



# Barnsley West

## Factual Ecological Appraisal



**For Strata Sterling Barnsley West Ltd**

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## Executive Summary

Contents	Summary
<b>Site Location</b>	The site is located 2 km west of Barnsley town centre, on farmland between the communities of Gawber, Higham, Pogmoor, Redbrook and Barugh Green and immediately north-east of Junction 37 of the M1 motorway. The centre of the site has an approximate Ordnance Survey Grid Reference of SE 31778 07075.
<b>Proposals</b>	The proposed development comprises a mixed-use development to provide approximately 1,760 new homes and 172,000sqm of employment land.
<b>Existing Site Information</b>	<ul style="list-style-type: none"> <li>• Wildscapes. (2013a). Land South of Barugh Green Road UB4A.</li> <li>• Wildscapes. (2013b). Land South of Barugh Green Road UB4B.</li> <li>• Wildscapes. (2014). Land at Highham UB2A.</li> <li>• AECOM. (2017). Barnsley West: Preliminary Ecological Appraisal.</li> <li>• WYG. (2018a). Barnsley West: Great Crested Newt eDNA Survey Report.</li> <li>• WYG. (2018b). Barnsley West: Bat Survey Report.</li> <li>• WYG. (2019a). Barnsley West: Badger and Hedgerow Survey Report.</li> <li>• WYG. (2019b). Barnsley West: Breeding Bird Survey Report.</li> <li>• WYG. (2020a). Barnsley West: Badger and Hedgerow Survey Report.</li> <li>• WYG. (2020b). Barnsley West: Great Crested Newt eDNA Survey Report.</li> <li>• WYG. (2020c). Barnsley West: Bat Survey Report.</li> <li>• WYG. (2020d). Barnsley West: Breeding Bird Survey Report.</li> </ul>
<b>Scope of this Survey</b>	A factual ecological appraisal, comprising a desk study and extended Phase 1 habitat survey to record habitat types and dominant vegetation, including any invasive species, and any evidence of protected fauna or habitats capable of supporting such species.
<b>Results</b>	<p><i>Habitats</i></p> <ul style="list-style-type: none"> <li>• Three Natura 2000 sites are present within 15 km of the site; Derby Grange Colliery Ponds SAC, South Pennine Moors SAC; and Peak District Moors (South Pennine Moors Phase 1) SPA.</li> <li>• Six designated sites were present within 2 km of the site; Redbrook Pastures LWS, Hugset Wood LWS, Daking Brook LWS, Barnsley Canal at Wilthorpe LWS, Silkstone Fall Wood LWS and Falthwaite and Lowe Wood LWS.</li> <li>• The site was dominated by improved grassland and arable fields, with associated boundary hedgerows, trees and ditches. Areas of broad-leaved semi-natural woodland and semi-improved grassland were also present, along with smaller areas of dense scrub, tall ruderal, amenity grassland and bare ground. Eight buildings were present on site.</li> </ul>



	<p><i>Bats</i></p> <ul style="list-style-type: none"> <li>• No bat roosts were recorded on site, though seven buildings (including off site buildings which could be impacted by works) and 44 trees were considered to offer suitability for roosting bats.</li> <li>• One bat roost was recorded off site within Redbrook Farm farmhouse.</li> <li>• Site-wide bat activity surveys identified that common pipistrelle were the most frequently recorded species, with low numbers of <i>Myotis</i> sp., occasional soprano pipistrelles and very rarely, noctules, Leisler’s bats and brown long-eared bats. A single serotine call was identified in 2018 and a single Nathusius’ pipistrelle was identified in 2020.</li> </ul> <p><i>Birds</i></p> <ul style="list-style-type: none"> <li>• The site was considered to support a bird assemblage largely associated with farmland habitats, though also noting a number of garden bird species which was likely influenced by the adjacent residential areas.</li> <li>• In 2020, 43 species were identified on site, of which 33 were confirmed or possible breeders.</li> </ul> <p><i>Invertebrates</i></p> <ul style="list-style-type: none"> <li>• The site was considered likely to support common invertebrates but was considered unlikely to support notable populations of notable species.</li> </ul> <p><i>Invasive Species</i></p> <ul style="list-style-type: none"> <li>• Evidence of a historic Japanese knotweed stand was present in the west of the site; though this appeared to have been subject to treatment (note, details of treatment works are unknown – some living plant material / rhizomes may still be present).</li> </ul> <p><i>Other Species</i></p> <ul style="list-style-type: none"> <li>• A single hedgehog was recorded on site in 2020 and suitable habitat is present for hedgehog.</li> <li>• GCN, reptiles, badger, otter and water vole were considered likely absent from the site.</li> </ul>
<p><b>Recommendations</b></p>	<p>Recommendations will be provided within the Ecology Chapter of the Environmental Statement for the site.</p>



## Glossary

Badger Act	Protection of Badgers Act 1992
BBAP	Barnsley Biodiversity Action Plan
BBRC	Barnsley Biological Records Centre
BCT	Bat Conservation Trust
BoCC	Bird(s) of Conservation Concern
BSI	British Standard Institute
BTO	British Trust for Ornithology
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
DEFRA	Department for the Environment, Food and Rural Affairs
EcIA	Ecological Impact Assessment
EPS	European Protected Species
EPSML	European Protected Species Mitigation Licence
GCN	Great Crested Newt
Habitats Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HAP	Habitat Action Plan
Hedgerow Regulations	The Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MCIEEM	Full Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NERC Act	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRF	Potential Roost Feature
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
SYBG	South Yorkshire Bat Group
SYBgG	South Yorkshire Badger Group
W&CA	Wildlife & Countryside Act 1981 (as amended)



## 1.0 Introduction

### 1.1 Background

WYG was commissioned by Strata Sterling Barnsley West Ltd in May 2020 to undertake an updated Ecological Appraisal of the site known as 'Barnsley West'.

A Preliminary Ecological Appraisal was originally completed for the site in 2017 (AECOM, 2017); however, this is now considered to be out-of-date. As such, this report acts to provide update baseline information for the site.

This report has been prepared by WYG Project Ecologist Jonathan Siberry ACIEEM, who has over four years' experience of undertaking ecological appraisals. The conditions pertinent to this report are provided in Appendix A.

### 1.2 Site Location

The site is located 2 km west of Barnsley town centre, on farmland between the communities of Gawber, Higham, Pogmoor, Redbrook and Barugh Green and immediately north-east of Junction 37 of the M1 motorway. The centre of the site has an approximate Ordnance Survey Grid Reference of SE 31778 07075. The site boundary can be found on Figure 1.

The site has previously been subject to open-cast mining, after which it was re-filled. The site measures approximately 120 hectares and generally comprises of open pastoral and arable fields, with associated boundary hedgerows, trees and ditches, and areas of semi-natural plantation woodland.

### 1.3 Development Proposals

The proposals include for a mixed-use development to provide up to 1,900 new homes and 172,000sq.m of employment land. In addition, the proposals will provide:

- Part of the Link Road between M1, Junction 37 and the A635, Barugh Green Road;
- A new primary school;
- Small local shops and community facilities; and
- Strategic areas of greenspace and wildlife corridors.

Remodelling of the site (via a 'cut and fill') will also be required at the outset, to enable the formation of development platforms.

### 1.4 Purpose of the Report

The purpose of this report is to complete:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence; and



- An extended Phase 1 habitat survey, involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species.

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

A summary of the key legislation is also provided in Appendix B.

**Please note:** This is a factual report only with detailed discussion and any recommendations for further survey, mitigation and compensation being included within the commissioned Ecology Chapter of the Environmental Statement for the site.



## 2.0 Methodology

### 2.1 Desk Study

For the purposes of this assessment, existing data and species records from within the last 10 years are considered to be most relevant. Data / records greater than 10 years old are typically considered to be historic and as such, are not described in detail.

#### 2.1.1 Previous Reports

The following reports exist for the site and have been reviewed to inform this assessment:

- Wildscapes. (2013a). Land South of Barugh Green Road UB4A.
- Wildscapes. (2013b). Land South of Barugh Green Road UB4B.
- Wildscapes. (2014). Land at Higham UB2A.
- AECOM. (2017). Barnsley West: Preliminary Ecological Appraisal.
- WYG. (2018a). Barnsley West: Great Crested Newt eDNA Survey Report.
- WYG. (2018b). Barnsley West: Bat Survey Report.
- WYG. (2019a). Barnsley West: Badger and Hedgerow Survey Report.
- WYG. (2019b). Barnsley West: Breeding Bird Survey Report.
- WYG. (2020a). Barnsley West: Factual Badger and Hedgerow Survey Report.
- WYG. (2020b). Barnsley West: Factual Great Crested Newt eDNA Survey Report.
- WYG. (2020c). Barnsley West: Factual Bat Survey Report.
- WYG. (2020d). Barnsley West: Factual Breeding Bird Survey Report.

#### 2.1.2 Local Ecological Records Centre

Information was requested from Barnsley Biological Records Centre (BBRC) for information on any nature conservation designations and protected or notable species records within 2 km of the site.

The data search covered:

- Statutory designated sites for nature conservation, namely Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs);
- Non-statutory designated sites for nature conservation, namely LWS;
- Legally protected species, such as great crested newts *Triturus cristatus* (GCN), badger *Meles meles* and bats;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance (HPIs or SPIs); and,
- Priority habitats or species within the Barnsley Biodiversity Action Plan (BBAP).

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

#### 2.1.3 Local Species Recorders

The following local species recorder groups were also contacted for any relevant records that they held:



- Local Bat Group – South Yorkshire Bat Group (SYBG)
- Local Badger Group – South Yorkshire Badger Group (SYBgG)

Note that relevant extracts from the desk study are provided in Appendix C, as appropriate.

### 2.1.4 Online Resources

A search for relevant information was also made on the following websites:

- MAGIC [www.magic.gov.uk](http://www.magic.gov.uk) - DEFRA's interactive, web-based database for statutory designations within 15 km of site, use of Ordnance Survey (OS) maps to identify waterbodies within 500 m and information on any EPSML applications that have been granted in the local area; and
- Google Earth – to review aerial imagery for waterbodies located within residential gardens located directly adjacent to the site.

## 2.2 Field Surveys

The following methodologies have been used to identify the ecological receptors present on or near the site, which are relevant to the proposed development.

### 2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on 23<sup>rd</sup> and 24<sup>th</sup> June 2020 by WYG Project Ecologist Jonathan Siberry ACIEEM. Jonathan has over four years' experience of undertaking extended Phase 1 habitat surveys in the ecological consultancy sector and holds Natural England survey licences for bats, GCN and barn owl *Tyto alba*.

The weather conditions were hot (up to 28°C) and dry, with clear skies and low wind speeds (1-2 Beaufort Scale).

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The site was also appraised for its suitability to support notable flora, with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017).

### 2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRoW Act, those given extra protection under the NERC Act, and species included in the BBAP.

#### Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket & Foster, 2001).

For ponds located within private residential gardens (i.e. not accessible with approval from the private landowners), two written access request letters were sent to each respective residence in 2020; one



in late April and a second in early June. These access request letters were sent via tracked delivery, to obtain proof of postage. Where no response was received from a resident to either access request letter, it was assumed that access was denied at that particular residence. Evidence of proof of postage has been provided directly to the Local Planning Authority (via email to Barnsley Metropolitan Borough Council Biodiversity Officer Trevor Mayne, on 23<sup>rd</sup> July 2020).

**Bats**

Roosting Bats – Buildings / Structures / Trees

A separate site visit (in addition to the extended Phase 1 habitat survey visit) was made to assess any suitable buildings, structures or trees on site from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) – hereafter referred to as the ‘BCT Guidelines’. The categories used to classify the bat roost suitability of any features found, are explained in Table 1 below. The results of this assessment are summarised within this report.

**Table 1: Categories of Bat Roost Suitability (BCT Guidelines)**

Suitability	Typical Roosting Features
<b>Negligible</b>	Negligible habitat feature on site likely to be used by roosting bats.
<b>Low</b>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).  A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
<b>Moderate</b>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<b>High</b>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging/commuting Bats

The BCT Guidelines use the criteria in Table 2 below to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site.

**Table 2: Categories of Habitat Suitability (BCT Guidelines)**

Suitability	Typical Foraging & Commuting Features
<b>Negligible</b>	Negligible habitat features on site likely to be used by commuting or foraging bats.
<b>Low</b>	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
<b>Moderate</b>	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
<b>High</b>	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

### Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003).

### Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989).

### Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, birds and invertebrates with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development* (BSI, 2013). Evidence of any current or historical presence of such species was recorded.

#### 2.2.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed *Reynoutria japonica* (formerly *Fallopia japonica*), Indian (Himalayan) balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhododendron ponticum* × *Rhododendron maximum*. A full list of all invasive plant species is provided in Appendix B.



## 2.3 Limitations

No access was provided by the private homeowners for Ponds 2, 3, 5 or 6 (see Figure 4); therefore, these ponds were not subject to a HSI assessment. As detailed in Section 2.2.2, two access requests were made and either no response was received (note, proof of postage was obtained) or access was denied. However, it was still possible to assess the habitat located adjacent to these ponds and undertake a desk-based assessment to support assumptions made about each pond.

Due to the presence of livestock on site, some areas of site were avoided for health and safety reasons; however, it was possible to access each field on site in some capacity. For larger fields, these were assessed at multiple 'safe' points within the field, away from livestock. Binoculars were also used and less accessible fields were also viewed from adjacent fields, where possible, to provide increased survey coverage.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended.

The details of this report will remain valid for a period of **18 months** from the date of the survey (i.e. December 2021, after which the validity of this assessment should be reviewed to determine whether further updates are necessary).

### 3.0 Baseline Conditions

#### 3.1 Designated Sites

The following designated sites of ecological importance have been identified within 2 km of the site.

**Table 3: Designated Sites Within 2 km**

Designation	Site Name	Distance & Direction	Summary of features
LWS	Redbrook Pastures	Directly adjacent to eastern boundary	This LWS comprises two fields with hedgerows (some with mature trees) and areas of scattered scrub, both dominated by a neutral sward; although, the southern-most field contains elements of acidic grassland. English bluebell <i>Hyacinthoides non-scripta</i> and wood millet <i>Millium effusum</i> , both South Yorkshire indicators of ancient woodland, are present.
LWS	Hugset Wood	0.55 km west	Predominantly comprised of coniferous plantation with linear areas of broadleaved semi-natural woodland. Replanted ancient woodland and ancient and semi-natural woodlands form the main classifications of the site. Thirteen ancient woodland indicator species (flora) are cited. Other notable species include willow tit <i>Poecile montanus</i> , dunnock <i>Prunella modularis</i> , song thrush <i>Turdus philomelos</i> and white-letter hairstreak <i>Satyrrium w-album</i> .
LWS	Daking Brook	0.96 km north-west	An often tree-lined brook, which is largely unmodified and unpolluted. It flows west-east, passing through arable and pastoral farmland. Notable species cited include white-clawed crayfish <i>Austropotamobius pallipes</i> , brown trout <i>Salmo trutta</i> and bullhead <i>Cottus gobio</i> ). South Yorkshire ancient woodland indicator species Dog's mercury <i>Mercurialis perennis</i> , remote sedge <i>Carex remota</i> , English bluebell, wood sorrel <i>Oxalis acetosella</i> , greater stitchwort <i>Stellaria holostea</i> and opposite-leaved golden saxifrage <i>Chrysosplenium oppositifolium</i> have been present. Signal crayfish <i>Pacifastacus leniusculus</i> and Indian balsam have also been recorded.
LWS	Barnsley Canal at Wilthorpe	1.05 km north-east	This LWS comprises a stretch of the disused Barnsley Canal and adjacent pastoral farmland. The River Dearne is to the north of the LWS and a railway line is situated just south. An old section of the river forms part of the northern LWS boundary. Ancient woodland indicator species remote sedge, English bluebell, wood speedwell <i>Veronica montana</i> and sessile oak <i>Quercus petraea</i> are cited. Other notable species include reed bunting <i>Emberiza schoeniclus</i> , grasshopper warbler <i>Locustella naevia</i> ,

Designation	Site Name	Distance & Direction	Summary of features
			dunnock, bullfinch <i>Pyrrhula pyrrhula</i> and song thrush. Standing water offers potential habitat for GCN and common toad <i>Bufo bufo</i> are considered likely present.
LWS	Silkstone Fall Wood	1.59 km south-west	A mixture of semi-natural broad-leaved, mixed plantation and coniferous plantation woodland, with small watercourse and a small pond. South Yorkshire ancient woodland indicator species of remote sedge, English bluebell, wood millet <i>Milium effusum</i> , dog's mercury, sessile oak, greater stitchwort, wood speedwell, wood melick <i>Melica uniflora</i> , wood sorrel, yellow archangel <i>Lamium galeobdolon</i> and yellow pimpernel <i>Lysimachia nemorum</i> are all present on this site. Other notable species include willow tit, dunnock, bullfinch, song thrush and brown hare <i>Lepus europaeus</i> . Lesser-spotted woodpecker <i>Dendrocopos minor</i> has previously been recorded.
LWS	Falthwaite and Lowe Wood	1.95 km south	A site comprising a mixture of ancient woodland, lowland mixed deciduous woodland, ponds, two watercourses and grassland areas.

In addition to the above designations, three Natura 2000 sites were identified within 15 km of the site.

