow crane's-bill			X		
Heracleum sphondylium	Hogweed		X			
Hyacinthoides x massartiana	Hybrid bluebell	X				
Hypochaeris radicata	Cat's-ear		X			
Lamium purpureum	Red dead-nettle		X			
Lotus corniculatus	Common bird's-foot-trefoil			X		
Plantago lanceolata	Ribwort plantain	X	X			
Ranunculus acris	Meadow buttercup	X		X		X
Ranunculus bulbosus	Bulbous buttercup	X				
Ranunculus repens	Creeping buttercup	X	X	X	X	X
Rumex acetosa	Common sorrel	X		X		
Rumex crispus	Curled dock	X	X	X		X
Rumex obtusifolius	Broad-leaved dock	X	X	X		X
Scrophularia nodosa	Common figwort			X		
Senecio jacobaea	Common ragwort		X	X	X	
Sherardia arvensis	Field madder		X			
Silene dioica	Red campion			X		
Sonchus arvensis	Perennial sowthistle				X	
Stellaria media	Common chickweed					X
Taraxacum agg.	Dandelion		X	X		X
Trifolium repens	White clover	X	X	X		X
Urtica dioica	Common nettle	X	X		X	
Veronica hederifolia	Ivy-leaved speedwell	X				
Vicia cracca	Tufted vetch					X
Vicia sativa	Common vetch	X	X	X		
Grasses						
Alopecurus pratensis	Meadow foxtail	X	X	X	X	X
Anisantha sterilis	Barren brome				X	
Anthoxanthum odoratum	Sweet vernal-grass	X				X
Arrhenatherum	Oat-grass sp.			X	X	
Bromus hordeaceus	Soft-brome			X	X	X
Dactylis glomerata	Cock's-foot	X	X		X	
Festuca rubra	Red fescue	X	X	X	X	
Festuca pratensis	Meadow fescue					X
Holcus lanatus	Yorkshire-fog	X	X	X		X
Lolium perenne	Perennial rye-grass		X	X		
Poa annua	Annual meadow-grass			X		
Poa pratensis	Smooth meadow-grass	X	X			
Poa sp.	Meadow-grass	X				X
Schedonorus giganteus	Giant fescue			X	X	

References

Stace, C. A., 2019. *New Flora of the British Isles*. 4th ed. Suffolk: C & M Floristics.

Table 2. Linear Habitats

Site Name	6555 The Nash, Nutbourne						
Survey Date and Surveyor(s)	02/05/2023 CC & LG						
Scientific Name	**Common Name**	**Habitat Parcel Number/Habitat Type**						
		H1 Line of Trees	H2 Native hedgerow	*H3 Native hedgerow*	*H4 Native hedgerow with trees*	*H5 Native Hedgerow*	*H6 Line of Trees*	*H7 Line of Trees*
Ferns								
Pteridium aquilinum	Bracken				X			
Herb Species								
Arum maculatum	Lords-and-ladies	X			X	X		
Ficaria verna	Lesser celandine	X						
Galium aparine	Cleavers		X	X	X		X	
Glechoma hederacea	Ground-ivy	X			X	X		
Heracleum sphondylium	Hogweed				X			
Hyacinthoides x massartiana	Hybrid bluebell	X			X			X
Hyacinthoides non-scripta	Bluebell				X			
Hypochaeris radicata	Cat's-ear		X					
Urtica dioica	Common nettle				X	X	X	
Veronica hederifolia	Ivy-leaved speedwell	X						
Vicia sativa	Common vetch	X						
Grasses								
Brachypodium sylvaticum	False brome	X			X			
Dactylis glomerata	Cock's-foot							X
Festuca pratensis	Meadow fescue						X	
Woody Species								
Broadleaved								
Acer campestre	Field maple	X						
Cornus sp.	Dogwood	X						
Corylus avellana	Hazel	X		X	X	X	X	X
Crataegus monogyna	Hawthorn		X		X	X	X	X
Fraxinus excelsior	Ash	X						
Ilex aquifolium	Holly	X		X	X	X		X
Malus sp.	Apple					X		
Prunus avium	Cherry							X
Prunus spinosa	Blackthorn				X	X	X	
Quercus robur	Pedunculate oak						X	X
Rosa canina sp.	Dog-rose	X				X		
Rubus fruticosus agg.	Bramble	X			X	X	X	
Sambucus nigra	Elder	X		X	X	X	X	

References

Stace, C. A., 2019. *New Flora of the British Isles*. 4th ed. Suffolk: C & M Floristics.

