

Appendix 6.1

Preliminary Ecological Appraisal - Report 1





Springwell Energyfarm Ltd

Springwell Solar Farm

Preliminary Ecological Appraisal Report

2483765

JULY 2023

RSK GENERAL NOTES

Project No.: 2483765

Title: Springwell Solar Farm – Preliminary Ecological Appraisal Report

Client: Springwell Energyfarm Ltd

Date: July 2023

Office: Coventry

Status: Rev 02

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

RSK Biocensus (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK Biocensus for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Biocensus.

Switchboard: +44 (0)330 223 1074 Company contact: Enquiries@biocensus.co.uk

EXECUTIVE SUMMARY

This report presents the results of a preliminary ecological appraisal (PEA) carried out in April and May 2022, and in January and June 2023 at the proposed Springwell solar farm site, near Ashby de la Launde, Lincolnshire. It has been produced to inform the proposed installation of a solar farm development at the Site.

The Site is comprised primarily of arable fields dissected by ditches, streams, and hedgerows with mixed plantation woodlands and ponds scattered throughout the survey area.

No impacts to any statutory designated sites are anticipated due to their distances from the Site. There are 22 non-statutory designated nature conservation sites within 2 km of the Site, seven of which are within the Site boundary. Measures to protect these sites during construction should be outlined in a construction and environmental management plan (CEMP) to ensure that the proposed works will not have any significant impacts on them.

No notable or invasive plant species were recorded within the survey area. Other than the arable fields, the majority of the habitats within the survey area are included in the local biodiversity action plan. The semi-natural habitats on Site should be retained and protected wherever possible - particularly the ponds, species-rich neutral grassland, and areas of woodland.

Further surveys to determine the extent of potential ecological constraints are recommended, including:

- breeding bird surveys to assess breeding status and population sizes of protected and notable species;
- bat activity surveys (involving the deployment of static detectors) throughout the survey area to inform of bats usage of the Site and to determine mitigation should any hedgerows or suitable habitat be impacted by works;
- water vole and otter surveys of the ditches and streams within the survey area if they will be affected by works or if a 10 m buffer zone cannot be implemented in the design;
- targeted hedgerow surveys if any sections of hedgerows need to be removed; and
- a pre-construction update badger survey within six months of start of works to check for any new badger activity at the Site.

Impacts on ecology receptors will be assessed and outlined in the Environmental statement.

In addition to the above the design is proposed to be biodiversity led. A detailed biodiversity design will be developed in tandem with the scheme design, ensuring considerable gains for biodiversity with habitat enhancement and creation measures benefitting flora and fauna and making a significant contribution to local biodiversity objectives.

CONTENTS

1.0 INTRODUCTION	1
1.1 Purpose of this report	1
1.2 Landscape context	1
1.3 Development proposals.....	1
1.4 Validity of data	2
2.0 METHODS.....	3
2.1 Overview.....	3
2.2 Background data search	3
2.3 Plants and habitats	5
UKHab survey.....	5
Invasive non-native species (INNS)	5
2.4 Protected and notable animals.....	5
General	5
Invertebrates	5
Great crested newts.....	6
Reptiles	6
Birds.....	7
Bats.....	7
Water voles and otters.....	8
Badgers.....	9
Species of Principal Importance	9
2.5 Constraints and limitations	9
3.0 RESULTS	10
3.1 Background Data Search	10
Biodiversity action plans	10
Statutory designated sites	10
Non-Statutory Sites.....	11
Protected and Notable Species	12
3.2 Plants and habitats	12
UKHab Survey	12
Invasive Non-native Species	16
3.3 Protected and notable animals.....	16
Terrestrial invertebrates.....	16
Fish and white-clawed crayfish.....	16
Great crested newts and other amphibians.....	16
Reptiles	17
Birds.....	17
Bats.....	19
Hazel dormice	19
Water voles and otters.....	19
Badgers.....	20
Other species	20
4.0 EVALUATION AND RECOMMENDATIONS.....	21
Statutory designated sites	21