**Table 4: Natura 2000 Sites Within 15km**

Designation	Site Name	Distance and Direction	Summary of Features
SAC	Denby Grange Colliery Ponds	8.2 km north-west	Waterbody created by coal-mining activity, which has consistently yielded high counts of great crested newt in recent years.
SAC	South Pennine Moors	11.5 km south-west	European dry heaths, blanket bogs and old sessile oak woods (with <i>Ilex</i> and <i>Blechnum</i> ) are the primary features of selection. Northern Atlantic wet heaths (with <i>Erica tetralix</i> ) and transition mires and quaking bogs are also present but not a primary selection criteria.
SPA	Peak District Moors (South Pennine Moors Phase 1)	11.5 km south-west	Notable breeding populations (i.e. regularly used by 1% or more of the Great Britain population) of the following Annex 1 species; golden plover <i>Pluvialis apricaria</i> , merlin <i>Falco columbarius</i> and short-eared owl <i>Asio flammeus</i> .

## 3.2 Habitats

The following habitats have been identified through our assessment, with detailed Target Notes included in Appendix D, and shown on Figure 2a and Figure 2b, as appropriate. The abundance of botanical species within habitats has been assessed against the DAFOR<sup>1</sup> scale. Unless otherwise stated, there are not considered to have been any significant changes to the habitats on site since previous surveys (Wildscapes, 2013a; 2013b; 2014; & AECOM, 2017).

### 3.2.1 Broad-leaved Semi-natural Woodland

Three areas of broad-leaved semi-natural woodland were present on site. These woodland areas have previously been assessed as both semi-natural woodland (Wildscapes, 2013b; 2014) and plantation woodland (AECOM, 2017). Following the 2020 site visit by WYG and a review of historic maps<sup>2</sup>, the woodlands were assessed to be broad-leaved semi-natural, as they are mature plantations over 120 years old (with reference to JNCC, 2010). The woodlands are not listed as 'Ancient' on MAGIC.

The first woodland area was located in the east of the site, south of Hermit Lane (TN1). This area was dominated by pedunculate oak *Quercus robur*, with frequent sycamore *Acer pseudoplatanus* and occasional ash *Fraxinus excelsior*.

The further two areas of woodland were located north of Hermit Lane, with one small area in the centre of the site (TN2) and third running north-east, from the centre of the site, towards Redbrook Farm (TN3). The smaller area of woodland at TN2 was dominated by alder *Alnus glutinosa*, with frequent pedunculate oak. The woodland at TN3 covered a larger area and was dominated by pedunculate oak, with a number of frequent occurring species such as silver birch *Betula pendula*, ash and alder.

### 3.2.2 Dense Scrub

Within the grassland near Redbrook farm, an area of dense bramble *Rubus fruticosus agg.* was identified. In addition, small areas of dense scrub were present along the fence between the grassland and arable habitat to the north (TN4). A mixture of hawthorn *Crataegus monogyna*, rose *Rosa sp.* and bramble was present.

In the south-east of the site, two areas of dense scrub were present in the tall ruderal dominated field. The larger of the two areas (TN5) was dominated by mature hawthorn, with semi-mature ash and elder *Sambucus nigra*. The smaller area (TN6) was dominated by gorse *Ulex europaeus*, with abundant elder.

### 3.2.3 Scattered Scrub

Scattered scrub was associated with a number of field boundaries on site and was typically either bramble or hawthorn dominated (TN7).

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<sup>1</sup> DAFOR scale: D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare.

<sup>2</sup> 'Old-Maps' (<https://www.old-maps.co.uk/>) – Accessed 3<sup>rd</sup> December 2020



### 3.2.4 Broad-leaved Scattered Trees

Scattered trees were present along the section of Hermit Lane from Hermit House Farm, to the eastern-most site boundary (TN8). Species typically comprised pedunculate oak and ash. To the north of these trees, an isolated, mature pedunculate oak was located in the centre of an improved grassland field.

South of Hermit Lane, to the east of the site, further scattered trees were noted. Four pedunculate oaks were present within an improved grassland field (TN9). South of these trees, within an adjacent field, scattered trees including ash and silver birch were noted on the banks of a small stream (TN10). Three mature beech *Fagus sylvatica* were recorded in the east of the site (TN11), adjacent to Farm House Lane, and two mature ash trees were noted in the south and south-west of the site (TN12 & TN13).

### 3.2.5 Hedgerows

Approximately 40 hedgerows were identified on Site (see Figures 2a and 2b for hedgerow locations), nine of which (H3, H4a, H9, H13, H15a, H17a, H17b, H28, H35) were species rich. The majority of the remaining, species poor, hedgerows were intact, with approximately one-third being defunct, though some had been made stock proof through installation of fencing. Ground flora associated with the hedgerows was not considered to be notable and typically comprised species associated with the adjacent habitat type (typically improved grassland / arable fields).

Detailed hedgerow surveys were undertaken in 2020/21 to identify any 'Important' hedgerows, with reference to the Hedgerow Regulations 1997. Eight hedgerows (H13, H17, H17a, H17b, H2, H22a, H23 and H28) were considered to be 'Important' under the 'Wildlife and Landscape' criteria.

Please refer to the associated hedgerow survey reports for further details (WYG, 2019a; 2020a).

### 3.2.6 Semi-improved Neutral Grassland

Semi-improved neutral grassland was isolated to an area between the centre and east of the site, north of Hermit Lane (TN14). This grassland has historically been assessed as unimproved neutral grassland (Wildscapes, 2013b); however, had been assessed as semi-improved neutral grassland more recently (AECOM, 2017). This grassland was less intensively grazed than areas of improved grassland elsewhere on the site; however, the grassland is subject to regular grazing by a small number of cattle (observed to be grazed during all of the 2020 surveys) and large amounts of animal droppings were present, considered to provide enrichment to the soil. The grassland also had a lower abundance of rye-grasses *Lolium spp.* and white clover *Trifolium repens* but a greater abundance and diversity of vascular plant species than the improved grasslands on the site. As such, this grassland was assessed as semi-improved neutral grassland in 2020.

This grassland was in use by a small number of cattle for grazing, with a typical sward height of 5-10 cm; though some areas of taller grasses were occasionally present (up to 30 cm). The grassland showed a notably higher diversity of botanical species than the improved grassland fields on site. The sward was dominated by Yorkshire-fog *Holcus lanatus*, with frequent perennial rye-grass *Lolium perenne* and cock's-foot *Dactylis glomerata*. Herbs present included bird's-foot trefoil *Lotus corniculatus*, creeping cinquefoil *Potentilla reptans*, buttercups *Ranunculus spp.*, red clover *Trifolium pratense* and dove's-foot cranesbill *Geranium molle*.



### 3.2.7 Improved Grassland

Two improved grassland fields in the north of the site were grazed by horses and / or cattle (TN15 & TN16). Improved grassland areas to the south of Hermit Lane were of a similar nature to the two fields located in the north of the site but were grazed by horses, ponies and sheep (TN17 – TN31). Whilst botanical species differed from field-to-field, they were typically dominated by perennial rye-grass, with abundant annual meadow-grass *Poa annua* and herbs indicative of improved grassland habitats (i.e. plantain species *Plantago spp.*, white clover, daisy *Bellis perennis* and buttercup species). The abundance and diversity of vascular species was notably lower than the semi-improved grassland discussed above.

A further three improved grassland fields were present in the north of the site which differed from other improved fields on site due to their mixed usage (TN32). In the spring and early summer, these fields were used to grow grasses, for the purpose of creating hay / silage bales (as was the case during walkover). Following cutting of the fields and removal of bales in mid-summer, cattle are then allowed to graze on the fields. These fields were dominated by perennial rye-grass, with herbs typical of an improved grassland sward (e.g. plantain species, white clover and buttercup species).

### 3.2.8 Marshy Grassland

A small area of marshy grassland was present in the south of the site, fenced off from an improved grassland field (TN33). The area was dominated by soft rush *Juncus effusus*, with frequent bulrush *Typha latifolia*.

### 3.2.9 Amenity Grassland

Two residential gardens were present at Hermit House Farm and were indicative of amenity grass areas (TN34). They appeared to be subject to regular mowing and were dominated by perennial rye-grass, with abundant annual meadow-grass.

### 3.2.10 Tall Ruderal

A grazed field in the south-east of the site, located adjacent to Farm House Lane, was dominated by tall ruderal species, with areas of bare ground also present (TN35). This field was considered likely to have previously been of a similar nature to adjacent improved grassland areas (assessed as improved grassland in previous years (AECOM, 2017)); however, intensive grazing by ponies appears to have resulted in poaching of the field and heavy suppression of grass species. As such, tall ruderal species such as broad-leaved dock and nettle *Urtica dioica* have been able to colonise and dominate the area.

Smaller areas of tall ruderal were also present, located within the grassland near Redbrook Farm, adjacent to an arable field to the north of Hermit Lane and an improved grassland in the east of the site; dominated by spear thistle *Cirsium vulgare* and broad-leaved dock.

### 3.2.11 Standing Water

A single area of standing water was present on site; Pond 1, located within the woodland north of Hermit Lane (TN36). This standing water formed a pooled area of water, located along the stream which also runs through this woodland. A man-made dam created the pooling effect. At the time of the survey, the water was very shallow and turbid, with large areas of the pond noted to be heavily silted. Great willowherb *Epilobium hirsutum* was dominant, while bulrush was also abundant.



### 3.2.12 Running Water

Two streams were recorded on site; one located north of Hermit Lane (TN37) and another located to the south of Hermit Lane (TN38). The streams run west-east and south-north, respectively, before eventually merging into a single watercourse. This merge point is located off site, within the woodland to the east of the site (an extension of the woodland located at TN3). The streams both had a slow-moderate flow and lacked any significant aquatic vegetation. Both streams were located with woodland, resulting in heavy shading of the streams and banks (thus restricting bankside vegetation to species such as ivy *Hedera helix*).

### 3.2.13 Dry Ditch

A number of dry ditches were identified on site and were typically bare of vegetation. Although dry during the survey visit (in the summer – see TN39 for an example), some of these ditches have been observed to support water in previous months / years (during delivery of other habitat / species surveys on site). As such, these ditches were considered to support surface water runoff following prolonged periods of rain and during the wetter months of the year.

### 3.2.14 Arable

Three forms of arable farmland were present on site. Firstly, a large arable field in the north-west of the site contained a crop of wheat (TN40). Field margins of up to 1 m were present around the field and comprised a mixture of grasses and herbs, commonly found with improved grasslands.

Four arable fields did not appear to be seeded / contain any crops during the survey. The first, a large arable field split into two by a dry ditch and hedgerow, was present in the east of the site, adjacent to Farm House Lane (TN41). The remaining three uncropped fields were present in the south of the site (TN42).

The remaining arable fields (TN43 - TN46) were in use as hay meadows for the purpose of creating hay / silage bales and therefore assessed as arable land (with reference to JNCC, 2010). The fields have not been previously observed by WYG (during previous site visits for other habitat / protected species surveys) to be grazed by any horses or cattle after cutting; however, the fields located at TN44, TN45 and TN46 have previously been identified as improved grassland (Wildscapes 2013a; 2013b; 2014; & AECOM, 2017). Field margins in these fields were narrow (approx. 20-40 cm) and typically comprised similar grass species as the hay meadows. However, some other grasses and a higher proportion of herbs were also present (e.g. false oat-grass *Arrhenatherum elatius*, spear thistle, broad-leaved dock and cow parsley *Anthriscus sylvestris*). Species typically associated with arable margins were also present (i.e. brome species *Bromus spp.* and historic crops such as oil-seed rape *Brassica napus*).

### 3.2.15 Bare Ground

In the west of the site, poached ground from regular horse trampling and a large manure pile were noted (TN47). In the centre of the southern half of the site, poached ground caused by regular horse trampling was also noted (TN48).

### 3.2.16 Hardstanding

Bare ground associated with Hermit Lane and Hermit House Farm comprised concrete / asphalt hardstanding.



### 3.2.17 Buildings

A number of buildings were identified on and adjacent to the site. These are summarised below and shown on Figure 2a, Figure 2b and Figure 3. Please refer to Appendix E for descriptions and photographs of each building.

Eight buildings were present on site, all located at Hermit House Farm. These buildings comprised six outbuildings / barns (B1 – B6), constructed from brick / breeze block / meta and two stone built residential buildings (B7 & B8). Wooden cladding was present on some of the outbuildings / barns.

A further ten buildings were noted directly adjacent to the site or within areas which are now off site but have been previously surveyed due to their location within / proximity to the previous site boundary (as per WYG surveys in 2018 and 2019). Eight buildings were present at Redbrook Farm and were previously surveyed due to their location within or proximity to the 2018/2019 site boundary. Buildings at Redbrook Farm comprised of metal agricultural buildings / barns (B9, B10, B12, B13 and B17), stone / brick / breeze block-built outbuildings (B11, B14, B15 and B19) and a stone-built farmhouse (B16). Building 17 was previously located on site but falls outside of the current site boundary. It was located to the north of Redbrook Farm and comprised a derelict metal barn / shed. Building 18 remains directly adjacent to the southern part of the site (along the south-eastern boundary) and comprises a stone-built garage.

### 3.2.18 Fences

A number of fences were present on site and comprised a mixture of electric, post and wire and timber post and rail fences.

### 3.2.19 Wall

A single dry-stone wall was present in the south-west of the site (TN49). In addition, the neighbouring residential gardens included walls or a 'wall/fence mix' as boundary features.

## 3.3 Protected & Notable Species

The following should be read with reference to the detailed Target Notes included in Appendix D and shown on Figures 2a and 2b, as appropriate:

### 3.3.1 Great Crested Newts

#### Desk Study

BBRC returned 19 records of GCN with 2 km of the site, from the last 10 years. Of these recent records, 15 were from Barnsley Canal at Wilthorpe LWS, located between 0.9 – 1.8 km north-east of the site and with the most recent records dated 2016. The remaining four recent records were returned from a residential development site located to the north of Barugh Green, approximately 950 m north of the site and dated between 2012 and 2014. In addition, six historical records (over 10 years old) were returned, dated between 1983 and 1995.

A search of MAGIC identified two granted EPSML's for GCN on a single site located 775 m north of the site. These EPSML's allow for the damage and destruction of a GCN resting place(s).



The site is not connected to habitats associated with these GCN records or EPSML's but rather is separated from these habitats by residential and industrial areas and associated roads/infrastructure. These are considered to form an effective barrier to the movement of GCN.

A search of online OS maps identified one waterbody on site (Pond 1; TN36) and one waterbody within 500 m of the site (Pond 2). A review of residential gardens located directly adjacent to the site, using online aerial imagery, indicated the presence of three garden ponds and one potential garden pond within 500 m of the site (Ponds 3 – 6; Figure 4).

### Field Surveys

Of the waterbodies identified during the desk study, only Pond 1 and Pond 4 were accessible during the field survey (see Section 2.3 for details).

#### *Accessible Ponds*

Pond 1 measured approximately 25 m<sup>2</sup> and was located within the woodland north of Hermit Lane (TN36). The pond comprised an area of pooled area of water (created by a man-made dam), located along the stream which also runs through this woodland. The water was very shallow and turbid at the time of the survey. No fish were present but waterfowl could occasionally use the pond. Vegetation primarily comprised great willowherb and bulrush. The pond was surrounded by woodland habitat, with improved / semi-improved grassland located beyond the woodland.

Pond 4 measured approximately 115 m<sup>2</sup> and was located within 10 m of the site boundary. The pond was ornamental, with hard-engineered edges (e.g. steep concrete / stone edges) and water features (e.g. fountain). A net was present over the pond to prevent birds preying on the fish kept within the pond - approximately 400 fish were present<sup>3</sup>. Vegetation within the pond was limited. Habitat surrounding the pond comprised hardstanding and a lawned garden. Hedgerow H9 bounds the southern boundary of private garden within which Pond 4 was located.

#### *Inaccessible Ponds*

Descriptions of inaccessible garden ponds are based upon a review of available online imagery, unless otherwise stated.

Pond 2 and Pond 3 were both associated with a single private residence off Redbrook Road. The ponds were located in the garden of the residence, approximately 100 m east of the site and 25 m south-east of Redbrook Farm.

Pond 2 appeared to be an area of pooling water, associated with the stream running west-east from the centre of the site. It measured approximately 100 - 200 m<sup>2</sup> and also appeared to be shallow and littered with fallen leaves (observed from a distance, from accessible land). The pond was largely surrounded by woodland habitat (with some lawned garden to the north-east of the pond) and was directly linked to Pond 1 via a stream. Some aquatic vegetation was present.

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<sup>3</sup> Pers. comms. (face-to-face discussion) between WYG Project Ecologist Jonathan Siberry and the private homeowner on 26<sup>th</sup> June 2020



Pond 3 appeared to be ornamental, with 'hard-engineered' surfaces surrounding the pond. It measured approximately 25 m<sup>2</sup> and could support aquatic vegetation and fish.

Pond 5 was located directly adjacent to the west of the site (within a private garden associated with a residence off St John's Avenue) and measured approximately 6 m<sup>2</sup>. It appeared to be ornamental, with 'hard-engineered' surfaces surrounding the pond. A water feature could be heard from the site, though the pond itself was not visible. The presence of fish within this pond (as per Pond 4) is also possible. The pond appears to be surrounded by a lawned garden and hardstanding. Panel-style fencing was present on the northern, eastern and southern boundaries of the garden.

A 'potential pond' (Pond 6) was also located to the west of the site (within a private garden associated with another residence off St John's Avenue). Due to the smaller size of this potential pond (approximately 1 m<sup>2</sup>) and the quality of available aerial imagery, it was more difficult to confirm this as a garden pond). It appeared to be surrounded by a lawned garden and hardstanding, with some shrubs. The garden was bounded by hedgerows (on the north and eastern boundaries) and a panel-style fence (on the southern boundary).