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)					
UK Habitat Classification (UKHab) Habitat Type(s)					
Grassland - Modified grassland					
Habitat Description					
ukhab – UK Habitat					
Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**		On-Site	
		Survey reference (if relating to a wider survey)		N/A	
Limitations (if applicable)	Surveyed outside of optimal grassland surveying period (summer)	**Habitat parcel reference**			
		F2	F3	F3a	F4
		Grid reference			
Condition Assessment Criteria		TQ 07031 19389	TQ 06925 19339	TQ 06910 19455	TQ 07095 19283
		Criterion passed (✓ or X)			
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs (this may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of	X 5.9sp/m2	X 5.5sp/m2	X 5.4sp/m2	X 5.75sp/m2
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	✓	X	X	X
C	Some scattered scrub (including bramble *Rubus fruticosus* agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	✓	✓	✓	✓
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	✓	✓	✓	✓
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	✓	✓	✓	✓
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	✓	✓	✓	✓
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	✓	✓	✓	✓
	Essential criterion achieved (Yes or No)	No	No	No	No
	Number of criteria passed	6	5	5	5

Condition	**Condition Assessment Score**	**Score Achieved ×/✓**			
Passes 6 or 7 criteria including passing essential criterion A	Good (3)				
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)				
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	✓	✓	✓	✓

Suggested enhancement interventions to improve condition score					

Footnotes

Footnote 1 – Creeping thistle *Cirsium arvense* , spear thistle *Cirsium vulgare* , curled dock *Rumex crispus* , broad-leaved dock *Rumex obtusifolius* , common nettle *Urtica dioica* , creeping buttercup *Ranunculus repens* , greater plantain *Plantago major* , white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris* .

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)					
UK Habitat Classification (UKHab) Habitat Type(s)					
Grassland - Modified grassland					
Habitat Description					
ukhab – UK Habitat					
Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**		On-Site	
		Survey reference (if relating to a wider survey)		N/A	
Limitations (if applicable)	Surveyed outside of optimal grassland surveying period (summer)	**Habitat parcel reference**			
		F2	F3	F3a	F4
		Grid reference			
Condition Assessment Criteria		TQ 07031 19389	TQ 06925 19339	TQ 06910 19455	TQ 07095 19283
		Criterion passed (✓ or X)			
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs (this may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of	X 5.9sp/m2	X 5.5sp/m2	X 5.4sp/m2	X 5.75sp/m2
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	✓	X	X	✓
C	Some scattered scrub (including bramble *Rubus fruticosus* agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	✓	✓	✓	✓
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	✓	✓	✓	✓
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	✓	✓	✓	✓
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	✓	✓	✓	✓
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	✓	✓	✓	✓
	Essential criterion achieved (Yes or No)	No	No	No	No
	Number of criteria passed	6	5	5	6

Condition	**Condition Assessment Score**	**Score Achieved ×/✓**			
Passes 6 or 7 criteria including passing essential criterion A	Good (3)				
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)				
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	✓	✓	✓	✓

Suggested enhancement interventions to improve condition score					

Footnotes

Footnote 1 – Creeping thistle *Cirsium arvense* , spear thistle *Cirsium vulgare* , curled dock *Rumex crispus* , broad-leaved dock *Rumex obtusifolius* , common nettle *Urtica dioica* , creeping buttercup *Ranunculus repens* , greater plantain *Plantago major* , white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris* .

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)

UK Habitat Classification (UKHab) Habitat Type(s)

Grassland - Lowland calcareous grassland
Grassland - Lowland dry acid grassland
Grassland - Lowland meadows
Grassland - Other lowland acid grassland
Grassland - Other neutral grassland
Grassland - Tall herb communities (H6430) [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.]
Grassland - Upland acid grassland
Grassland - Upland calcareous grassland
Grassland - Upland hay meadows
Sparsely vegetated land - Calaminarian grassland

Habitat Description

ukhab – UK Habitat Classification				
Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**		On-Site
		Survey reference (if relating to a wider survey)		N/A
Limitations (if applicable)	Surveyed outside of optimal grassland surveying period (summer)	**Habitat parcel reference**		
		F1	TR1	TR2
Condition Assessment Criteria		**Grid reference**		
		TQ 07138 19439	TQ 07078 19448	TQ 07008 19385
		Criterion passed (Yes or No)		
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	✓	X	X
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	✓	X	X
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[1].	✓	✓	✓
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	✓	✓	✓
E	Combined cover of species indicative of sub-optimal condition[2] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	✓	X	X
Additional Criterion - must be assessed for all non-acid grassland types				
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	X 4.95sp/m2	X	X
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		No	No	No
Number of criteria passed		5	2	2

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓		
Acid Grassland types (Result out of 5 criteria)				
Passes 5 criteria	Good (3)			
Passes 3 or 4 criteria	Moderate (2)			
Passes 2 or fewer criteria	Poor (1)			
Non-acid grassland types (Result out of 6 criteria)				
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)			
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	✓		
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		✓	✓
Suggested enhancement interventions to improve condition score				
Notes				

Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 2 - Species indicative of sub-optimal condition for this habitat type include: creeping thistle *Cirsium arvense* , spear thistle *Cirsium vulgare* , curled dock *Rumex crispus* , broad-leaved dock *Rumex obtusifolius* , common nettle *Urtica dioica* , creeping buttercup *Ranunculus repens* , greater plantain *Plantago major* , white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris* . There may be additional relevant species local to the region and or site.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)				
UK Habitat Classification (UKHab) Habitat Type(s)				
Grassland - Lowland calcareous grassland **Grassland - Lowland dry acid grassland** **Grassland - Lowland meadows** **Grassland - Other lowland acid grassland** **Grassland - Other neutral grassland** **Grassland - Tall herb communities (H6430)** [Note Tall herb habitat that does not meet the Annex 1 definition should be recorded as 'Other neutral grassland'] [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.] **Grassland - Upland acid grassland** **Grassland - Upland calcareous grassland** **Grassland - Upland hay meadows** **Sparsely vegetated land - Calaminarian grassland**				
Habitat Description				
ukhab – UK Habitat Classification				
Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**		On-Site
		Survey reference (if relating to a wider survey)		N/A
Limitations (if applicable)	Surveyed outside of optimal grassland surveying period (summer)	**Habitat parcel reference**		
		F1	TR1	TR2
Condition Assessment Criteria		**Grid reference**		
		TQ 07138 19439	TQ 07078 19448	TQ 07008 19385
		Criterion passed (Yes or No)		
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	✓	X	X
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	✓	X	X
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[1].	✓	✓	✓
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	✓	✓	✓
E	Combined cover of species indicative of sub-optimal condition[2] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	✓	X	X
Additional Criterion - must be assessed for all non-acid grassland types				
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	X 4.95sp/m2	X	X
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		No	No	No
Number of criteria passed		5	2	2

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓		
Acid Grassland types (Result out of 5 criteria)				
Passes 5 criteria	Good (3)			
Passes 3 or 4 criteria	Moderate (2)			
Passes 2 or fewer criteria	Poor (1)			
Non-acid grassland types (Result out of 6 criteria)				
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)			
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	✓		
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)			
Suggested enhancement interventions to improve condition score				
Notes				

Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 2 - Species indicative of sub-optimal condition for this habitat type include: creeping thistle *Cirsium arvense* , spear thistle *Cirsium vulgare* , curled dock *Rumex crispus* , broad-leaved dock *Rumex obtusifolius* , common nettle *Urtica dioica* , creeping buttercup *Ranunculus repens* , greater plantain *Plantago major* , white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris* . There may be additional relevant species local to the region and or site.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Condition sheet: HEDGEROW Habitat Types

Habitat Type

Native hedgerow
Native hedgerow - associated with bank or ditch
Native hedgerow with trees
Native hedgerow with trees - associated with bank or ditch
Species-rich native hedgerow
Species-rich native hedgerow - associated with bank or ditch
Species-rich native hedgerow with trees
Species-rich native hedgerow with trees - associated with bank or ditch

Habitat Description

See the Biodiversity Metric 4.0 User Guide Section 9.
Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.

Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**	On-Site
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	N/A

Condition Assessment Criteria

A series of ten attributes, representing key physical characteristics are used for this assessment. This assessment is based on the Hedgerow Survey Handbook[1] and Favourable Conservation Status document[2]. For further clarification please refer to the Hedgerow Survey Handbook. Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.

Hedgerow favourable condition attributes

Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	**Habitat parcel reference**			
				H2	H3	H4	H5
				Grid reference			
				TQ 06824 19390	TQ 06835 19314	TQ 06956 19214	TQ 07083 19230
Core groups - applicable to all hedgerow types				**Criterion passed (✓ or X)**			
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	✓	✓	✓	✓
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	✓	✓	✓	✓

B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	X	X	✓	✓
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	X	X	X	✓
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	✓	✓	✓	✓
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	X	X	X	X
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].	✓	✓	✓	✓
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).	✓	✓	✓	✓
Additional group - applicable to hedgerows with trees only							
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient[8]), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	n/a	n/a	✓	n/a

E3.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	n/a	n/a	X	n/a

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The scores for each are set out in the tables below.

Condition categories for hedgerows without trees

Category	Category Requirements	Metric Score			
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.				✓
Moderate	No more than 4 failures in total; **AND** Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).	✓	✓		
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).				
	Score achieved:	**2**	**2**		**3**

Condition categories for hedgerows with trees

Category	Category Requirements	Metric score			
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.				
Moderate	No more than 5 failures in total; **AND** Does not fail both attributes in more than one functional group (e.g., fails attributes A1, A2, B1, C2 and E1 = Moderate condition).			✓	
Poor	Fails a total of more than 5 attributes; **OR** Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).				
	Score achieved:			**2**	

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook. A standard procedure for local surveys in the UK.* [online] Available on:
layout (hedgelink.org.uk)

Footnote 2 – STALEY, J.T. ET AL. (2020) *Definition of Favourable Conservation Status for Hedgerows.* [online] Available on:
Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)

Footnote 3 – Wildlife and Countryside Act 1981 (as amended).

Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain.* Species Status 7: 1-116. [online] Available on:

The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub

Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?*
[online] Available on:
Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora.*
[online] Available on:
Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk)

Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on:
Home » NNSS (nonnativespecies.org)

Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Condition Sheet: LINE OF TREES Habitat Type

Habitat Type(s)

Line of trees
Line of trees – associated with bank or ditch
Ecologically valuable line of trees
Ecologically valuable line of trees – associated with bank or ditch

Habitat Description

See the Biodiversity Metric 4.0 User Guide Section 9.
This assessment is based on the Hedgerow Survey Handbook[1]. For further clarifications please refer to the Handbook.
Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.

Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**		N/A
		Survey reference (if relating to a wider survey)		N/A
Limitations (if applicable)		**Habitat parcel reference**		
		H2	**H6**	**H7**
		Grid reference		
		TQ 07179 19428	TQ 07167 19253	TQ 07209 19316

	Condition Assessment Criteria	Criterion passed (✓ or X)		
A	At least 70% of trees are native species.	✓	✓	✓
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	✓	✓
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	X	X	X
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice[2].	X	✓	X
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	✓	✓	✓
	Number of criteria passed	**3**	**4**	**3**

Condition Assessment Result (out of 5	Condition Assessment Score	Score Achieved ×/✓		
Passes 5 criteria	Good (3)			
Passes 3 or 4 criteria	Moderate (2)	✓	✓	✓
Passes 2 or fewer cri	Poor (1)			

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 2 – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and:
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Condition Sheet: SCRUB Habitat Type

UK Habitat Classification (UKHab) Habitat Type

Heathland and shrub - Blackthorn scrub
Heathland and shrub - Gorse scrub
Heathland and shrub - Hawthorn scrub
Heathland and shrub - Hazel scrub
Heathland and shrub - Mixed scrub
Heathland and shrub - Dunes with sea buckthorn (H2160)
Heathland and shrub - Willow scrub

Habitat Description

For Dunes with sea buckthorn see:	Dunes with sea-buckthorn (Dunes with Hippophae rhamnoides) - Special Areas of Conservation (jncc.gov.uk)
r other scrub types see:	ukhab – UK Habitat Classification

Site name and location	The Nash Manor, Nutbourne	**On-site or off-site**	On-Site
		Survey reference (if relating to a wider survey)	N/A
Limitations (if applicable)	N/A	**Habitat parcel reference**	
		Mixed scrub	
		Grid reference	
		TQ 07083 19449	

	Condition Assessment Criteria	**Criterion passed (✓ or X)**
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species[1], with no single species comprising more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover).	X
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[2]) shrubs are all present.	X
C	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]) and species indicative of sub-optimal condition[5] make up less than 5% of ground cover.	✓
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	✓
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	X
	Number of criteria passed	**2**

Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criter	Poor (1)	X

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 2 - See gov.uk standing advice on ancient and veteran species. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and

Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

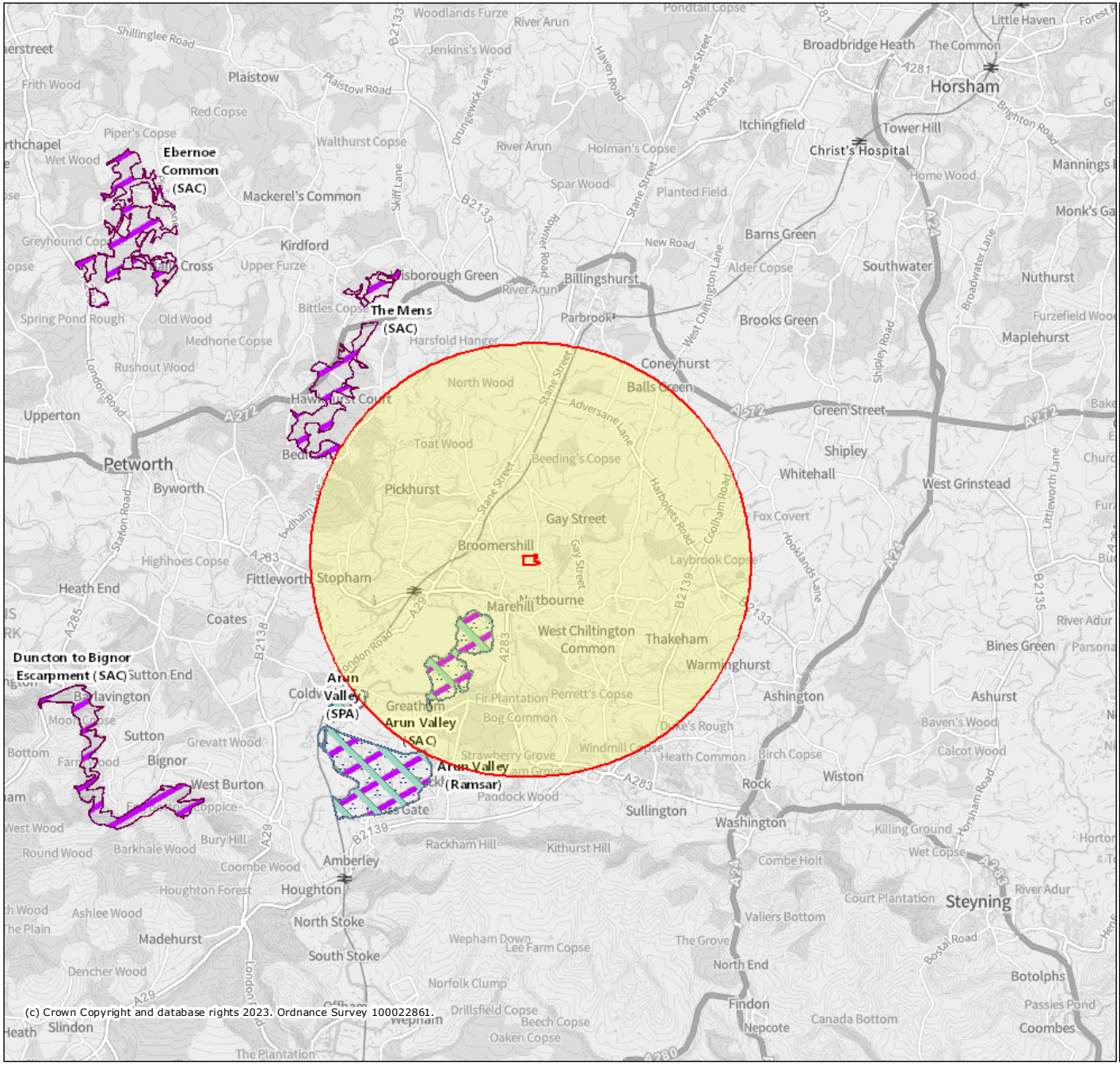
Footnote 4 – Wildlife and Countryside Act 1981 (as amended).