### *Terrestrial Habitats*

The majority of site was comprised of improved grassland, grazed by cattle and / or horses. Large arable fields were also present on site. These habitats were typically considered to offer sub-optimal habitat for terrestrial GCN. Habitats which could offer greater value to terrestrial GCN included woodland and semi-improved grassland areas. Whilst habitats such as dense scrub and marshy grassland could also offer suitable terrestrial habitat for GCN, these habitats were limited on site. The network of hedgerows, typically bounding the improved and arable fields, and the dry ditches on site provided a potential means of commuting for terrestrial GCN and links to other suitable terrestrial habitats (e.g. woodland). Habitats such as amenity grassland and bare ground were considered unsuitable for GCN.

Habitats located directly adjacent to the site typically comprised private residential areas (including gardens). Residential areas largely comprised hardstanding, considered unsuitable for GCN, and residential gardens typically offer sub-optimal terrestrial habitat for GCN, due to the conventional management practices associated with residential gardens (e.g. regular mowing of grass). The presence of hardstanding area (e.g. patios) also reduces the suitability of gardens to support GCN. Some gardens offered connectivity to the site (where hedgerows or fencing with gaps were present around garden boundaries) whilst others were considered to be isolated (where panel-style fencing was present around garden boundaries). Whilst adjacent woodland habitat offers suitability for terrestrial GCN and adjacent improved grassland offers sub-optimal suitability, connectivity to other suitable off site habitats was limited. The residential areas of Higham, Gawber and Pogmoor, combined with the residential / industrial areas of Barugh Green and the presence of notable roads (e.g. M1 motorway, A635, A637) were considered to present potential barriers to GCN movement.

### **HSI Assessment**

The Habitat Suitability Index (HSI) assessment scores for Pond 1 and Pond 4 are detailed below in Table 5.

**Table 5: HSI Scores of Accessible Ponds**

Suitability Index	Pond 1	Pond 4
<b>Field location</b>	A (1.0)	A (1.0)
<b>Water feature area</b>	25 m <sup>2</sup> (0.05)	115 m <sup>2</sup> (0.2)
<b>Water feature drying</b>	Sometimes (0.5)	Never (0.9)
<b>Water quality</b>	Poor (0.33)	Poor (0.33)
<b>Shade</b>	30% (1.0)	10% (1.0)
<b>Fowl</b>	Minor (0.67)	Absent (1.0)
<b>Fish</b>	Absent (1.0)	Major (0.01)
<b>Pond density (number of ponds within 1 km)</b>	5 (1.0)	5 (1.0)
<b>Terrestrial habitat</b>	Moderate (0.67)	Poor (0.33)
<b>Macrophytes</b>	70% (1.0)	5% (0.33)
<b>HSI SCORE :</b>	<b>Below Average (0.57)</b>	<b>Poor (0.38)</b>

Ponds 2, 3, 5 and 6 were not accessible and therefore were not subject to a HSI assessment.

### Environmental DNA (eDNA) Survey

#### *2018 Survey (WYG, 2018a)*

WYG previously undertook eDNA surveys on site in 2018 (WYG, 2018a). Only Pond 1 was accessible for collection of water samples during this visit. A Negative result for the presence of GCN DNA was returned for Pond 1, indicating a likely absence of GCN. Please refer to the detailed GCN eDNA report for further details of the survey (WYG, 2018a).

#### *2020 Survey (WYG, 2020b)*

Update GCN eDNA surveys were recommended in 2020 on all accessible ponds located on or within 500 m of the site. WYG were commissioned to undertake these eDNA survey and were granted access to Pond 1 and Pond 4 to collect water samples for analysis. Both ponds returned a Negative result for the presence of GCN DNA, indicating a likely absence of GCN.

Please refer to the detailed GCN eDNA report for further details of the survey, including details regarding the lack of access to Ponds 2, 3, 5 and 6 (WYG, 2020b).



## Summary

Considering the largely sub-optimal habitats present on site, the limited connectivity of the site with other suitable off site habitats (and any known GCN populations) and the 'Negative eDNA' results returned from Pond 1 and Pond 4, **GCN were considered to be 'likely absent' from the site.**

### 3.3.2 Reptiles

BBRC returned two reptile records from within 2 km of the site. Both were historic adder *Vipera berus* records (dated 1989 and 2009) from Silkstone Wood LWS, located 1.59 km south-west of site. The M1 motorway acts as a barrier to dispersal between these records and the site.

The majority of the site comprised large arable or pastoral fields, which offer limited structural variability and were considered sub-optimal for reptiles. Habitats such as semi-improved grassland, scrub, tall ruderal, marshy grassland and woodland edges (primarily located between the centre and east of the site) provide some increased structural variation on site and provide greater suitability for reptiles. Hedgerows could provide commuting routes across the site for reptiles and a number of features which could offer potential refugia for reptiles were also recorded; including piles of brash, rubble and hay / grass cuttings (TN50). However, connectivity to suitable reptile habitat located off site was limited. The M1 motorway acts as a barrier to dispersal to the south and west of the site (the direction of the only known reptile records within 2 km of the site), whilst residential / commercial areas to the north, east and west act as further barrier. Redbrook Pastures LWS, located directly adjacent to the east of the site, could support reptiles but no known records were returned from this location and connectivity to other suitable habitats was lacking.

No sightings of reptiles were made on site or during any of the previous site surveys.

As such, **reptiles were considered 'likely absent' from the site.**

### 3.3.3 Bats

#### Desk Study

BBRC returned 61 recent records bat species within 2 km of the site, as summarised in Table 6 below. In addition, 121 historic records of bat were returned from within 2 km of the site, comprising field records of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, unknown pipistrelle species *Pipistrellus spp.*, brown long-eared bat *Plecotus auritus*, Leisler's bat *Nyctalus leisleri*, noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii*, *Myotis* species *Myotis spp.* and unknown bat species (total of 94 field records) and roost records of common pipistrelle, Leisler's bat, Daubenton's bat and unknown bat species (total of 27 roost records).

**Table 6: Recent Bat Records Returned by BBRC within 2 km of Site**

Scientific Name	Common Name	Record Type	Number of Records
Chiroptera	Bats	Field Record	1
<i>Myotis spp.</i>	Unidentified <i>Myotis</i> Species	Field Record	2
<i>Myotis daubentonii</i>	Daubenton's Bat	Field Record	2
<i>Nyctalus leisleri</i>	Lesser Noctule	Field Record	2



Scientific Name	Common Name	Record Type	Number of Records
<i>Nyctalus noctula</i>	Noctule Bat	Field Record	15
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	Roost	1
		Field Record	23
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	Field Record	4
<i>Pipistrellus spp.</i>	Pipistrelle Bat species	Field Record	12

SYBG returned 93 recent records of bats species within 2 km of site as summarised in Table 7 below. In addition, a further 173 historic records were returned and comprised records of noctule, unknown pipistrelle species, brown long-eared bat, unknown *Myotis* species, Natterer’s bats *Myotis nattereri*, unknown bat species, common pipistrelle, Leisler’s bat and Daubenton’s bat. Of these records, 110 were field records, whilst the remaining 63 records were of known roosts.

**Table 7: Recent Bat Records Returned by SYBG within 2 km of Site**

Scientific Name	Common Name	Record Type	Number of Records
Chiroptera	Bats	Field Record	1
<i>Myotis daubentonii</i>	Daubenton's Bat	Field Record	3
<i>Myotis mystacinus</i>	Whiskered Bat	Field Record	1
<i>Myotis spp.</i>	Natterer’s / Whiskered / Brandt’s Bat	Field Record	3
<i>Myotis spp.</i>	Unidentified Myotis Species	Field Record	2
<i>Nyctalus spp.</i>	Unknown Nyctalus Species	Field Record	1
<i>Nyctalus leisleri</i>	Leisler’s Bat	Field Record	2
<i>Nyctalus noctula</i>	Noctule Bat	Field Record	7
		Roost	1
<i>Plecotus auritus</i>	Brown Long-eared Bats	Field Record	3
		Roost	1
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	Field Record	50
		Roost	2
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	Field Record	13
<i>Pipistrellus spp.</i>	Pipistrelle Bat species	Field Record	3



A search of MAGIC identified one granted EPSML for bats within 2 km of the site. This granted EPSML was located 1.84 km east of the site, granted for destruction of a common pipistrelle resting place between 18<sup>th</sup> October 2013 and 30<sup>th</sup> September 2014.

### Roosting Bats

Opportunities for roosting bats were identified on site including within features of buildings and in suitable features of both woodland and scattered trees.

The site was previously subject to surveys for roosting bats in 2018, comprising bat roost suitability assessments and dusk emergence / dawn re-entry surveys (WYG, 2018b). During these surveys in 2018, 25 trees and seven buildings, which could have been impacted by the proposed development, were considered to offer bat roost suitability. Dusk emergence and dawn re-entry surveys did not identify any bat roosts on site. Please refer to the separate Bat Survey Report (WYG, 2018b) for full details of the 2018 bat surveys.

Update bat roost suitability assessments and subsequent dusk emergence / dawn re-entry surveys were undertaken during the 2020 bat survey season (WYG, 2020c). Forty-four trees and seven buildings, which could have been impacted by the proposed development, were considered to offer bat roost suitability. Dusk emergence and dawn re-entry surveys identified one common pipistrelle roost (of up to three individuals), located off site within the Redbrook Farm farmhouse. Please refer to the separate Bat Survey Report (WYG, 2020c) for full details of the 2020 bat surveys.

### Foraging and Commuting Bats

Reference to bat foraging and commuting habitat on the site within the original Preliminary Ecological Appraisal (AECOM, 2017) was limited and did not include an assessment of the site against the foraging / commuting suitability categories as detailed in the BCT Guidelines (Collins, 2016). However, assessment of the site's suitability to support foraging / commuting bats was made by WYG in 2018 (WYG, 2018b) and the site was considered to offer 'Moderate' suitability for foraging / commuting bats, with reference to the BCT Guidelines (Collins, 2016). The site was considered to offer 'Moderate' suitability due to the presence of continuous habitats (e.g. hedgerows, running water, woodland and improved grassland) which were connected to the wider landscape (e.g. connected to off-site woodland, running water and residential gardens).

Based upon the 'Moderate' suitability of the site, bat activity surveys were undertaken from April 2018 – September 2018 (inclusive), with reference to the BCT Guidelines. In summary, common pipistrelle was the most frequently recorded species, with low numbers of *Myotis sp.*, occasional soprano pipistrelles and very rarely, noctules, Leisler's bats and brown long-eared bats. A single call was also attributed to a serotine *Eptesicus serotinus*. Please refer to the separate Bat Survey Report (WYG, 2018b) for full details of the 2018 bat surveys, including areas of greatest value to bats.

In 2020, the site had not been subject to any significant changes since 2018 and; therefore, was considered to still offer 'Moderate' suitability for foraging / commuting bats. Update bat activity surveys were undertaken from June 2020 – October 2020 (inclusive), with reference to the BCT Guidelines. In summary, species composition and recording rates were similar to that of 2018; however, no serotines were recorded during 2020, though a single Nathusius' pipistrelle *Pipistrellus nathusii* was recorded. Please refer to the separate Bat Survey Report (WYG, 2020c) for full details of the 2020 bat surveys, including areas of greatest value to bats.



### 3.3.4 Badger

Due to the sensitive nature of the location of badger records, due to the risk of persecution, data search records for badger have not been detailed within the main body text of this report. For data search information relating to badger, please see Appendix F (CONFIDENTIAL – Not for Public Distribution).

The majority of the site comprised vast areas of farmland (arable and pastoral), with large areas of woodland also present. The habitats were considered to provide suitable habitat for badgers to forage and create setts. Semi-improved grassland and poached areas of ground also provided opportunities for foraging, while hedgerows provided potential commuting routes for badger. However, as detailed in Section 3.3.2, barriers to dispersal were present around much of the site, including the M1 motorway to the south and west of the site and residential / commercial areas to the north, east and west. Though these barriers to dispersal were present, badgers are mobile creatures and given the large areas of typically suitable badger habitat on site (e.g. farmland and woodland), detailed badger surveys were undertaken across the site (WYG, 2019a; 2020a).

Surveys undertaken in 2018 and 2019 (approximately one third of the site was surveyed in 2018 and the remaining areas surveyed in 2019) identified no evidence of badger and / or setts (WYG, 2019a). An update badger survey of the entire site in 2020 also found no evidence of badger and / or setts (WYG, 2020a). In addition, no sightings of badger were made during any other survey visits to the site (as per list provided in Section 2.1.1).

### 3.3.5 Otter & Water Vole

BBRC returned 20 historic records of water vole *Arvicola amphibious* from within 2 km of the site. The most recent record was from 2004 (located 1.8 km from site at Barnsley Canal at Wilthorpe LWS). No records of otter *Lutra lutra* were returned.

Two streams with running water were present during the site walkover; one located north of Hermit Lane (TN37) and another located to the south of Hermit Lane (TN38). Both streams lacked any significant aquatic vegetation and bankside vegetation was also limited, largely as a result of significant shading of the trees by the woodland canopies, under which they were located. The streams were relatively shallow (up to approx. 20 cm deep in the deepest areas, though often approx. 10 cm deep or less). No fish were observed within the streams and no evidence of any burrows or potential otter holts / resting features were observed during the Phase 1 habitat survey.

In addition, several dry ditches were identified; however, the majority of these had shallow channels and were considered likely to only support water during periods of heavy rainfall or during wetter months. As such, no aquatic vegetation was recorded within these dry ditches. Ditches were either bare or included species associated with surrounding terrestrial habitats (e.g. grasses and brambles).

A review of online imagery suggested no clear connectivity between any running water or ditches on site with any watercourses located beyond the M1 motorway or the built-up residential / commercial areas. Any connections (if any) would require a significant length of sub-surface watercourses / drainage infrastructure.

Given the results detailed above, **otter and water vole were considered likely absent from the site.**



### 3.3.6 Birds

BBRC returned 4234 records of bird species within 2 km of the site, of which 1816 were recent and comprised records of 71 species. Recent records from within 2 km are summarised below in Table 8.

**Table 8: Bird Species Returned by BBRC within 2 km of Site**

Scientific Name	Common Name	No. of Records	Latest Year
<i>Acanthis cabaret</i>	Lesser redpoll	10	2017
<i>Acanthis flammea</i>	Common (Mealy) redpoll	5	2012
<i>Alauda arvensis</i>	Skylark	20	2018
<i>Alcedo atthis</i>	Kingfisher	23	2017
<i>Anas clypeata</i>	Shoveler	2	2013
<i>Anas crecca</i>	Teal	29	2016
<i>Anas penelope</i>	Wigeon	2	2010
<i>Anas platyrhynchos</i>	Mallard	39	2014
<i>Anas strepera</i>	Gadwall	19	2016
<i>Anser albifrons</i>	White-fronted goose	2	2016
<i>Anser brachyrhynchus</i>	Pink-footed goose	82	2018
<i>Anthus pratensis</i>	Meadow pipit	48	2019
<i>Anthus spinoletta</i>	Water pipit	2	2018
<i>Anthus trivialis</i>	Tree pipit	2	2011
<i>Apus apus</i>	Swift	47	2019
<i>Aythya fuligula</i>	Tufted duck	5	2013
<i>Caprimulgus europaeus</i>	Nightjar	1	2011
<i>Charadrius dubius</i>	Little ringed plover	4	2010
<i>Chroicocephalus ridibundus</i>	Black-headed gull	9	2015
<i>Cinclus cinclus</i>	Dipper	8	2019
<i>Columba oenas</i>	Stock dove	23	2020
<i>Cuculus canorus</i>	Cuckoo	14	2011
<i>Cygnus olor</i>	Mute swan	4	2013
<i>Delichon urbicum</i>	House martin	58	2018
<i>Emberiza citrinella</i>	Yellowhammer	40	2019
<i>Emberiza schoeniclus</i>	Reed bunting	50	2015
<i>Falco columbarius</i>	Merlin	2	2014
<i>Falco peregrinus</i>	Peregrine	23	2018
<i>Falco subbuteo</i>	Hobby	7	2018
<i>Falco tinnunculus</i>	Kestrel	55	2018
<i>Fringilla montifringilla</i>	Brambling	14	2018
<i>Gallinago gallinago</i>	Snipe	85	2017
<i>Haematopus ostralegus</i>	Oystercatcher	19	2013
<i>Hirundo rustica</i>	Swallow	24	2018
<i>Larus fuscus</i>	Lesser black-backed gull	2	2017
<i>Linaria cannabina</i>	Linnet	22	2017



Scientific Name	Common Name	No. of Records	Latest Year
<i>Locustella naevia</i>	Grasshopper warbler	16	2012
<i>Lymnocyptes minimus</i>	Jack snipe	58	2015
<i>Motacilla cinerea</i>	Grey wagtail	37	2018
<i>Motacilla flava</i>	Yellow wagtail	2	2017
<i>Muscicapa striata</i>	Spotted flycatcher	2	2016
<i>Numenius arquata</i>	Curlew	1	2013
<i>Oenanthe oenanthe</i>	Wheatear	2	2011
<i>Pandion haliaetus</i>	Osprey	4	2011
<i>Passer domesticus</i>	House sparrow	43	2017
<i>Passer montanus</i>	Tree sparrow	15	2018
<i>Perdix perdix</i>	Grey partridge	22	2019
<i>Pernis apivorus</i>	Honey buzzard	2	2010
<i>Phalacrocorax carbo</i>	Cormorant	5	2015
<i>Phylloscopus trochilus</i>	Willow warbler	14	2014
<i>Picus viridis</i>	Green woodpecker	46	2019
<i>Pluvialis apricaria</i>	Golden plover	12	2018
<i>Poecile montana</i>	Willow tit	61	2015
<i>Prunella modularis</i>	Dunnock	36	2020
<i>Pyrrhula pyrrhula</i>	Bullfinch	101	2020
<i>Rallus aquaticus</i>	Water rail	67	2018
<i>Regulus ignicapilla</i>	Firecrest	5	2016
<i>Regulus regulus</i>	Goldcrest	43	2018
<i>Riparia riparia</i>	Sand martin	6	2018
<i>Scolopax rusticola</i>	Woodcock	11	2017
<i>Strix aluco</i>	Tawny owl	22	2018
<i>Sturnus vulgaris</i>	Starling	41	2018
<i>Sylvia communis</i>	Whitethroat	19	2018
<i>Tachybaptus ruficollis</i>	Little grebe	3	2016
<i>Tadorna tadorna</i>	Shelduck	2	2010
<i>Tringa ochropus</i>	Green sandpiper	17	2018
<i>Turdus iliacus</i>	Redwing	86	2020
<i>Turdus philomelos</i>	Song thrush	67	2020
<i>Turdus pilaris</i>	Fieldfare	59	2020
<i>Turdus viscivorus</i>	Mistle thrush	39	2020
<i>Vanellus vanellus</i>	Lapwing	49	2018

Given the presence of farmland habitats, including pastoral fields, arable fields and associated boundary habitats such as hedgerows and scattered trees / scrub, the site was considered to provide suitable habitat for a variety of passerine (perching birds) and non-passerine species. Birds recorded on site during the extended Phase 1 habitat survey included lapwing *Vanellus vanellus*, starling *Sturnus vulgaris* (foraging on improved grassland – juveniles also present), buzzard *Buteo buteo*, goldfinch *Carduelis carduelis*, magpie *Pica pica*, blue tit *Cyanistes caeruleus*, swallow *Hirundo rustica*,



skylark *Alauda arvensis*, carrion crow *Corvus corone*, linnet *Linaria cannabina*, kestrel *Falco tinnunculus*, wren *Troglodytes troglodytes*, blackbird *Turdus merula*, woodpigeon *Columba palumbus*, jackdaw *Corvus monedula*, dunnoek *Prunella modularis* and black-headed gull *Chroicocephalus ridibundus* (foraging on cut silage field).