Footnote 5 - Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alianthus altissima*, holm oak *Quercus ilex*, European turkey oak *Quercus cerris*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon*, American skunk cabbage *Lysichiton americanus*, buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana*. There may be additional relevant species local to the region and or site.

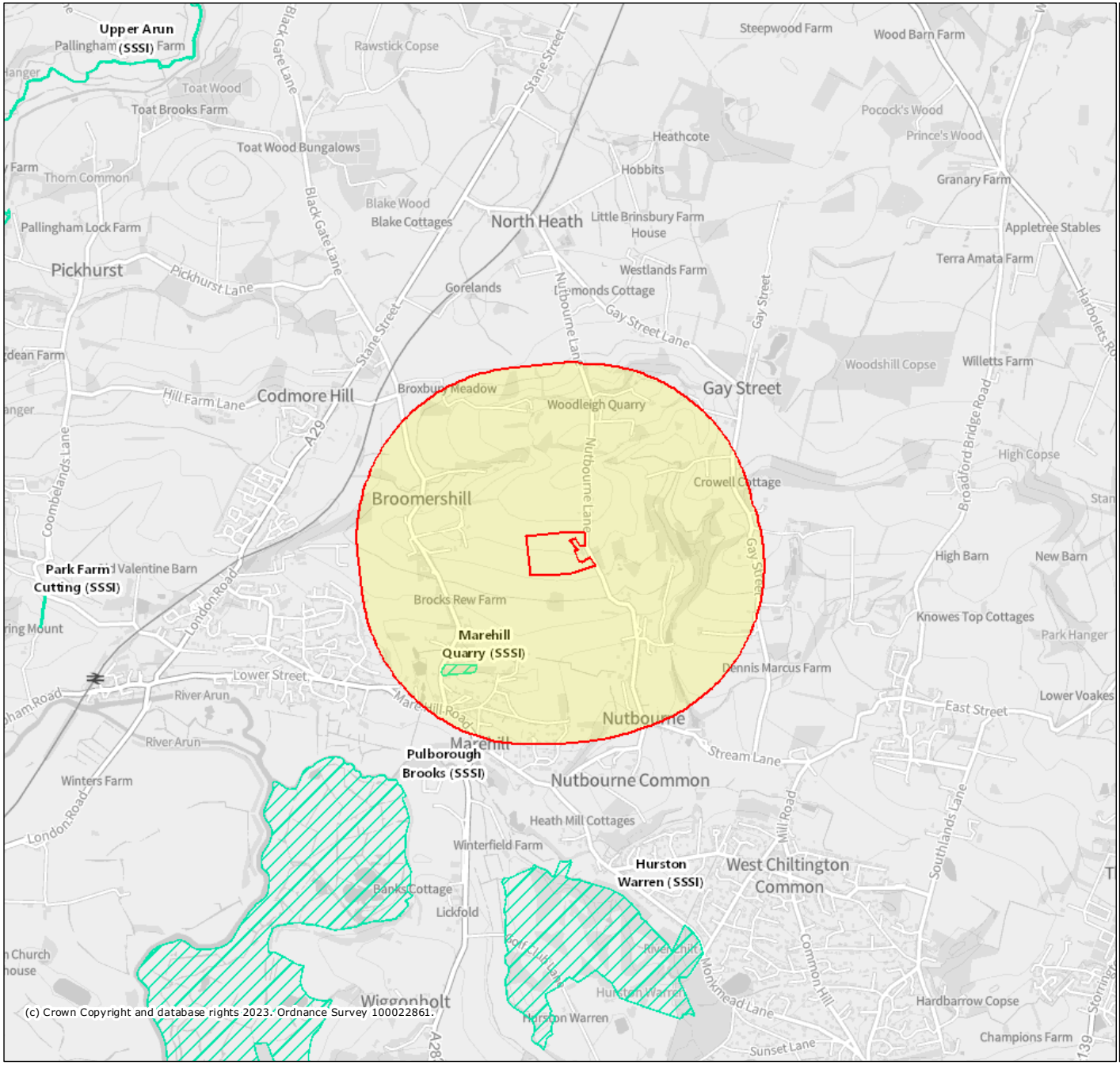
Appendix C

Desk Study Information

6555_International Designated Site Search 5km


Ebernoe Common (SAC)
The Mens (SAC)
Duncton to Bignor Escarpment (SAC)
Arun Valley (SPA)
Arun Valley (SAC)
Arun Valley (Ramsar)
Petworth
Pickhurst
Broomershill
Gay Street
Marehill
West Chiltington Common
Thakeham
Coldwaltham
Greatham
Stopham
Fittleworth
Billingshurst
Coneyhurst
Horsham
Christ's Hospital
Southwater
Maplehurst
Shipley
West Grinstead
Ashington
Washington
Sullington
Steyning
Wiston
Rock
Amberley
Houghton
North Stoke
South Stoke
Madehurst
Findon
Botolphs
Coombes
Upperton
Byworth
Heath End
Coates
Sutton
Bignor
West Burton
Barns Green
Brooks Green
Parbrook
Itchingfield
Broadbridge Heath
Kirdford
Plaistow
Mackerel's Common
Spar Wood
Toat Wood
Beeding's Copse
Laybrook Copse
Fox Covert
Perrett's Copse
Bog Common
Heath Common
Paddock Wood
Kithurst Hill
Rackham Hill
Wepham Down
Lee Farm Copse
Norfolk Clump
Oaken Copse
Beech Copse
Drillsfield Copse
Canada Bottom
Nepcote
North End
The Grove
Valiers Bottom
Court Plantation
Combe Holt
Killing Ground
Wet Copse