Given the suitability of the habitats on site to support a variety of birds, including notable species, a suite of breeding bird surveys were undertaken in 2018 (WYG, 2019b) and subsequently updated in 2020 (WYG, 2020d). Surveys in 2018 (WYG, 2019b) identified 44 bird species on site, comprising 11 Birds of Conservation Concern (BoCC) Red listed species and seven BoCC Amber listed species. Eight SPI were also identified. Eleven notable birds (i.e. W&CA Schedule 1 / SPI / BoCC Red or Amber) and 22 BoCC Green listed bird were considered to be confirmed or possible breeders. In comparison, in 2020 (WYG, 2020d) 43 bird species were identified on site, comprising eight BoCC Red listed species and seven BoCC Amber listed species. Eleven SPI were also identified. Twelve notable birds and 21 BoCC Green listed bird were considered to be confirmed or possible breeders. In both 2018 and 2020, the site was considered to support a bird assemblage largely associated with farmland habitats, though also noting a number of garden bird species which was likely influenced by the residential areas located adjacent to the site.

The Peak District Moors / South Pennine Moors Phase 1 SPA include merlin, golden plover and short-eared owl on the list of qualifying features. Although the habitats on site could support short-eared owl and wintering golden plover, due to the distance between the SPA and the site (11.5 km), it is considered unlikely that that the site would support birds from this SPA. In addition, no short-eared owls (commonly daytime hunters) were recorded during any surveys on site and no records were returned from the data search within the data search. Habitats on site are not considered suitable to support merlin.

An incidental record of a single barn owl (foraging between the woodland and arable field, located north of Hermit Lane) was made during the October 2020 bat activity survey (WYG, 2020c); however, no other observations of barn owls were made during any other surveys on site.

### 3.3.7 Invertebrates

BBRC returned 168 records of invertebrates within 2 km of the site, of which 122 were recent. These 122 records comprised records of only five species; small heath *Coenonympha pamphilus*, dingy skipper *Erynnis tages*, wall butterfly *Lasiommata megera*, white-letter hairstreak *Satyrrium w-album* and cinnabar moth *Tyria jacobaeae*.

Invertebrates recorded on site during the extended Phase 1 habitat survey included a white butterfly *Pieris spp.*, small heath, meadow brown *Maniola jurtina*, small tortoiseshell *Aglais urticae* and peacock butterfly *Aglais io* caterpillars. The food plants of these species are detailed below in Table 9.

**Table 9: Invertebrates Observed on Site and Associated Food Plants**

Species	Food plants*
<b>White Butterflies</b> <i>Pieris spp.</i>	Various, dependent on butterfly species, however, large white <i>Pieris brassicae</i> , small white <i>Pieris rapae</i> and green-veined white <i>Pieris napi</i> show preferences for wild or cultivated crucifers (e.g. charlock <i>Sinapis arvensis</i> and <b>garlic mustard</b> <i>Alliaria petiolata</i> ) and Brassicas (e.g.



Species	Food plants*
	cultivated varieties of <i>Brassica oleracea</i> such as cabbage and brussels-sprout).
<b>Small Heath</b> <i>Coenonympha pamphilus</i>	Fine grasses, especially fescues <i>Festuca</i> spp., <b>meadow-grasses</b> <i>Poa</i> spp. and <b>bents</b> <i>Agrostis</i> spp.
<b>Meadow Brown</b> <i>Maniola jurtina</i>	A wide range of grasses is used. Those with finer leaves such as . <b>fescues</b> <i>Festuca</i> spp. <b>bents</b> <i>Agrostis</i> spp. and <b>meadow-grasses</b> <i>Poa</i> spp. are preferred, but some coarser species such as <b>cock's-foot</b> <i>Dactylis glomerata</i> , downy oat-grass <i>Helictotrichon pubescens</i> and false brome <i>Brachypodium sylvaticum</i> are also eaten by larger larvae. Other species of grass are also believed to be used.
<b>Small Tortoiseshell</b> <i>Aglais urticae</i>	<b>Common nettle</b> <i>Urtica dioica</i> and small nettle <i>U.urens</i> are used
<b>Peacock</b> <i>Inachis io</i>	<b>Common nettle</b> , although eggs and larvae are occasionally reported on and Small Nettle and Hop <i>Humulus lupulus</i>
* <b>bold text</b> denotes floral species 'found on site'	

Much of the site comprised heavily grazed improved grassland or arable areas, both of which were considered to provide limited opportunities for invertebrates; however, any arable fields planted with crops such as oil-seed rape (though no oil-seed rape crops were observed on site) or in use as hay meadows (TN43 – TN46) would offer greater value. Other notable habitat areas included areas of woodland, semi-improved grassland, the arable fields which were being managed as hay meadows (TN43 – TN46) and the lengths of hedgerow. These habitats were considered to offer greater opportunities for invertebrates. In addition, tall ruderal areas (e.g. TN35), or grasslands and field margins containing tall ruderal species, could be beneficial to species such as small tortoiseshell and peacock butterfly, and the presence of large numbers of livestock (resulting in large amounts of animal droppings which could attract invertebrates) could also be beneficial to general invertebrate populations.

**The site was considered likely to support populations of common invertebrates but was considered unlikely to support any notable species or populations.**

### 3.3.8 Non-native Invasive Species

BBRC did not return any records of non-native invasive species within 2 km of the site.

One instance of a non-native invasive species was made on site; this comprised evidence of Japanese knotweed in the west of the site, though it appeared to have been subject to treatment (TN51). It should be noted that it is unknown what treatment method(s) have been used on this knotweed stand, whether these works have been completed by an appropriately qualified person or how recently these eradication works have taken place. As such, some non-visible growth and / or rhizomes may still be present.

No other records of non-native invasive species were recorded on site.



### 3.3.9 Other Notable Species

BBRC returned 15 recent records of West European hedgehog *Erinaceus europaeus* within 2 km of the site. The most recent record (dated 2019) was located 1.5 km south-west of the site. The nearest record to site was of a road casualty on Wilthorpe Road in 2017, located 200 m north-east of the site.

Foraging opportunities for hedgehog existed on site in the form of improved and semi-improved grassland, as well as the limited areas of amenity grassland. Hedgehog could seek refuge and / or hibernate with the woodland areas, dense scrub or hedgerows and could also use hedgerows and woodland areas as commuting corridors. The presence of numerous residential gardens adjacent to the site is also likely to benefit hedgehogs, by providing additional suitable habitat and potential connectivity to off-site areas.

A single hedgehog was observed on site during the July 2020 bat activity survey, located along a field boundary of the arable field in the east of the site (TN41).

## 3.4 Importance of Ecological Features

In line with the CIEEM PEA Guidelines, and based on the above baseline information, the importance of each ecological feature recorded within the study area is given in Table 4 below. The categories used are those which are defined in Section 4 of the CIEEM EcIA Guidelines (2018 v1.1):

**Table 10: Importance of Ecological Features**

Feature	Importance	Rationale
Denby Grange Colliery Ponds SAC	International	European designated site, citing consistently high counts of great crested newt.
South Pennine Moors SAC	International	European designated site, citing notable heathland habitats.
Peak District Moors (South Pennine Moors Phase 1) SPA	International	European designated site, citing notable breeding populations of golden plover, merlin and short-eared owl.
Local Wildlife Sites (Redbrook Pastures; Hugset Wood; Daking Brook; Barnsley Canal at Wilthorpe; Silkstone Fall Wood; and Falthwaite and Lowe Wood)	District	Sites designated by the Local Authority for their ecological value.
Hedgerows, broad-leaved semi-natural woodland, broad-leaved scattered trees, and running water	Local	Generally well-established habitats located on a rural-urban fringe, which would take a number of years to recreate. They also offer connectivity to across the site and some off-site habitats (including the Redbrook Pastures LWS). However, it should be noted that connectivity to off-site habitats is limited by surrounding urban areas / major roads and



Feature	Importance	Rationale
		there is a considerable resource of these habitats in the Local context.
Bare ground, buildings and hardstanding, fences, dry ditches, standing water, tall ruderal, marshy grassland, walls, improved/semi-improved grassland, arable, amenity grassland, dense scrub, scattered scrub	Negligible	Habitats of limited area or which appeared to be in poor condition. Considered unlikely to be of any notable value, though these habitats do have some intrinsic value.
Bats	Local	Though the site primarily supports common pipistrelle, a number of species have been recorded foraging and commuting across the site.
Birds	Local	The site is known to support notable and common birds, including notable breeding species.
Invertebrates	Negligible	Site is likely to support a number of common invertebrates but is considered unlikely to support notable populations of notable species.
Hedgehog	Negligible	Hedgehog are listed under the Barnsley LBAP but across two survey seasons (2018 & 2020), largely comprised of night-time bat surveys, there were only two observations of hedgehog.
GCN, reptiles, badger, otter and water vole	Negligible	Considered likely absent from site, though precautionary measures may be required for more mobile species.
Non-native invasive species	N/A	No ecological importance but listed on Schedule 9 of the W&CA, making it an offence to allow / cause spread into the wild.
<p><b>Either:</b> International (incl. European) / National / Regional / District / Local / Negligible  <b>Or:</b> Unknown (i.e. further surveys/information needed)</p>		

The following definitions have been used to inform Table 10:

- Regional – defined at the Yorkshire and Humberside Region
- District – defined as the Metropolitan District of Barnsley
- Local – defined as the parishes of Cawthorne, Silkstone, Stainborough and the western are of Barnsley District parish. These areas have been included within the Local context due to their proximity to site and to include nearby semi-rural areas (similar to the site).



## 4.0 Relevant Planning Policy & Legislation

### 4.1 Revised National Planning Policy Framework

A revised NPPF was issued on 19<sup>th</sup> February 2019 (Ministry of Housing Communities and Local Government, 2019) and currently supplements government Circular 06/2005, *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System* (Office of the Deputy Prime Minister, 2005).

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 170 of the NPPF also states that:

*‘Planning policies and decisions should contribute to and enhance the natural environment by:*

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

Paragraph 175 then goes on to confirm that:

*When determining planning applications, local planning authorities should apply the following principles:*

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*



- c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, Paragraph 177 clarifies that:

*"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."*

Paragraph 180 is also relevant as;

*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:...*

- c) *limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

## **4.2 Biodiversity 2020: A strategy for England's Wildlife & Ecosystem Services**

Biodiversity 2020 (DEFRA, 2011) replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix B for further details).

## **4.3 Local Biodiversity Action Plan**

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The BBAP (Barnsley Biodiversity Trust, 2009) is the relevant document for this site and it contains the following relevant Habitat & Species Action Plans:



**Table 11: BBAP SAPs**

Species Action Plans	
Hedgehog	Skylark
Bats	Tree sparrow
Water Vole	Twite <i>Linaria flavirostris</i>
Otter	Great crested newt
Grey Partridge	Salmon <i>Salmo salar</i>
Bittern <i>Botaurus stellaris</i>	Bullhead
Kestrel	White-clawed crayfish
Little ringed plover	Glow worm <i>Lampyrus noctiluca</i>
Lapwing	Dingy skipper
Barn owl	Bluebell

**Table 12: BBAP HAPs**

Habitats Action Plans	
Upland Oakwood	Lowland Heathland
Lowland Mixed Deciduous Woodland	Upland Heathland
Wet Woodland	Blanket Bog
Wood Pasture and Parkland	Purple Moor Grass and Rush Pasture
Hedgerows	Reedbeds
Arable Field Margins	Ponds
Floodplain Grazing Marsh	Rivers
Lowland Meadows	Open Mosaic Habitats on Previously Developed Land
Lowland Dry Acidic Grassland	

It should be noted that the existence of a SAP or HAP does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).

## 4.4 Local Plan

The Barnsley Local Plan (Barnsley Metropolitan Brough Council, 2019) was formally adopted on 3<sup>rd</sup> January 2019 and sets out the key elements of Barnsley’s planning framework up to the year 2033. The relevant policies from the Local Plan are detailed below:

### ***Policy BIO1 Biodiversity and Geodiversity***

*Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:*



- *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.*
- *Maximising biodiversity and geodiversity opportunities in and around new developments.*
- *Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*
- *Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.*
- *Protecting ancient and veteran trees where identified.*
- *Encouraging provision of biodiversity enhancements.*

*Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.*

*Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI).*

Local Plan Objective 5 is also relevant and is to “achieve net gains in biodiversity”. The Indicator / Target for this object is referenced as the “number of Local Wildlife Sites and Rigs sites in positive conservation management” and the Aim of this objective is “to conserve and enhance the Borough’s biodiversity and geological features”.

#### **Site MU1 Land south of Barugh Green Road**

*The site is proposed for mixed use predominantly for housing and employment. The indicative number of dwellings proposed on this site is 1700. These are included in the housing numbers for Urban Barnsley in the housing chapter.*

*43 ha of employment land is proposed on the site and is included in the employment land figures in the Urban Barnsley section of the Economy chapter.*

*The development will be subject to the production and approval of a Masterplan Framework covering the entire site which seeks to ensure that the employment land is developed within the plan period, that community facilities come forward before completion of the housing and that development is brought forward in a comprehensive manner.*

*The development will be expected to:*

- *Provide a primary school on the site;*
- *Ensure that ground stability and contamination investigations are undertaken prior to development commencing and necessary remedial works completed in accordance with the phasing plan;*



- *Provide on and off site highway infrastructure works, including a link road (Claycliffe Link) and improvements at Junction 37 as necessary;*
- *Provide small scale convenience retail and community facilities in compliance with Local Plan policy TC5 Small Local Shops;*
- *Retain, buffer and manage the watercourse, grassland and woodland north-east of Hermit Lane;*
- *Retain, buffer and manage the species-rich hedgerows and boundary features. Where this is not possible transplant hedgerows including root balls and associated soils. A method statement for this should be provided and agreed prior to works commencing;*
- *Create/retain wildlife corridors through/across the site;*
- *Provide accessible public open space;*
- *Ensure that any sustainable drainage system incorporating above-ground habitats is designed from the outset to serve the whole site;*
- *Give consideration to the drain/culvert that runs through the site; and*
- *Include measures for the protection and retention of the listed milepost on Barugh Green Road 500 m west of the junction with Claycliffe Road and its immediate setting; and*
- *Protect the routes of the Public Rights of Way that cross the site, and make provision for these as part of any proposal.*

*Archaeological remains may be present on this site therefore proposals must be accompanied by an appropriate archaeological assessment (including a field evaluation if necessary) that must include the following:*

- *Information identifying the likely location and extent of the remains, and the nature of the remains;*
- *An assessment of the significance of the remains; and*
- *Consideration of how the remains would be affected by the proposed development.*

### 4.5 Legislation

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix B. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- Harm to a Natura 2000 site
- Disturbance or killing of an EPS (bats)
- Disturbance of nesting wild birds
- Cause of permit the spread of an invasive species into the wild



## 5.0 Summary

### 5.1 Designated Sites

- Three Natura 2000 sites are present within 15 km of the site; Denby Grange Colliery Ponds SAC, South Pennine Moors SAC; and Peak District Moors (South Pennine Moors Phase 1) SPA.
- Six designated sites were present within 2 km of the site; Redbrook Pastures LWS, Hugset Wood LWS, Daking Brook LWS, Barnsley Canal at Wilthorpe LWS, Silkstone Fall Wood LWS and Falthwaite and Lowe Wood LWS.

### 5.2 Habitats

- The site was dominated by improved grassland and arable fields, with associated boundary hedgerows, trees and ditches. Areas of broad-leaved semi-natural woodland and semi-improved grassland were also present, along with smaller areas of dense scrub, tall ruderal, amenity grassland and bare ground. Eight buildings were present on site.
- Important hedgerows were identified on site.

### 5.3 Protected & Notable Species

#### Great Crested Newt

- Five ponds and one potential pond (observed only from online aerial imagery) were identified on or within 500 m of the site.
- Only two ponds were accessible for HSI assessment; Pond 1 (located on site) which scored as 'Below Average' and Pond 4 (located directly adjacent to the north of the site) which scored as 'Poor'.
- eDNA analysis was also undertaken on accessible ponds (Pond 1 and Pond 4), with both ponds returning Negative results for the presence of GCN DNA.
- The majority of the site (improved grass and arable fields) was considered to provide sub-optimal terrestrial habitat for GCN; however, woodland and semi-improved grassland, along with smaller areas of marshy grassland and dense scrub, provided greater terrestrial suitability. Hedgerows and dry ditches were considered to provide potential connectivity across the site for GCN; however, off site habitats were largely sub-optimal and offered little connectivity to other suitable habitat.
- **GCN were considered likely absent from the site.**

#### Reptiles

- The majority of the site comprised large arable or pastoral fields and offered limited structural variability. As such, the majority of the site was considered sub-optimal for reptiles.
- Semi-improved grassland, scrub, tall ruderal, marshy grassland and woodland edges were considered to provide suitable habitat on site. Hedgerows also offered potential commuting routes across the site. However, there was limited connectivity between the site and other suitable habitat.
- No sightings of reptiles were made during the survey or any other surveys on site.
- **Reptiles were considered likely absent from the site.**



### Bats

- No bat roosts were identified on the site; though seven buildings (which could have been impacted by the proposed works) and 44 trees were considered to offer suitability for roosting bats.
- One common pipistrelle roost was identified in 2020, within Redbrook Farm farmhouse.
- Site-wide bat activity surveys identified that common pipistrelle were the most frequently recorded species, with low numbers of *Myotis sp.*, occasional soprano pipistrelles and very rarely, noctules, Leisler's bats and brown long-eared bats. A single serotine call was identified in 2018 and a single Nathusius' pipistrelle was identified in 2020.

### Badgers

- Suitable habitat was present on site to support badger foraging and sett creation.
- No evidence of badger was recorded during the survey, nor during dedicated badger surveys across the site.
- **Badger were considered likely absent from the site.**

### Otter and Water Vole

- Habitats on site were considered to be sub-optimal and there appeared to be limited connectivity to other off site habitats.
- **Otter and water vole were considered likely absent from the site.**

### Birds

- The site was considered to support a bird assemblage largely associated with farmland habitats, though also noting a number of garden bird species which was likely influenced by the adjacent residential areas.
- In 2020, 43 species were identified on site, of which 33 were confirmed or possible breeders. Of the confirmed and possible breeders, these comprised seven BoCC Red listed species and five BoCC Amber listed species. Eleven SPI were also confirmed or possible breeders.
- An incidental record of a single barn owl (foraging between the woodland and arable field, located north of Hermit Lane) was made during the October 2020 bat activity survey.

### Invertebrates

- The majority of the site comprised grazed improved grassland or arable farmland which were considered to offer limited opportunities for invertebrates.
- Woodland, semi-improved grassland, hay meadows and hedgerows were considered to offer greater value to invertebrates.
- **The site was considered likely to support common invertebrates but was considered unlikely to support notable population of notable species.**

### Non-Native Invasive Species

- Evidence of a historic Japanese knotweed stand was present in the west of the site; though this appeared to have been subject to treatment (note, details of treatment works are unknown – some living plant material / rhizomes may still be present).



### Other Notable Species

- Suitable habitat was present on site for foraging hedgehog and hedgehogs seeking refuge / hibernacula.
- A single hedgehog was observed on site during the July 2020 bat activity survey.

**Please note:** This is a factual report only with detailed discussion and any recommendations for further survey, mitigation and compensation being included within the commissioned Ecology Chapter of the Environmental Statement for the site.



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Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix B below.



**Figure 1 – Site Location Plan**

**Figure 2a – Phase 1 Habitat Plan**

**Figure 2b – Phase 1 Habitat Plan**

**Figure 3 – Building Location Plan**

**Figure 4 – Pond Location Plan**





Rev	Date	Notes
A	17/07/21	Initial map production

**Legend**

- Site boundary
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - semi-improved
- Improved grassland
- Tall ruderal
- Standing water
- Arable
- Amenity grassland
- Buildings
- Hardstanding
- Bare ground
- Intact hedge (species-rich)
- Species-rich defunct (with trees)
- Species-poor defunct (with trees)
- Species-poor
- Species-poor defunct
- Species-rich with trees
- Fence
- Wall/fence mix
- Dry ditch
- Running water
- Scattered tree
- Target note



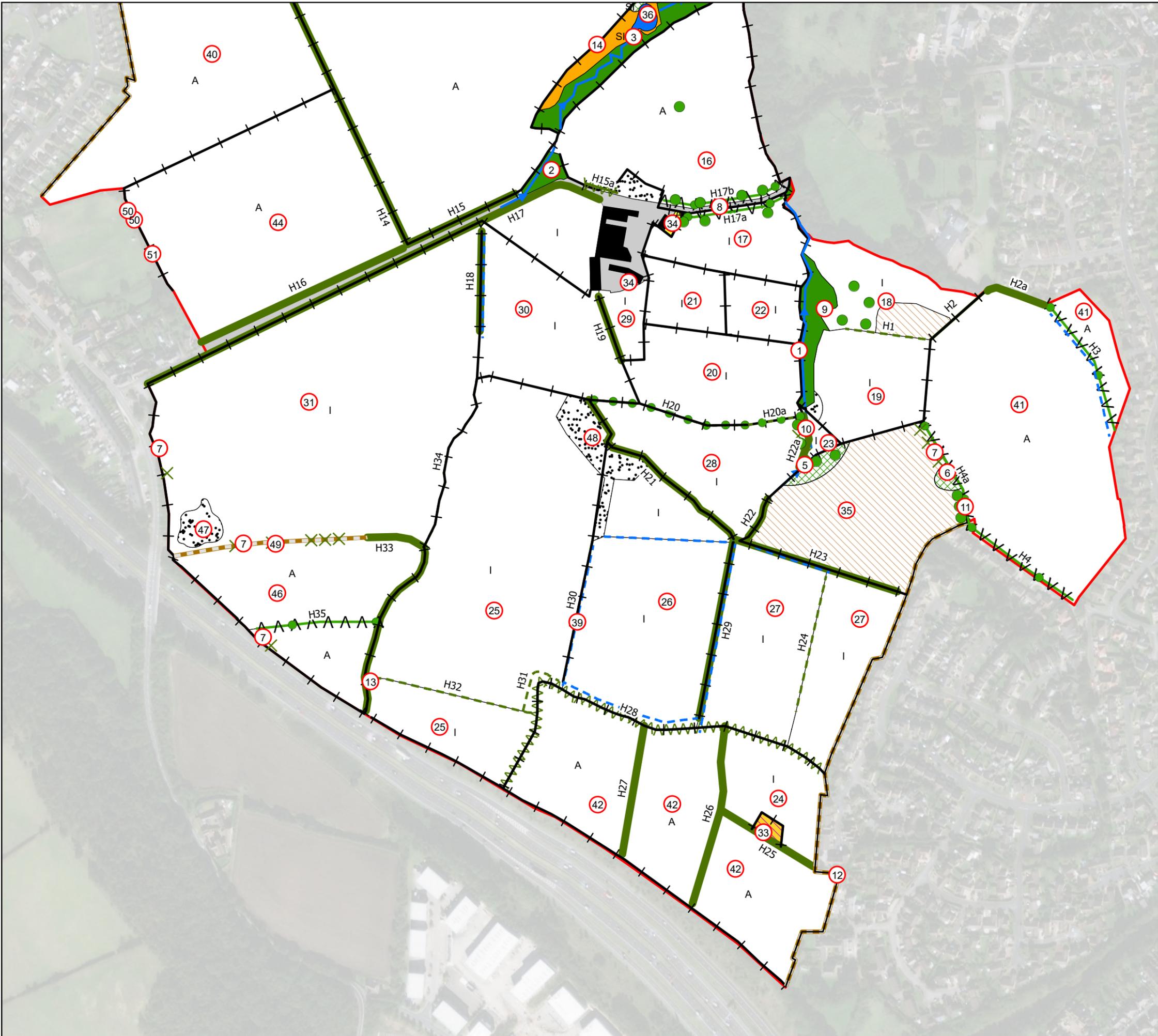
**Phase 1 Habitat Plan**

**Barnsley West  
Strata Sterling Barnsley West Ltd**

Scale at A3: 1:4,000	Project No: 784-A107940-3	Drawing No: Figure 2a	Revision: A
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Drawn by: Carys Leftley	Drawn date: 16/07/2021	Approved by: Jonathan Siberry
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Rev	Date	Notes
A	05/01/21	Initial map production

**Legend**

- Site boundary
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- SI Neutral grassland - semi-improved
- I Improved grassland
- Marshy grassland
- Tall ruderal
- Standing water
- A Arable
- A Amenity grassland
- Buildings
- Hardstanding
- Bare ground
- Intact hedge (species-rich)
- Species-rich defunct (with trees)
- Species-poor defunct (with trees)
- Species-poor
- Species-rich
- Species-poor defunct
- Species-poor with trees
- Fence
- Wall
- Wall/fence mix
- Dry ditch
- Running water
- X Scattered scrub
- Scattered tree
- Target note



**Phase 1 Habitat Plan**

**Barnsley West  
Strata Sterling Barnsley West Ltd**

Scale at A3: 1:4,100	Project No: 784-A107940-3	Drawing No: Figure 2b	Revision: A
Drawn by: Ben Blowers	Drawn date: 22/07/2021	Approved by: Jonathan Siberry	

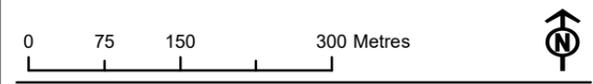
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Rev	Date	Notes
A	17/12/20	Initial map production

**Legend**

- Site boundary
- Bat Roost Suitability**
- High
- Moderate
- Low
- Negligible



**Bat Roost Assessment**

**Barnsley West  
Strata Sterling Barnsley West Ltd**

Scale at A3: 1:7,000	Project No: 784-A107940-3	Drawing No: Figure 3	Revision: A
Drawn by: Ben Blowers	Drawn date: 17/12/2020	Approved by: Jonathan Siberry	

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Rev	Date	Notes
A	16/12/20	Initial map production

**Legend**

- Site boundary
- Ponds



**Pond Location Plan**

**Barnsley West  
Strata Sterling Barnsley West Ltd**

Scale at A3: 1:500	Project No: 784-A107940-3	Drawing No: Figure 4	Revision: A
Drawn by: Ben Blowers	Drawn date: 16/12/2020	Approved by: Jonathan Siberry	

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## Appendix A – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of [Strata Sterling Barnsley West Ltd] (“the Client”) for the proposed uses stated in the report by [WYG Environment Planning Transport Limited] (“WYG”). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder’s permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.



## Appendix B – Key Legislation

### Bern Convention

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention, and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1<sup>st</sup> December 2009, European legislation has been adopted by the European Union.

### Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

### Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.

### Birds Directive

The EC Directive on the Conservation of Wild Birds (79/409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.



**Conservation of Habitats and Species Regulations 2017 (as amended)**

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by Ministers, are then designated as Special Protection Areas (SPAs) within six years. Public bodies must also help preserve, maintain and re-establish habitats for wild birds.

The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details:

<https://www.legislation.gov.uk/uksi/2018/1307/note/made>

The Regulations make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants
Horseshoe bats <i>Rhinolophidae</i> - all species	Shore dock <i>Rumex rupestris</i>
Common bats <i>Vespertilionidae</i> - all species	Killarney fern <i>Trichomanes speciosum</i>
Large Blue Butterfly <i>Maculinea arion</i>	Early gentian <i>Gentianella anglica</i>
Wild cat <i>Felis sylvestris</i>	Lady’s-slipper <i>Cypripedium calceolus</i>
Dolphins, porpoises and whales <i>Cetacea</i> – all sp.	Creeping marsh-wort <i>Apium repens</i>
Dormouse <i>Muscardinus avellanarius</i>	Slender naiad <i>Najas flexilis</i>
Pool frog <i>Rana lessonae</i>	Fen orchid <i>Liparis loeselii</i>
Sand lizard <i>Lacerta agilis</i>	Floating-leaved water plantain <i>Luronium natans</i>
Fisher’s estuarine moth <i>Gortyna borelii lunata</i>	Yellow marsh saxifrage <i>Saxifraga hirculus</i>
Great crested newt <i>Triturus cristatus</i>	
Otter <i>Lutra lutra</i>	
Lesser whirlpool ram’s-horn snail <i>Anisus vorticulus</i>	
Smooth snake <i>Coronella austriaca</i>	
Sturgeon <i>Acipenser sturio</i>	
Natterjack toad <i>Epidalea calamita</i>	
Marine turtles <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , <i>Dermodochelys coriacea</i>	

**Wildlife & Countryside Act 1981 (as amended)**

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the ‘Bern Convention’ and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; or
- take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

- disturbs any wild bird while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird.



In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

**Schedule 1 - Birds which are protected by special penalties**

Avocet	<i>Recurvirostra avosetta</i>	Osprey	<i>Pandion haliaetus</i>
Bee-eater	<i>Merops apiaster</i>	Owl, Barn	<i>Tyto alba</i>
Bittern	<i>Botaurus stellaris</i>	Owl, Snowy	<i>Nyctea scandiaca</i>
Bittern, Little	<i>Ixobrychus minutus</i>	Peregrine	<i>Falco peregrinus</i>
Bluethroat	<i>Luscinia svecica</i>	Petrel, Leach's	<i>Oceanodroma leucorhoa</i>
Brambling	<i>Fringilla montifringilla</i>	Phalarope, Red-necked	<i>Phalaropus lobatus</i>
Bunting, Cirl	<i>Emberiza cirlus</i>	Plover, Kentish	<i>Charadrius alexandrinus</i>
Bunting, Lapland	<i>Calcarius lapponicus</i>	Plover, Little Ringed	<i>Charadrius dubius</i>
Bunting, Snow	<i>Plectrophenax nivalis</i>	Quail, Common	<i>Coturnix coturnix</i>
Buzzard, Honey	<i>Pernis apivorus</i>	Redstart, Black	<i>Phoenicurus ochruros</i>
Capercaillie	<i>Tetrao urogallus</i>	Redwing	<i>Turdus iliacus</i>
Chough	<i>Pyrrhonorax pyrrhonorax</i>	Rosefinch, Scarlet	<i>Carpodacus erythrinus</i>
Corncrake	<i>Crex crex</i>	Ruff	<i>Philomachus pugnax</i>
Crake, Spotted	<i>Porzana porzana</i>	Sandpiper, Green	<i>Tringa ochropus</i>
Crossbills (all species)	<i>Loxia</i>	Sandpiper, Purple	<i>Calidris maritima</i>
Curlew, Stone	<i>Burhinus oediconemus</i>	Sandpiper, Wood	<i>Tringa glareola</i>
Divers (all species)	<i>Gavia</i>	Scaup	<i>Aythya marila</i>
Dotterel	<i>Charadrius morinellus</i>	Scoter, Common	<i>Melanitta nigra</i>
Duck, Long-tailed	<i>Clangula hyemalis</i>	Scoter, Velvet	<i>Melanitta fusca</i>
Eagle, Golden	<i>Aquila chrysaetos</i>	Serin	<i>Serinus serinus</i>
Eagle, White-tailed	<i>Haliaetus albicilla</i>	Shorelark	<i>Eremophila alpestris</i>
Falcon, Gyr	<i>Falco rusticolus</i>	Shrike, Red-backed	<i>Lanius collurio</i>
Fieldfare	<i>Turdus pilaris</i>	Spoonbill	<i>Platalea leucorodia</i>
Firecrest	<i>Regulus ignicapillus</i>	Stilt, Black-winged	<i>Himantopus himantopus</i>
Garganey	<i>Anas querquedula</i>	Stint, Temminck's	<i>Calidris temminckii</i>