Whitehall
Green Street
Ashurst
Bines Green
Warninghurst
Nuthurst
Monk's Gate
Mannings Heath
Tower Hill
Home Wood
Alder Copse
Furzefield Wood
Littleworth Lane
Shipley Road
Broadwater Lane
Rooklands Lane
Coolham Road
Harbolets Road
Adversane Lane
Stane Street
Hawkhurst Court
Bedham
Harsfold Hanger
Medhone Copse
Rushout Wood
Old Wood
Spring Pond Rough
Greyhound Copse
Piper's Copse
Red Copse
Frith Wood
Wet Wood
Walthurst Copse
Jenkins's Wood
Woodlands Furze
Pondtail Copse
Little Haven
Forest Row
Shillinglee Road
Plaistow Road
Drungewick Lane
Skiff Lane
Haven Road
Hayes Lane
Rowner Road
New Road
West Chiltington Lane
Stane Street
River Arun
Bittles Copse
Upper Furze
Cross
Bedham Lane
Stanton Road
London Road
Highhoes Copse
Fir Plantation
Strawberry Grove
Windmill Copse
Dale's Rough
Birch Copse
Calcot Wood
Baven's Wood
Horsham Road
Brighton Road
Bostal Road
Barkhale Wood
Bury Hill
Round Wood
Coombe Wood
Houghton Forest
Ashlee Wood
Dencher Wood
Drillsfield Copse
Passies Pond
Gravatt Wood
Moon's Copse
Sutton End
Blatchington
Duncton to Bignor Escarpment (SAC)
Arun Valley (SPA)
Arun Valley (SAC)
Arun Valley (Ramsar)
A29
A24
A283
A272
A281
A285
A2138
A2139
A2133
A2135
A2212
A2280
B2133
B2139
B2135
A21
A23
A27
A280
A2037
A2288
A2212
A2285
A2138
A2139
A2133
A

6555_National Designated Site search 1km



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)

Projection = OSGB36
xmin = 500700
ymin = 116300
xmax = 513400
ymax = 122600

0 0.5 1
km

Map produced by MAGIC on 24 May, 2023.