Godwit, Black-tailed	<i>Limosa limosa</i>	Swan, Bewick's	<i>Cygnus bewickii</i>
Goshawk	<i>Accipiter gentilis</i>	Swan, Whooper	<i>Cygnus cygnus</i>
Grebe, Black-necked	<i>Podiceps nigricollis</i>	Tern, Black	<i>Chlidonias niger</i>
Grebe, Slavonian	<i>Podiceps auritus</i>	Tern, Little	<i>Sterna albifrons</i>
Greenshank	<i>Tringa nebularia</i>	Tern, Roseate	<i>Sterna dougallii</i>
Gull, Little	<i>Larus minutus</i>	Tit, Bearded	<i>Panurus biarmicus</i>
Gull, Mediterranean	<i>Larus melanocephalus</i>	Tit, Crested	<i>Parus cristatus</i>
Harriers (all species)	<i>Circus</i>	Tree-creeper, Short-toed	<i>Certhia brachydactyla</i>
Heron, Purple	<i>Ardea purpurea</i>	Warbler, Cetti's	<i>Cettia cetti</i>
Hobby	<i>Falco subbuteo</i>	Warbler, Dartford	<i>Sylvia undata</i>
Hoopoe	<i>Upupa epops</i>	Warbler, Marsh	<i>Acrocephalus palustris</i>
Kingfisher	<i>Alcedo atthis</i>	Warbler, Savi's	<i>Locustella luscinioides</i>
Kite, Red	<i>Milvus milvus</i>	Whimbrel	<i>Numerius phaeopus</i>
Merlin	<i>Falco columbarius</i>	Woodlark	<i>Lullula arborea</i>
Oriole, Golden	<i>Oriolus oriolus</i>	Wryneck	<i>Jynx torquilla</i>
<b>Animal (Vertebrate) Species Listed in Schedule 5 (full legal protection at all times)</b>			
Horseshoe Bats (all species)	<i>Rhinolophidae</i>	Newt – Great Crested	<i>Triturus cristatus</i>
Typical Bats (all species)	<i>Vespertilionidae</i>	Snake – Smooth	<i>Coronella austriaca</i>
Dolphin – Bottle-nosed	<i>Tursiops truncatus (tursio)</i>	Toad, Natterjack	<i>Epidalea calamita</i>
Dolphin – Common	<i>Delphinus delphis</i>	Turtles – All Species	<i>Cheloniidae &amp; Dermochelyidae</i>
Dormouse – Hazel	<i>Muscardinus avellanarius</i>	Basking Shark	<i>Cetorhinus maximus</i>
Pine Marten	<i>Martes martes</i>	Burbot	<i>Lota lota</i>
Porpoise – Harbour	<i>Phocaena phocaena</i>	Goby – Giant	<i>Gobius cobitis</i>
Otter – Eurasian	<i>Lutra lutra</i>	Goby – Couch's	<i>Gobius couchii</i>
Squirrel – Red	<i>Sciurus vulgaris</i>	Seahorse – Short-snouted <sup>4</sup>	<i>Hippocampus hippocampus</i>
Walrus	<i>Odobenus rosmarus</i>	Seahorse – Spiny	<i>Hippocampus guttulatus</i>
Water Vole	<i>Arvicola amphibius</i>	Sturgeon	<i>Acipenser sturio</i>
Whales – All Species	<i>Cetacea</i>	Vendace	<i>Coregonus albula</i>
Wildcat	<i>Felis sylvestris</i>	Whitefish	<i>Coregonus lavaretus</i>
Lizard – Sand	<i>Lacerta agilis</i>		
<b>Animal (Vertebrate) Species Protected under Section 9 (1) part: Killing and Injuring &amp; Section 9 (5) Sale</b>			
Adder	<i>Vipera berus</i>	Slow-worm	<i>Anguis fragilis</i>
Lizard – Viviparous	<i>Zootoca vivipara</i>	Snake – Grass	<i>Natrix helvetica (natrix)</i>
<b>Animals (Vertebrate) Species Protected under Section 9 (5) Sale only</b>			
Frog – common	<i>Rana temporaria</i>	Newt – Smooth	<i>Lissotriton vulgaris</i>
Newt – Palmate	<i>Lissotriton helvetica</i>	Toad – Common	<i>Bufo bufo</i>
<b>Animals (Vertebrate) Species Protected under Section 9 (1) (4)(a): Killing, Injuring &amp; Taking and Damage / Destruction of place of shelter / protection only</b>			
Allis Shad	<i>Alosa alosa</i>	Shark – Angel	<i>Squatina squatina</i>
Twaite Shad	<i>Alosa fallax</i>		
<b>Butterflies &amp; Moths – Full Protection under Schedule 5<sup>5</sup> at all times</b>			
High brown fritillary	<i>Argynnis adippe</i>	Fisher's Estuarine Moth	<i>Gortyna borelii</i>
Large Blue	<i>Maculinea arion</i>	Barberry Carpet	<i>Pareulype berberata</i>

<sup>4</sup> Both sea horse species are protected in England only.

<sup>5</sup> Viper's Bugloss Moth *Hadena irregularis* was removed from Schedule 5 in 1996 as it is believed to be extinct.



Heath Fritillary	<i>Mellicta athalea</i>	Black-veined Moth	<i>Siona lineata</i>
Marsh Fritillary	<i>Eurodryas aurinia</i>	Sussex Emerald	<i>Thalera fimbrialis</i>
Swallowtail	<i>Papilio machaon britannicus</i>	Essex Emerald	<i>Thetidia smaragdalis</i>
Large Copper	<i>Lycaena dispar</i>	Fiery Clearwing	<i>Bembecia chrysidiformis</i>
Reddish-buff Moth	<i>Acosmetia caliginosa</i>	New-Forest Burnet	<i>Zygaena viciae</i>
<b>Butterflies – Protected under Section 9 (5) Sale Only</b>			
Purple Emperor	<i>Apatura iris</i>	Adonis Blue	<i>Lysandra bellargus</i>
Northern Brown Argus	<i>Aricia artaxerxes</i>	Chalkhill Blue	<i>Lysandra coridon</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>	Glanville Fritillary	<i>Melitaea cinxia</i>
Chequered Skipper	<i>Carterocephalus palaemon</i>	Large Tortoiseshell	<i>Nymphalis polychloros</i>
Large Heath	<i>Coenonympha tullia</i>	Silver-studded Blue	<i>Plebejus argus</i>
Small Blue	<i>Cupido minimus</i>	Black Hairstreak	<i>Strymonidia pruni</i>
Mountain Ringlet	<i>Erebia epiphron</i>	White-letter Hairstreak	<i>Strymonidia w-album</i>
Duke of Burgundy	<i>Hamearis lucina</i>	Brown Hairstreak	<i>Thecla betulae</i>
Silver-spotted Skipper	<i>Hesperia comma</i>	Lulworth Skipper	<i>Thymelicus acteon</i>
Wood White	<i>Leptidea sinapis</i>		
<b>Other Invertebrates – Full Protection under Schedule 5 at all times</b>			
Rainbow Leaf-beetle	<i>Chrysolina cerealis</i>	Tadpole Shrimp	<i>Triops cancriformis</i>
Spangled Diving-beetle	<i>Graphopterus zonatus</i>	Trembling Sea-mat	<i>Victorella pavidia</i>
Lesser Silver Water-beetle	<i>Hydrochara caraboides</i>	De Folin's Lagoon Snail	<i>Caecum armoricum</i>
Moccas Beetle	<i>Hypebaeus flavipes</i>	Sandbowl Snail	<i>Catinella arenaria</i>
Violet Click-beetle	<i>Limoniscus violaceus</i>	Freshwater Pearl Mussel	<i>Margaritifera margaritifera</i>
Bembridge Beetle	<i>Parcymus aeneus</i>	Glutinous Snail	<i>Myxas glutinosa</i>
New Forest Cicada	<i>Cicadetta montana</i>	Lagoon Snail	<i>Paludinella littorina</i>
Wart-Biter	<i>Decticus verrucivorus</i>	Lagoon Sea Slug	<i>Tenellia adspersa</i>
Mole-Cricket	<i>Gryllotalpa gryllotalpa</i>	Northern Hatchet-shell	<i>Thyasira gouldi</i>
Field-Cricket	<i>Gryllus campestris</i>	Tentacled Lagoon-worm	<i>Alkmaria romijni</i>
Norfolk Hawker Dragonfly	<i>Aeshna isosceles</i>	Lagoon Sand-worm	<i>Armandia cirrhosa</i>
Southern Damselfly	<i>Coenagrion mercuriale</i>	Medicinal Leech	<i>Hirudo medicinalis</i>
Fen Raft Spider	<i>Dolomedes fimbriatus</i>	Marine Hydroid	<i>Clavopsella navis</i>
Ladybird Spider	<i>Eresus niger (cinaberinus)</i>	Ivell's Sea Anemone	<i>Edwardsia ivelli</i>
Fairy Shrimp	<i>Chirocephalus diaphanus</i>	Starlet Sea Anemone	<i>Nematosella vectensis</i>
Lagoon Sand Shrimp	<i>Gammarus insensibilis</i>	Atlantic Stream (White-clawed) Crayfish	<i>Austropotamobius pallipes</i>
<b>Other Invertebrates Protected under Section 9 (1) Possession &amp; 9 (2) (5) Sale only</b>			
Stag Beetle	<i>Lucanus cervus</i>	Roman Snail <sup>6</sup>	<i>Helix pomatia</i>
Fan Mussel	<i>Atrina fragilis</i>	Pink Sea-fan	<i>Eunicella verrucosa</i>
<b>Other Invertebrates Protected under Section 9 (4) (a) Damage / Destruction of Place of Shelter / Protection only</b>			
Mire Pill Beetle	<i>Curimopsis nigrita</i>		
<b>Vascular Plant Species - Full Protection under Schedule 8 at all times (previous Scientific name in brackets)</b>			
Adder's-tongue Least	<i>Ophioglossum lusitanicum</i>	Lily – Snowdon	<i>Gagea serotina (Lloydia serotina)</i>
Alison- Small	<i>Alyssum alyssoides</i>	Marsh-mallow – Rough	<i>Malva setigera (Althaea hirsuta)</i>

<sup>6</sup> England only



Broomrape – Bedstraw	<i>Orobanche caryophyllacea</i>	Milk-parsley – Cambridge	<i>Selinum carvifolia</i>
Broomrape – Oxtongue	<i>Orobanche picridis</i>	Mudwort – Welsh	<i>Limosella aquatica</i>
Broomrape – Thistle	<i>Orobanche reticulata</i> <sup>7</sup>	Naiad – Holly-leaved	<i>Najas marina</i>
Cabbage – Lundy	<i>Coincya wrightii</i> ( <i>Rhynchosinapis wrightii</i> )	Orache – Stalked	<i>Atriplex pedunculata</i> ( <i>Halimione pedunculata</i> )
Calamint – Wood	<i>Clinopodium menthifolium</i> ( <i>Calamintha sylvatica</i> )	Orchid – Early Spider	<i>Ophrys sphegodes</i>
Catchfly – Alpine	<i>Silene suecica</i> ( <i>Lychnis alpina</i> )	Orchid – Ghost	<i>Epipogium aphyllum</i>
Centaury – Slender	<i>Centaureum tenuiflorum</i>	Orchid – Lapland Marsh	<i>Dactylorhiza lapponica</i>
Cinquefoil – Rock	<i>Potentilla rupestris</i>	Orchid – Late Spider	<i>Ophrys fuciflora</i>
Clary – Meadow	<i>Salvia pratensis</i>	Orchid – Lizard	<i>Himantoglossum hircinum</i>
Club-rush – Triangular	<i>Schoenoplectus triqueter</i> ( <i>Scirpus triqueter</i> )	Orchid – Military	<i>Orchis militaris</i>
Colt's-foot – Purple	<i>Homogyne alpina</i>	Orchid – Monkey	<i>Orchis simia</i>
Cotoneaster – Wild	<i>Cotoneaster cambricus</i> ( <i>C. integerrimus</i> )	Pear – Plymouth	<i>Pyrus cordata</i>
Cotton-grass – Slender	<i>Eriophorum gracile</i>	Pennycress – Perfoliate	<i>Microthlaspi perfoliatum</i> ( <i>Thlaspi perfoliatum</i> )
Cow-wheat – Field	<i>Melampyrum arvense</i>	Pennyroyal	<i>Mentha pulegium</i>
Crocus – Sand	<i>Romulus columnae</i>	Pigmyweed	<i>Crassula aquatica</i>
Cudweed – Broad-leaved	<i>Filago pyramidata</i>	Pine - Ground	<i>Ajuga chamaepitys</i>
Cudweed – Jersey	<i>Gnaphalium luteoalbum</i>	Pink – Cheddar	<i>Dianthus gratianopolitanus</i>
Cudweed – Red-tipped	<i>Filago lutescens</i>	Pink – Childing	<i>Petrorhagia nanteuillii</i>
Cut-grass	<i>Leersia oryzoides</i>	Ragwort – Fen	<i>Jacobaea paludosa</i> ( <i>Senecio paludosa</i> )
Deptford Pink	<i>Dianthus armeria</i>	Ramping-fumitory – Martin's	<i>Fumaria reuteri</i> ( <i>F. martinii</i> )
Diapensia	<i>Diapensia lapponica</i>	Rampion – Spiked	<i>Phyteuma spicata</i>
Eryngo – Field	<i>Eryngium campestre</i>	Restharrow – Small	<i>Ononis reclinata</i>
Fern – Dickie's-bladder	<i>Cystopteris dickieana</i>	Rock-cress – Alpine	<i>Arabis alpina</i>
Fleabane – Alpine	<i>Erigeron borealis</i>	Rock-cress – Bristol	<i>Arabis scabra</i>
Fleabane – Small	<i>Pulicaria vulgaris</i>	Sandwort – Norwegian	<i>Arenaria norvegica</i> <sup>8</sup>
Galingale – Brown	<i>Cyperus fuscus</i>	Sandwort – Teesdale	<i>Minuartia stricta</i>
Gentian – Alpine	<i>Gentiana nivalis</i>	Saxifrage – Drooping	<i>Saxifraga cernua</i>
Gentian - Dune	<i>Gentianella amarella</i> subsp. <i>occidentalis</i> ( <i>Gentianella uliginosa</i> )	Saxifrage – Tufted	<i>Saxifraga cespitosa</i>
Gentian – Fringed	<i>Gentianopsis ciliata</i> ( <i>Gentianella ciliata</i> )	Solomon's-seal – Whorled	<i>Polygonatum verticillatum</i>
Gentian - Spring	<i>Gentiana verna</i>	Sow-thistle – Alpine	<i>Cicerbita alpina</i>
Germander – Cut-leaved	<i>Teucrium botrys</i>	Spearwort – Adder's-tongue	<i>Ranunculus ophioglossifolius</i>
Germander – Water	<i>Teucrium scordium</i>	Speedwell – Fingered	<i>Veronica triphyllos</i>
Gladiolus – Wild	<i>Gladiolus illyricus</i>	Speedwell – Spiked	<i>Veronica spicata</i> <sup>9</sup>
Goosefoot – Stinking	<i>Chenopodium vulvaria</i>	Spike-rush – Dwarf	<i>Eleocharis parvula</i>

<sup>7</sup> The Weeds Act 1959 does not apply to thistles *Cirsium* & *Carduus* species supporting this broomrape.

<sup>8</sup> All subspecies occurring in the UK

<sup>9</sup> Both subspecies: *spicata* & *hybrida*



Grass-poly	<i>Lythrum hyssopifolia</i>	South-stack Fleawort	<i>Tephrosia integrifolia</i> <i>ssp. maritima</i>
Hare's-ear – Sickle-leaved	<i>Bupleurum falcatum</i>	Star-of-Bethlehem – Early	<i>Gagea bohemica</i>
Hare's-ear – Small	<i>Bupleurum baldense</i>	Starfruit	<i>Damasonium alisma</i>
Hawk's-beard – Stinking	<i>Crepis foetida</i>	Strapwort	<i>Corrigiola littoralis</i>
Hawkweed – Northroe	<i>Hieracium northroense</i>	Violet – Fen	<i>Viola persicifolia</i>
Hawkweed – Shetland	<i>Hieracium zetlandicum</i>	Viper's-grass	<i>Scorzonera humilis</i>
Hawkweed – Weak-leaved	<i>Hieracium attenuatifolium</i>	Water-plantain – Ribbon-leaved	<i>Alisma gramineum</i>
Heath – Blue	<i>Phyllodoce caerulea</i>	Wood-sedge – Starved	<i>Carex depauperata</i>
Helleborine – Red	<i>Cephalanthera rubra</i>	Woodsia – Alpine	<i>Woodsia alpina</i>
Horsetail – Branched	<i>Equisetum ramosissimum</i>	Woodsia – Oblong	<i>Woodsia ilvensis</i>
Hound's-tongue – Green	<i>Cynoglossum germanicum</i>	Wormwood – Field	<i>Artemisia campestris</i>
Knawel – Perennial	<i>Scleranthus perennis</i> <sup>10</sup>	Woundwort - Downy	<i>Stachys germanica</i>
Knot-grass – Sea	<i>Polygonum maritimum</i>	Woundwort – Limestone	<i>Stachys alpina</i>
Leek – Round-headed	<i>Allium sphaerocephalon</i>	Yellow-rattle – Greater	<i>Rhinanthus angustifolius</i>
Lettuce – Least	<i>Lactuca saligna</i>		
<b>Vascular Plant Species – Partial Protection under Section 13 (2) Protection from commercial exploitation and sale</b>			
Bluebell	<i>Hyacinthoides non-scripta</i>		
<b>Bryophytes – Full Protection under Schedule 8 at all times</b>			
Anamodon – Long-leaved	<i>Anomodon langifolius</i>	Flamingo Moss	<i>Desmatodon cernuus</i>
Blackwort	<i>Southbya nigrella</i>	Frostwort	<i>Gymnomitrium apiculatum</i>
Crystalwort – Lizard	<i>Riccia bifurca</i>	Glaucous Beard Moss	<i>Barbula glauca</i>
Earwort – Marsh	<i>Jamesoniella undulifolia</i>	Green Shield Moss	<i>Buxbaumia viridis</i>
Feathermoss – Polar	<i>Hygrohypnum polare</i>	Hair Silk Moss	<i>Plagiothecium piliferum</i>
Flapwort – Norfolk	<i>Leiocolea rutheana</i>	Knothole Moss	<i>Zygodon forsteri</i>
Grimmia – Blunt-leaved	<i>Grimmia unicolor</i>	Large Yellow Feather Moss	<i>Scorpidium turgescens</i>
Petalwort	<i>Petalophyllum ralfsii</i>	Millimetre Moss	<i>Micromitrium tenerum</i>
Lindenberg's Leafy-Liverwort	<i>Adelanthus lindenbergianus</i>	Multi-fruited River Moss	<i>Cryphaea lamyana</i>
Feather-moss Slender Green	<i>Drepanocladus vernicosus</i>	Nowell's Limestone Moss	<i>Zygodon gracilis</i>
Alpine Copper-Moss	<i>Mielichoferia mellichoferia</i>	Rigid Apple Moss	<i>Bartramia stricta</i>
Baltic Bog-Moss	<i>Sphagnum balticum</i>	Round-leaved feather Moss	<i>Rhynchostegium rotundifolium</i>
Blue Dew-Moss	<i>Saelania glaucescens</i>	Schleicher's Thread Moss	<i>Bryum schleicheri</i>
Blunt-leaved bristle-Moss	<i>Orthotrichum obtusifolium</i>	Triangular Pygmy Moss	<i>Acaulon triquetrum</i>
Bright-Green Cave-Moss	<i>Cyclodictyon laetevirens</i>	Turpswort	<i>Geocalyx graveolens</i>
Cordate Beard Moss	<i>Barbula cordata</i>	Vaucher's Feather Moss	<i>Hypnum vaucheri</i>
Cornish Path Moss	<i>Ditrichum cornubicum</i>	Western Rustwort	<i>Marsupella profunda</i>
Derbyshire Feather Moss	<i>Thamnobryum angustifolium</i>		

<sup>10</sup> Includes both subspecies: *perennis* & *prostratus*



<b>Stoneworts – Full Protection under Schedule 8 at all times</b>			
Bearded Stonewort	<i>Chara canescens</i>	Foxtail Stonewort	<i>Lamprothamnium papulosum</i>
<b>Lichens – Full Protection under Schedule 8 at all times</b>			
New Forest Beech Lichen	<i>Enterographa elaborata</i>	Forked Hair Lichen	<i>Bryoria furcellata</i>
Snow Caloplaca	<i>Caloplaca nivalis</i>	Golden Hair Lichen	<i>Teloschistes flavicans</i>
Tree Catapyrenium	<i>Catapyrenium psoromoides</i>	Orange-fruited Elm Lichen	<i>Caloplaca luteoalba</i>
Laurer’s Catillaria	<i>Catillaria laurei</i>	River Jelly Lichen	<i>Collema dichotomum</i>
Convolute Cladonia	<i>Cladonia convoluta</i>	Starry Breck Lichen	<i>Buellia asterella</i>
Upright Mountain Cladonia	<i>Cladonia stricta</i>	Caledonia Pannaria	<i>Pannaria ignobilis</i>
Goblin Lights	<i>Catolechia wahlenbergii</i>	New Forest Parmelia	<i>Parmelia minarum</i>
Elm Gyalecta	<i>Gyalecta ulmi</i>	Oil Stain Parmentaria	<i>Parmentaria chilensis</i>
Tarn Lecanora	<i>Lecanora archariana</i>	Southern Grey Physcia	<i>Physcia tribacioides</i>
Copper Lecidea	<i>Lecidea inops</i>	Ragged Pseudo-cyphellaria	<i>Pseudocyphellaria lacerata</i>
Arctic Kidney Lichen	<i>Nephroma arcticum</i>	Rusty Alpine Psora	<i>Psora rubiformis</i>
Ciliate Strap Lichen	<i>Heterodermia leucomelos</i>	Rock Nail	<i>Calicium corynellum</i>
Coralloid Rosette Lichen	<i>Heterodermia propagulifera</i>	Serpentine Selanopsora	<i>Selanopsora liparina</i>
Ear-lobed Dog Lichen	<i>Peltigera lepidophora</i>	Sulphur Tresses	<i>Alectoria ochroleuca</i>
<b>Lichens – Partial Protection under Section 13 (2) Commercial Exploitation and Sale Only</b>			
Tree Lungwort	<i>Lobaria pulmonaria</i>		
<b>Fungi – Full Protection under Schedule 8 at all times</b>			
Royal Bolete	<i>Boletus regius</i>	Oak Polypore	<i>Buglossosporus pulvinus</i>
Hedgehog Fungus	<i>Hericium erinaceum</i>	Sandy Stilt Ball	<i>Battaria phalloides</i>
<b>Invasive plant species listed in Schedule 9</b>			
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>	Japanese rose	<i>Rosa rugosa</i>
Californian red seaweed	<i>Pikea californica</i>	Japanese seaweed	<i>Sargassum muticum</i>
Curly waterweed	<i>Lagarosiphon major</i>	Laver seaweeds (except native species)	<i>Porphyra</i> spp
Duck potato	<i>Sagittaria latifolia</i>	Parrot’s-feather	<i>Myriophyllum aquaticum</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>	Perfoliate alexanders	<i>Smyrniun perfoliatum</i>
False Virginia creeper	<i>Parthenocissus inserta</i>	Pontic rhododendron	<i>Rhododendron ponticum</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>	Purple dewplant	<i>Disphyma crassifolium</i>
Few-flowered garlic	<i>Allium paradoxum</i>	Red algae	<i>Grateloupia luxurians</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Floating water primrose	<i>Ludwigia peploides</i>	Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>	Three-cornered garlic	<i>Allium triquetrum</i>
Giant kelp	<i>Macrocystis</i> spp.	Variogated yellow archangel	<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>
Giant knotweed	<i>Fallopia sachalinensis</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Giant rhubarb	<i>Gunnera tinctoria</i>	Wakame	<i>Undaria pinnatifida</i>
Giant salvinia	<i>Salvinia molesta</i>	Wall cotoneaster	<i>Cotoneaster horizontalis</i>
Green seafringers	<i>Codium fragile</i>	Water fern	<i>Azolla filiculoides</i>



Himalayan cotoneaster	<i>Cotoneaster simonsii</i>	Water hyacinth	<i>Eichhornia crassipes</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>	Water lettuce	<i>Pistia stratiotes</i>
Hooked asparagus seaweed	<i>Asparagopsis armata</i>	Water primrose	<i>Ludwigia grandiflora</i>
Hottentot fig	<i>Carpobrotus edulis</i>	Water primrose	<i>Ludwigia uruguayensis</i>
Hybrid knotweed	<i>Fallopia japonica</i> × <i>Fallopia sachalinensis</i>	Waterweeds	<i>Elodea</i> spp.
Indian (Himalayan) balsam	<i>Impatiens glandulifera</i>	Yellow azalea	<i>Rhododendron luteum</i>
Japanese knotweed	<i>Reynoutria japonica</i>		

**Protection of Badgers Act 1992**

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger"

**Natural Environment and Rural Communities Act 2006**

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

**Hedgerow Regulations 1997**

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.



### Birds of Conservation Concern

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

- **Red list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- **Amber list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.
- **Green list** species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

### Global IUCN Red List

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

### Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

### Wild Mammals (Protection) Act 1996

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.



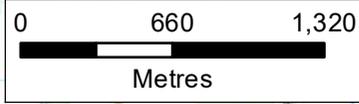
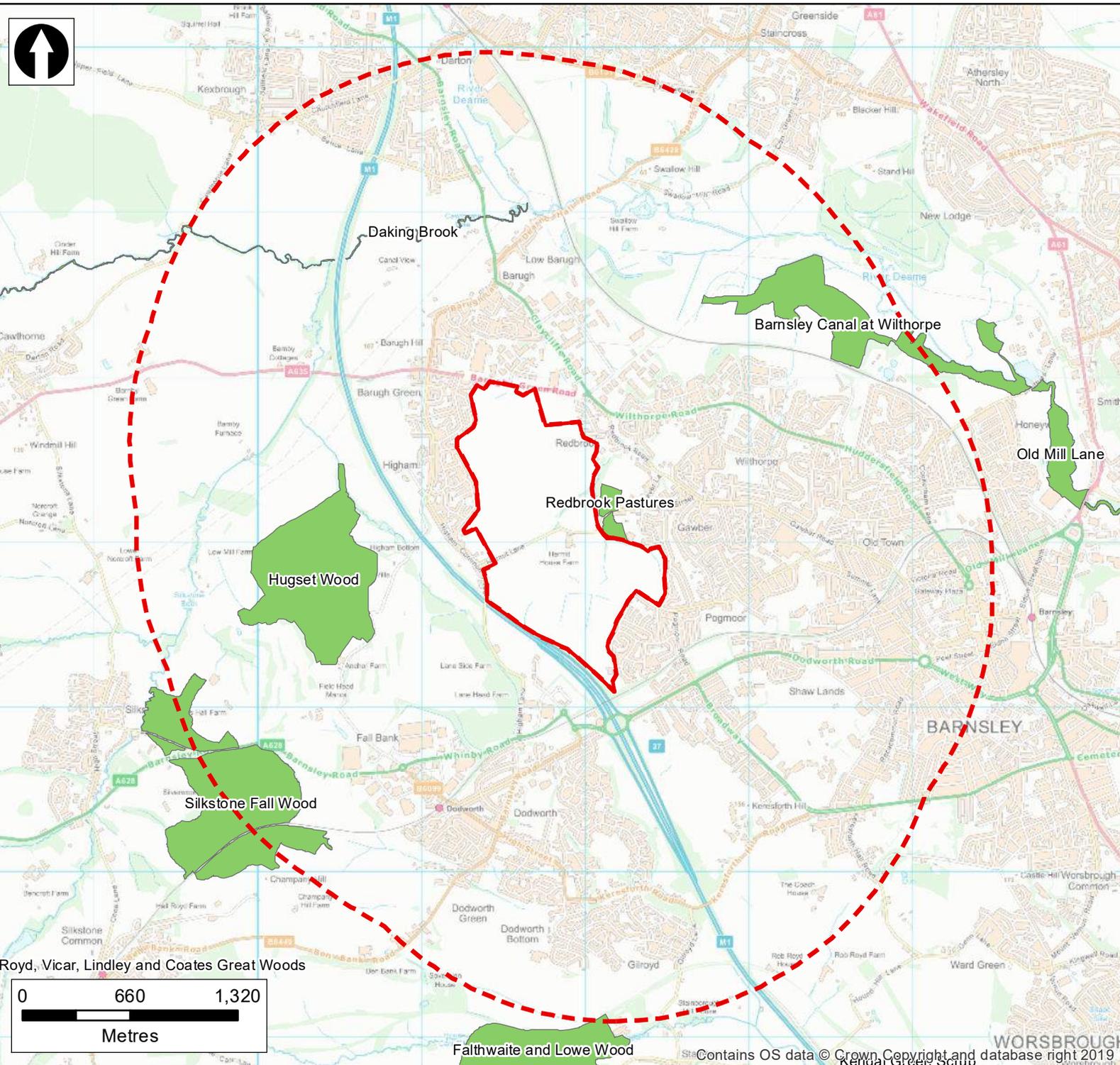
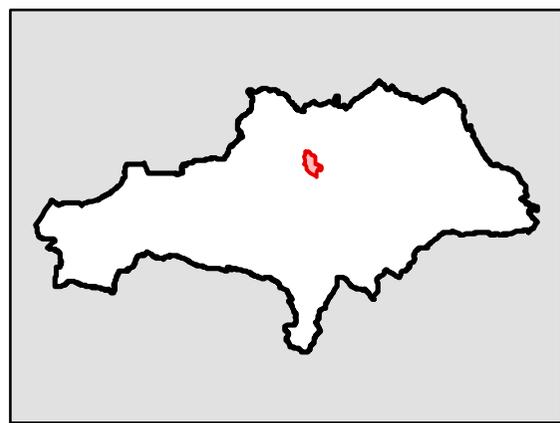
# Appendix C – Relevant Desk Study Data

# Boundaries of Statutory and Local Wildlife Sites (non-statutory) Within the Search Area



**Barnsley West  
(located South of  
Barugh Green,  
West of Higham)**

-  Search Area
-  2km Radius
-  Barnsley Boundary
-  Local Wildlife Site



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## Appendix D – Target Notes

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
1	<p><b>Broad-leaved Semi-natural Woodland</b></p> <p>Comprised of mature trees including pedunculate oak <i>Quercus robur</i> (D), sycamore <i>Acer pseudoplatanus</i> (F) and ash <i>Fraxinus excelsior</i> (O).</p> <p>The ground flora was largely bare or indicative of the adjacent improved grassland.</p>	
2	<p><b>Broad-leaved Semi-natural Woodland</b></p> <p>Comprised of mature trees including pedunculate oak (D), silver birch <i>Betula pendula</i> (F), hawthorn <i>Crataegus monogyna</i> (F), ash (F) and alder <i>Alnus glutinosa</i> (F).</p> <p>The ground flora included bare areas but also species such as nettle <i>Urtica dioica</i> (A), bramble <i>Rubus fruticosus</i> agg. (A), garlic mustard <i>Alliaria petiolata</i> (F), wild garlic <i>Allium ursinum</i> (F), broad-leaved dock <i>Rumex obtusifolius</i> (F), wood avens <i>Geum urbanum</i> (O), creeping buttercup <i>Ranunculus repens</i> (O), annual meadow-grass <i>Poa annua</i> (O), self-heal <i>Prunella vulgaris</i> (R) and common figwort <i>Scrophularia nodosa</i> (R).</p>	
3	<p><b>Broad-leaved Semi-natural Woodland</b></p> <p>Comprised of mature and semi-mature trees including alder (D), pedunculate oak (F), hawthorn (O) and sycamore (O).</p> <p>The ground flora comprised ivy <i>Hedera helix</i> (D), bramble (F), cow parsley <i>Anthriscus sylvestris</i> (F), lords-and-ladies <i>Arum maculatum</i> (F), cock's-foot <i>Dactylis glomerata</i> (O), cleavers <i>Galium aparine</i> (O), dandelion <i>Taraxacum</i> agg. (O), broad-leaved dock (O) and rough meadow-grass <i>Poa trivialis</i> (R).</p>	

<sup>11</sup> DAFOR: D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare.

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
4	<p><b>Dense Scrub</b></p> <p>Areas of dense scrub along fence line between arable and grassland habitat. Species present included hawthorn (F), rose <i>Rosa sp.</i> (O) and bramble (F).</p>	No photograph.
5	<p><b>Dense Scrub</b></p> <p>An area of dense scrub in the north of a tall ruderal dominated field. Species present included hawthorn (D), elder <i>Sambucus nigra</i> (F) and semi-mature ash (F).</p>	
6	<p><b>Dense Scrub</b></p> <p>An area of dense scrub in the north of a tall ruderal dominated field. Species present included gorse <i>Ulex europaeus</i> (D), elder (A), rose (O) and hawthorn (O).</p>	
7	<p><b>Scattered Scrub</b></p> <p>Example of scattered scrub which was typically dominated by either hawthorn or bramble.</p>	



Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
8	<p><b>Scattered Trees</b></p> <p>Mature ash and pedunculate oak along Hermit Lane, to the east of Hermit House Farm.</p>	
9	<p><b>Scattered Trees</b></p> <p>Four mature pedunculate oak trees.</p>	
10	<p><b>Scattered Trees</b></p> <p>Scattered trees on banks of a small stream included ash and silver birch, with elder and hawthorn.</p>	<p>No photograph.</p>



Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
11	<p><b>Scattered Trees</b></p> <p>Three mature beech <i>Fagus sylvatica</i> trees.</p>	
12	<p><b>Scattered Trees</b></p> <p>Mature ash.</p>	
13	<p><b>Scattered Trees</b></p> <p>Mature ash.</p>	<p>No photograph.</p>