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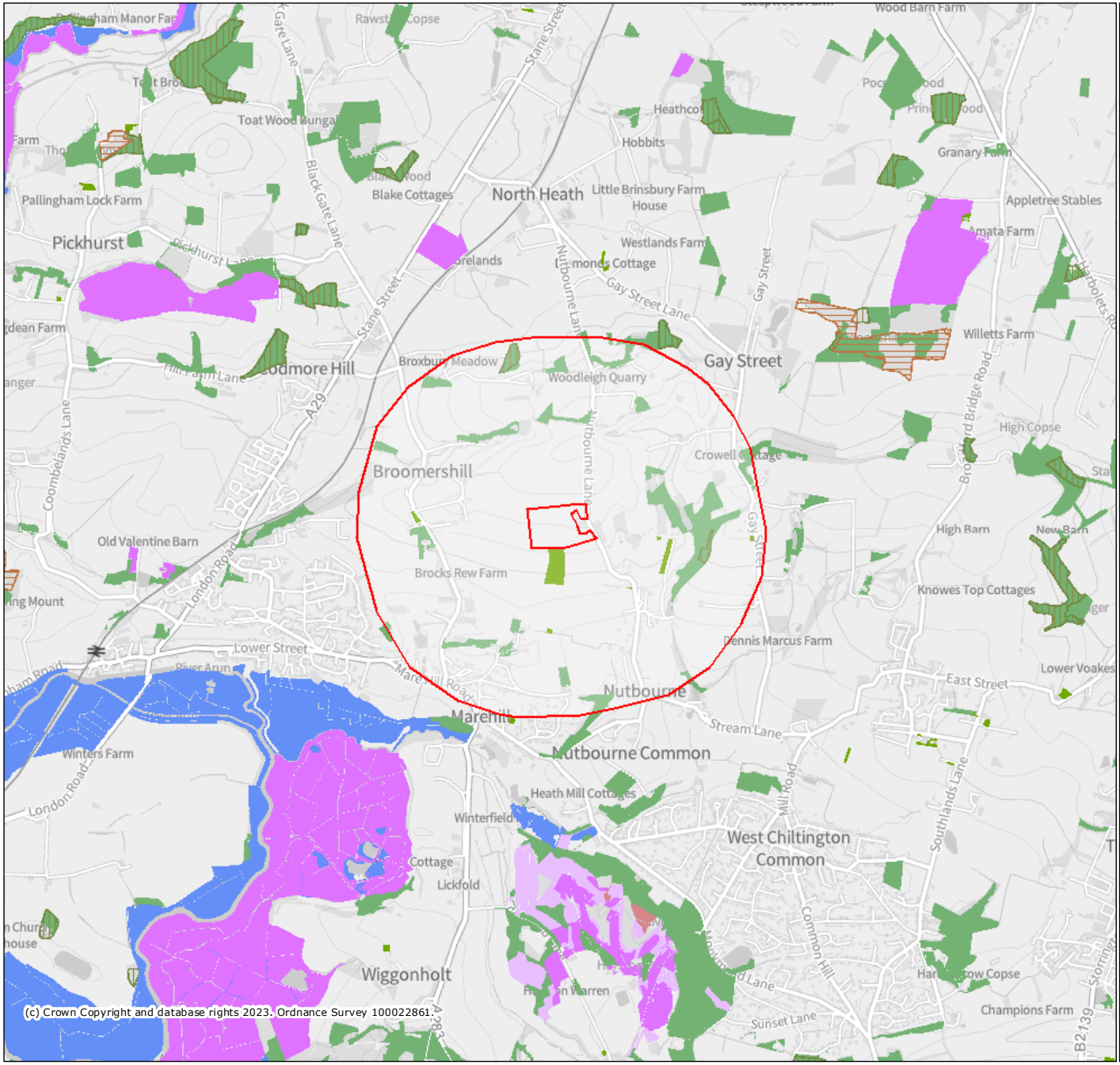
6555_S41 Habitats and Ancient Woodland Search 1km



Legend

- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Dry Acid Grassland (England)
- Priority Habitat Inventory - Lowland Heathland (England)
- Priority Habitat Inventory - Lowland Fens (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)

Projection = OSGB36
xmin = 500700
ymin = 116200
xmax = 513400
ymax = 122400

0 0.5 1
km

Map produced by MAGIC on 26 May, 2023.

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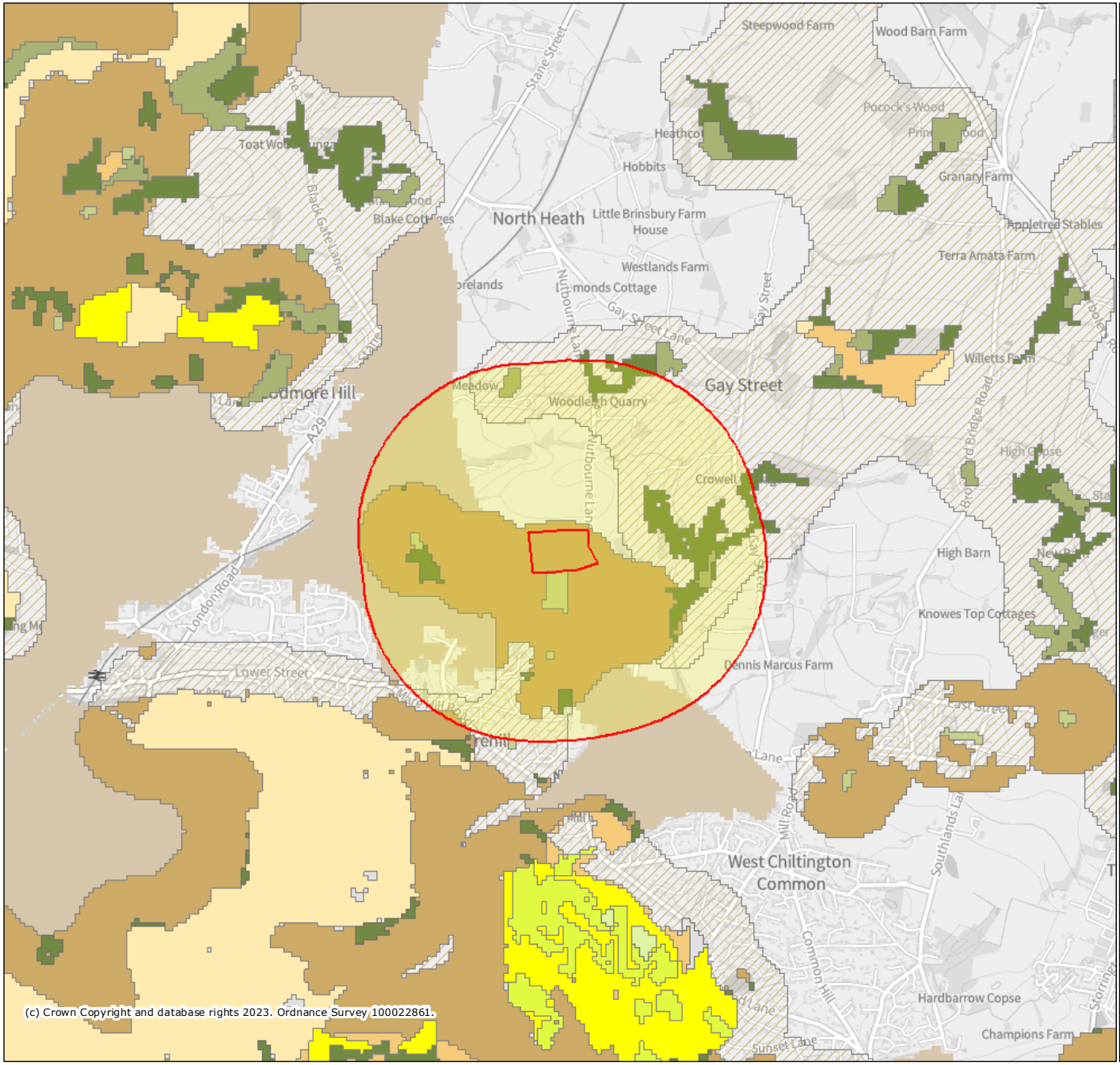
MAGIC

6555_Network Enhancement Zones



Legend

National Habitat Network All Habitats Combined (England)

- Ancient woodland
- Blanket bog
- Coastal saltmarsh
- Coastal sand dunes
- Coastal vegetated shingle
- Lakes
- Limestone pavement
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Lowland raised bog
- Maritime cliff & slope
- Purple moor grass & rush pastures
- Reedbeds
- Rivers
- Traditional orchard
- Upland calcareous grassland
- Upland flushes fens & swamps
- Upland hay meadow
- Upland heathland
- Wood pasture and parkland
- PHI_Other
- Additional land within SSSIs
- Habitat Restoration-Creation
- Restorable Habitat
- Fragmentation Action Zone
- Network Enhancement Zone 1
- Network Enhancement Zone 2
- Network Expansion Zone

Projection = OSGB36
xmin = 500700
ymin = 116300
xmax = 513400
ymax = 122600

0 0.5 1
km

Map produced by MAGIC on 25 May, 2023.

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Ecological Data Search SxBRC/23/105 - Summary Report

An ecological data search was carried out for land at The Nash Manor, Nutbourne on behalf of Lydia Galbraith (CSA Environmental Ltd) on 22/05/2023.

The following datasets were consulted for this report:

	Requested	Radius/buffer size
Designated sites, habitats & ownership maps	Yes	1km
Protected, designated and invasive species	Yes	1km

Summary of results

Sites and habitats

Statutory sites	1 SSSI
Non-statutory sites	1 LGS
Section 41 habitats	2 habitats
Ancient and/or ghyll woodland	Present

Protected and designated species

International designations	27 species	347 records
National designations	63 species	627 records
Other designations	122 species	724 records
Total	**135 species**	**1,014 records**
Invasive non-native	19 species	53 records

The report is compiled using data held by Sussex Biodiversity Record Centre (SxBRC) at the time of the request. SxBRC does not hold comprehensive species data for all areas. Even where data are held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there – the area may simply not have been surveyed.

This summary page may be published.
The full report and maps may not be published or otherwise shared.

The data search report is valid until 22/05/2024 for the site named above.

Appendix D

Photographs

Photograph 1. Field F1 (g3c).

Photograph 2. South-west facing slope in Field F2 (TR1).

Photograph 3. Field F1 (g3c).

Photograph 4. Hedgerow H2 (Native hedgerow)

Photograph 3. Field F2 (g4), showing the mown and longer grassland areas.

Photograph 4. Area of tall ruderal (g3c 16) in Field F2 (TR2).

Photograph 5. Bramble scrub within Field F2.

Photograph 6. Menage (TN6)

Photograph 5. Field F4 (g4)

Photograph 6. Hedgerow H5 (Native species rich hedgerow).

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