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
14	<p><b>Semi-improved Grassland</b></p> <p>Located north of Hermit Lane, between the centre and east of the site. This grassland was in use by a small number of cattle for grazing, with a typical sward height of 5-10cm; though some areas of taller grasses were occasionally present (up to 30cm). Species present included Yorkshire-fog <i>Holcus lanatus</i> (D), cock's-foot (F), yarrow <i>Achillea millefolium</i> (F), ribwort plantain <i>Plantago lanceolata</i> (F), perennial rye-grass <i>Lolium perenne</i> (F), dove's-foot cranes-bill <i>Geranium molle</i> (F), knapweed <i>Centaurea nigra</i> (O), creeping buttercup (O), meadow buttercup <i>Ranunculus acris</i> (O), broad-leaved dock (O), creeping cinquefoil <i>Potentilla reptans</i> (O), curled dock <i>Rumex crispus</i> (O), dandelion (O), timothy <i>Phleum pratense</i> (O), meadow vetchling <i>Lathyrus pratensis</i> (O), bird's-foot trefoil <i>Lotus corniculatus</i> (O), crested dog's tail <i>Cynosurus cristatus</i> (O), red clover <i>Trifolium pratense</i> (O), greater plantain <i>Plantago major</i> (O), ragwort <i>Jacobaea vulgaris</i> (O), <i>Primula sp.</i> (R) and a vetch species <i>Vicia sp.</i> (R).</p>	
15	<p><b>Improved Grassland</b></p> <p>Grazed by cattle and horses. Species present included perennial rye-grass (D), annual meadow-grass (A), greater plantain (O), creeping buttercup (F), broad-leaved dock (F), spear thistle <i>Cirsium vulgare</i> (O), white clover <i>Trifolium repens</i> (O), meadow buttercup (O), Yorkshire-fog (F) and timothy (O).</p>	
16	<p><b>Improved Grassland</b></p> <p>Grazed by horses with a sward height of 5-20 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (F), white clover (O), Yorkshire-fog (F), broad-leaved dock (F), spear thistle (R), creeping thistle <i>Cirsium arvense</i> (R), chickweed <i>Stellaria media</i> (O), nettle (F), meadow buttercup (O), greater plantain (O) and pineappleweed <i>Matricaria discoidea</i> (R).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
17	<p><b>Improved Grassland</b></p> <p>Grazed by sheep and horses with a sward height of up to 5-10 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (O), Yorkshire-fog (F), broad-leaved dock (F), spear thistle (O), nettle (O) and daisy <i>Bellis perennis</i> (O).</p>	
18	<p><b>Improved Grassland</b></p> <p>Grazed by horses and sheep. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (F), white clover (O), Yorkshire-fog (F), broad-leaved dock (F), spear thistle (R), creeping thistle (R), chickweed (F) and nettle (F).</p>	
19	<p><b>Improved Grassland</b></p> <p>Was not being grazed at the time of the survey. Was noted to have a sward height of up to 20 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (F), white clover (O), Yorkshire-fog (F), broad-leaved dock (F), spear thistle (R), creeping thistle (R), chickweed (F) and nettle (R).</p>	
20	<p><b>Improved Grassland</b></p> <p>Grazed by ponies and had a very short sward (less than 5 cm). Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (F), Yorkshire-fog (f), pineapple weed (R), broad-leaved dock (A) and daisy (F).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
21	<p><b>Improved Grassland</b></p> <p>Grazed by horses and ponies with a very short sward (less than 5cm). Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (F), Yorkshire-fog (f), pineappleweed (R), nettle (O) and spear thistle (O).</p>	
22	<p><b>Improved Grassland</b></p> <p>Grazed by ponies with a sward height of approx. 5 – 10 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (F), Yorkshire-fog (f), pineapple weed (R), spear thistle (F) and broad-leaved dock (F).</p>	
23	<p><b>Improved Grassland</b></p> <p>Forms part of the same field as TN28 but appeared to be less frequently grazed. Species present included perennial rye-grass (D), annual meadow-grass (A), crested dog's tail (A), creeping buttercup (A), white clover (F), Yorkshire fog (f), broad-leaved dock (O), spear thistle (F) and selfheal (F).</p>	
24	<p><b>Improved Grassland</b></p> <p>Grazed by horses with a sward height of up to 60 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), broad-leaved dock (A), cock's foot (F), Yorkshire-fog (F), creeping buttercup (F), greater plantain (F), meadow foxtail <i>Alopecurus pratensis</i> (O), creeping thistle (O), ribwort plantain (F), spear thistle (O), nettle (O), dandelion (O), crested dog's tail (O) and pineappleweed (R).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
25	<p><b>Improved Grassland</b></p> <p>Grazed by horses and sheep with a sward height of approx. 10 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), white clover (O), greater plantain (F), creeping buttercup (O), creeping thistle (O), crested dog's tail (F), selfheal (O), daisy (O), dandelion (O), Yorkshire-fog (O), nettle (O) and spear thistle (O).</p>	
26	<p><b>Improved Grassland</b></p> <p>Grazed by horses and sheep with a sward height of approx. 10 cm. Species present were as per TN25.</p>	
27	<p><b>Improved Grassland</b></p> <p>As per TN24.</p>	
28	<p><b>Improved Grassland</b></p> <p>Grazed by horses with a sward height of up to 20 cm. A greater density of nettles was noted towards the field boundaries. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (F), Yorkshire-fog (f), broad-leaved dock (O), spear thistle (R), creeping thistle (R), chickweed (R) and nettle (O).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
29	<p><b>Improved Grassland</b></p> <p>Grazed by ponies with a sward height of up to 5 cm. A greater density of nettles was noted around the field boundaries. Species present included perennial rye-grass (D), annual meadow-grass (A), broad-leaved dock (R), dandelion (F), greater plantain (O) and Yorkshire-fog (O).</p>	
30	<p><b>Improved Grassland</b></p> <p>Grazed by horses with a sward height of up to 10 cm. Species present included perennial rye-grass (D), annual meadow-grass (A), creeping buttercup (O), white clover (F), Yorkshire-fog (F) and pineappleweed (R).</p>	
31	<p><b>Improved Grassland</b></p> <p>Grazed by horses and sheep. Very few herbs in sward and a sward height of up to 20 cm. Boundaries included increased frequency of ruderals such as nettles, cow parsley, spear thistle and broad-leaved dock. Species present included perennial rye-grass (d), annual meadow-grass (a), meadow buttercup (f), white clover (a), crested dog's tail (f), Yorkshire-fog (f), daisy (O), greater plantain (R), ribwort plantain (O) and creeping thistle (R).</p>	
32	<p><b>Improved Grassland</b></p> <p>Mixed-use fields managed as hay meadows in the early part of the year and then subsequently grazed by cattle and horses (following hay cut). Species present included perennial rye-grass (D), Yorkshire-fog (A), annual meadow-grass (A), creeping buttercup (F), white clover (F), crested dog's tail (F), greater plantain (F), ribwort plantain (F) meadow buttercup (F), creeping bent <i>Agrostis stolonifera</i> (F), broad-leaved dock (O), timothy (O) and spear thistle (R).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
33	<p><b>Marshy Grassland</b></p> <p>Small fenced area of marshy grassland in the south-east of the site. Species present included soft rush <i>Juncus effusus</i> (D), bulrush <i>Typha latifolia</i> (F), Yorkshire-fog (F), broad-leaved dock (O) and creeping buttercup (F),</p>	
34	<p><b>Amenity Grassland</b></p> <p>Example of amenity grassland (residential gardens) on site. These areas were dominated by perennial rye-grass, with other species such as dandelion, daisy and ribwort plantain.</p>	
35	<p><b>Tall Ruderal</b></p> <p>A field grazed by ponies but at the time of the survey, was dominated by tall ruderal species, with approximately 20% bare ground. Some grasses were noted by these were extremely short, likely as a result of heavy and repeated grazing. Species present included broad-leaved dock (D), meadow buttercup (A), creeping buttercup (A), greater plantain (F), pineapple weed (R), nettle (O), chickweed (O), annual meadow-grass (O) and perennial rye-grass (O).</p>	
36	<p><b>Standing Water</b></p> <p>Area of pooled water (Pond 1) located within the woodland to the north of Hermit Lane, along the stream which flows through the woodland. The pond has formed as a result of pooling water (caused by creation of a man-made dam along the stream). The water appeared turbid and shallow (approx. 5 – 10 cm), with large quantities of silt present.</p> <p>Species present included bulrush (A), great willowherb <i>Epilobium hirsutum</i> (D), alder (F) and rowan <i>Sorbus aucuparia</i> (R).</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
37	<p><b>Running Water</b></p> <p>Stream located north of Hermit Lane, with the broad-leaved semi-natural woodland. The stream runs west – east and had a slow – moderate flow. It eventually merges with the stream shown in TN38, at a point within the woodland located off site, to the east of the site. No aquatic vegetation was observed and bankside vegetation was typical of the woodland ground flora.</p>	
38	<p><b>Running Water</b></p> <p>Stream located south of Hermit Lane, with the broad-leaved semi-natural woodland. The stream runs west – east and had a slow – moderate flow. It eventually merges with the stream shown in TN37, at a point within the woodland located off site, to the east of the site. No aquatic vegetation was observed and bankside vegetation was typical of the woodland ground flora, though some foxglove <i>Digitalis purpurea</i> was recorded along the banks.</p>	<p>No photograph.</p>
39	<p><b>Dry Ditch</b></p> <p>Several dry ditches were observed on site. Although dry at the time of the survey, some of these ditches have been observed to support water in previous months / years (during delivery of other habitat / species surveys on site). As such, these ditches were considered to support surface water runoff following prolonged periods of rain and the wetter months of the year.</p>	
40	<p><b>Arable</b></p> <p>Planted with wheat at the time of survey. Skylark <i>Alauda arvensis</i> were recorded singing over the field. The field boundaries measured up to 1 m wide (though often much narrower) and includes species such as cow parsley (F), false oat-grass <i>Arrhenatherum elatius</i> (F), smooth meadow-grass (A), annual meadow-grass (F), spear thistle (O), cleavers (O), oil seed rape (F), creeping bent (O), cow parsley (F), bramble (O), pineapple weed (R), cock's-</p>	

Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
	<p>foot (F), Yorkshire fog (F), greater plantain (O) and dandelion (O).</p>	
<p>41</p>	<p><b>Arable</b></p> <p>Not planted with any crops at the time of the survey – appeared recently ploughed.</p> <p>The field margins were narrow (20 cm wide) except to accommodate public footpath (1 m wide). Species present included false oat-grass (A), cleavers (F), nettle (F), common hogweed <i>Heracleum sphondylium</i> (O), hairy brome <i>Bromus ramosus</i> (O), spear thistle (F), cow parsley (F), meadow foxtail (O), cock’s-foot (O), Yorkshire-fog (F), bramble (O), germander speedwell <i>Veronica chamaedrys</i> (R) and dandelion (O).</p>	
<p>42</p>	<p><b>Arable</b></p> <p>Three fields not planted with any crops at the time of the survey.</p> <p>Field margins measured 20 – 40 cm and comprised false oat-grass (A), perennial rye-grass (A), barren brome <i>Anisantha sterilis</i> (O), spear thistle (F), nettle (F), bramble (F), oil-seed rape <i>Brassica napus</i> (R), annual meadow-grass (O), cock’s-foot (O), creeping buttercup (O) and Yorkshire-fog (O).</p>	
<p>43</p>	<p><b>Arable</b></p> <p>Arable field managed as a hay meadow to cultivate hay bales / silage. Species present included timothy (D), perennial rye-grass (D), white clover (A), annual meadow-grass (F), creeping bent (O), creeping buttercup (O), greater plantain (O) and red clover (O).</p> <p>The field boundaries measures approximately 30 – 60 cm wide and were of similar composition, though Yorkshire-fog and bramble were both Frequently recorded.</p>	



Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
44	<p><b>Arable</b></p> <p>Arable field managed as a hay meadow to cultivate hay bales / silage. The field boundaries were noted to include more ruderal species such as spear thistle, nettle, common hogweed. Species present included perennial rye-grass (D), annual meadow-grass (O), chickweed (F) and cow parsley (O).</p> <p>Field boundaries comprised cock's-foot (F), annual meadow-grass (A), perennial rye-grass (D), nettle (F), cow parsley (F), broad-leaved dock (O), Yorkshire-fog (F), spear thistle (O), dandelion (O), timothy (O), false oat-grass (F) and smooth meadow-grass <i>Poa pratensis</i> (F).</p>	
45	<p><b>Arable</b></p> <p>Arable field managed as a hay meadow to cultivate hay bales / silage. Species present included timothy (A), dandelion (O), annual meadow-grass (O), perennial rye-grass grass (D), Yorkshire-fog (R), cow parsley (R), creeping buttercup (R), white clover (A), dandelion (R) and greater plantain (R).</p> <p>The field boundaries were noted to include more ruderal species such as spear thistle, nettle, common hogweed.</p>	
46	<p><b>Arable</b></p> <p>Arable field managed as a hay meadow to cultivate hay bales / silage. Field was cut immediately prior to survey. Species present (based upon fresh arisings) included timothy (D), dandelion (F), annual meadow-grass (f), perennial rye-grass (a), Yorkshire-fog (O), cock's-foot (O), cow parsley (O), spear thistle (O), meadow buttercup (O), crested dog's tail (O), creeping buttercup (O) and ragwort (O).</p> <p>The field boundaries were noted to include more ruderal species such as spear thistle, nettle, common hogweed.</p>	



Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
47	<p><b>Bare Ground</b></p> <p>Created as a result of poaching by horses and sheep. Comprised of bare earth and a manure pile.</p>	
48	<p><b>Bare Ground</b></p> <p>Created as a result of poaching by horses.</p>	
49	<p><b>Wall</b></p> <p>Dry-stone wall in south-west of site.</p>	



Target Note	Description (with DARFOR <sup>11</sup> abundance)	Photograph
50	<p><b>Potential Reptile Refugia</b></p> <p>Examples of piles of brash, rubble and hay / grass cuttings which could offer suitable reptile refuge.</p>	
51	<p><b>Japanese knotweed <i>Reynoutria japonica</i></b></p> <p>A historic stand of Japanese knotweed which appeared to have been treated. No signs of new growth were observed.</p>	

# Appendix E – Building Descriptions

#	Location	Description	Photograph
B1	Hermit House Farm	Block construction, corrugated metal roof (slight pitch), single storey, no loft void or obvious potential roost locations. Open access (doors only half height). <b>Negligible bat roosting suitability.</b>	
B2	Hermit House Farm	Lower walls - block construction, upper walls – vertical wooden slats. Dual pitched corrugated roof, no loft void, open access into barn. <b>Negligible bat roosting suitability.</b>	



#	Location	Description	Photograph
B3	Hermit House Farm	<p>Brick construction, single storey, dual pitch corrugated metal roof, no loft void, open access barn.</p> <p><b>Low bat roosting suitability.</b></p>	 
B4	Hermit House Farm	<p>Large barn with multiple sections of different material. Lower wall materials included brick and block walls, with upper wall sections comprising either corrugated asbestos sheeting, corrugated iron or asbestos cladding. Corrugated metal roof (no roof void),</p>	



#	Location	Description	Photograph
		<p>open access to a large area of the barn (via open / half-length doors). Limited potential for bat roosting but given the size and complex floor plan and site of the building, assessed as offer <b>Moderate bat roosting suitability.</b></p>	



#	Location	Description	Photograph
B5	Hermit House Farm	<p>Lower walls - block construction, upper walls – vertical wooden slats, dual pitched corrugated roof, no loft void, open access barn.</p> <p><b>Negligible bat roosting suitability.</b></p>	
B6	Hermit House Farm	<p>Single storey, block construction, single pitched (slightly) corrugated metal roof, no loft void, open access due to half-length doors, no obvious potential bat roost features.</p> <p><b>Negligible bat roosting suitability.</b></p>	
B7	Hermit House Farm	<p>Built in 1983, single storey, stone construction, dual pitched concrete tile roof with roof void, UPVC soffits (well-sealed with silicone) and windows; roof, mortar and building generally in good condition with no potential roost features (PRFs) for bats noted.</p> <p><b>Negligible bat roosting suitability.</b></p>	



#	Location	Description	Photograph
			
B8	Hermit House Farm	<p>Built in 2006, single storey, stone construction, dual pitched concrete tile roof with roof void, UPVC soffits and windows; roof, mortar and building generally in good condition with no bat PRFs noted.</p> <p><b>Negligible bat roosting suitability.</b></p>	 



#	Location	Description	Photograph
B9	Redbrook Farm (off site)	<p>Corrugated metal roof suspended by steel posts, no loft void, considered unsuitable for roosting bats.</p> <p><b>Negligible bat roosting suitability.</b></p>	
B10	Redbrook Farm (off site)	<p>Corrugated metal / wooden construction, two-storey height, corrugated metal dual pitch roof, uninsulated, no loft void, open access via half height doors, no obvious PRFs for bats.</p> <p><b>Negligible bat roosting suitability.</b></p>	



#	Location	Description	Photograph
B11	Redbrook Farm (off site)	<p>Brick construction, flat roof, open access for bats via missing windows, open doors, holes in wall, some missing mortar, single storey.</p> <p><b>Moderate bat roosting suitability.</b></p>	
B12	Redbrook Farm (off site)	<p>Metal silo, open access via missing hatch. No PRFs for bats identified externally or internally. Considered unsuitable for roosting bats.</p> <p><b>Negligible bat roosting suitability.</b></p>	



#	Location	Description	Photograph
B13	Redbrook Farm (off site)	<p>Corrugated metal sheet and wooden slat construction, open access barn, slight pitched corrugated metal roof, no loft void, no PRFs for bats seen.</p> <p><b>Negligible bat roosting suitability.</b></p>	
B14	Redbrook Farm (off site)	<p>Single storey, block construction, wooden barge board, corrugated metal roof, no loft void.</p> <p><b>Negligible bat roosting suitability.</b></p>	
B15	Redbrook Farm (off site)	<p>Brick interior, stone outer wall, open access via missing doors and holes / cavities observed in wall, single storey.</p> <p><b>Low bat roosting suitability.</b></p>	



#	Location	Description	Photograph
B16	Redbrook Farm (off site)	<p>Two-storey farmhouse, slate dual pitched roof, stone / brick construction, some concrete render, loft void present. Farmer indicated that bats have historically roosted in building (prior to 2018). Potential access points for bats available due to missing mortar / damage stone at the upper wall sections and also under slate tiles.</p> <p><b>High bat roosting suitability.</b></p>	

#	Location	Description	Photograph
			
B17	Redbrook Farm (off site)	Corrugated metal construction with wooden cladding. Gaps between metal and wood cladding boards. Air vents on north and south walls. <b>Low bat roosting suitability.</b>	
B18	Offsite	Offsite garage associated with adjacent residential dwelling. Adjoins the site boundary in the south-east of the site. Stone construction with dual pitch slate roof. Open access to roof void / internal area between tiles and upper wall. <b>Moderate bat roosting suitability.</b>	



#	Location	Description	Photograph
B19	Redbrook Farm (off site)	<p>Block construction with a flat, corrugated metal roof. Some missing barge board (timber) but considered unlikely to support any suitable features for roosting bats.</p> <p><b>Negligible bat roosting suitability.</b></p>	



# Appendix F – **CONFIDENTIAL** Badger Appendix (Not for Public Distribution)



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