Non-statutory designated sites	21
Habitats and plants	21
Protected and other notable species	22
Summary of further surveys recommended	23
Enhancements	23
5.0 REFERENCES	24
FIGURES	25
APPENDIX A – NATURE CONSERVATION LEGISLATION AND POLICY	26
APPENDIX B – NOTEWORTHY SPECIES RECORDS	35
APPENDIX C – TARGET NOTES	37
APPENDIX D – DESCRIPTION OF PONDS WITHIN SURVEY AREA.....	51
APPENDIX E – GREAT CRESTED NEWT HABITAT SUITABILITY INDEX RESULTS.....	56
APPENDIX F – LOCAL WILDLIFE SITES CITATIONS	58

TABLES

Table 1 Data sources	3
Table 2 Categorisation of the suitability of buildings or trees for roosting bats (Collins 2016)	8
Table 3 Statutory designated sites: International sites within 10 km of the site boundary and 2km for nationally protected sites (such as SSSIs and LNRs)	10
Table 4 Non-statutory designated sites within 2 km of the site boundary	11
Table 5 HSI and eDNA Survey Results	17
Table 6: Noteworthy species records within 2 km of the Site boundary	35
Table 7 Description of ponds within the survey area	51
Table 8 GCN HSI Results	56

1.0 INTRODUCTION

1.1 Purpose of this report

- 1.1.1 This report presents the results of a preliminary ecological appraisal (PEA) comprising a background data search and a UKHab survey, with assessment for protected or otherwise notable species, for the proposed Springwell solar farm, near Ashby de la Launde, Lincolnshire (central National Grid Reference TF056569). The survey area included the land within the red-line boundary (the three areas - east, central and west, where the solar farm will be located) as well as land connecting these areas in which the cable connecting them will be located. The specific fields to be developed and the exact cable route have yet to be confirmed. The Site and survey area are shown in *Figure 1*.
- 1.1.2 Ponds within the survey area were assessed for their suitability to support great crested newts (*Triturus cristatus*), and suitable ponds were environmental DNA (eDNA) tested for their presence/likely absence. A ground-level assessment of all trees potentially suitable for bats within the survey area and along the boundaries was carried out.
- 1.1.3 The majority of the Site was surveyed in the spring of 2022. The fields to the north of Thompson's Bottom (central National Grid reference - TF 01735 55991) were added to the scheme in late 2022 and surveyed in January 2023. An additional four fields to the west of RAF Digby (central National Grid reference - TF 03223 56195) were added to the scheme and surveyed in June 2023.
- 1.1.4 The report identifies ecological constraints relevant to the project, specifies any further survey or mitigation requirements, gives recommendations for avoidance and protection through design changes, and suggests opportunities for ecological enhancement. The appraisal was carried out on behalf of EDF.

1.2 Landscape context

- 1.2.1 The Site is located close to the villages of Blankney, Scopwick, and Ashby de la Launde in the district of North Kesteven, Lincolnshire. It is dominated by agricultural land, broadleaved woodland, and hedgerows. There are fourteen ponds within the survey area. Streams and ditches intersect many of the fields, although most were dry at the time of survey.
- 1.2.2 The surrounding landscape is largely arable with a mixture of villages, farm complexes, RAF Digby, woodland, hedgerows, and some scattered residential properties.

1.3 Development proposals

- 1.3.1 The assessment is based on the red line boundary of the Site and connecting areas as shown in Figure 1. The proposals are for the installation of solar panels within the site boundary and associated infrastructure.

1.4 Validity of data

- 1.4.1 According to Chartered Institute of Ecology and Environmental Management (CIEEM) advice (CIEEM 2019), survey data are valid for a period of 12 to 18 months from the date of the survey. The report highlights any circumstances where data may be valid for less than 18 months. Between 18 months and three years if any significant changes to the baseline have occurred a professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the PEA) and then review the validity of the report.

2.0 METHODS

2.1 Overview

2.1.1 The preliminary ecological appraisal (PEA) was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), and it therefore included:

- a desk study (including records of designated sites, protected and notable species; a review of aerial photographs; obtaining information from the DEFRA and JNCC websites, and the local authority website; and requesting data from the local records centre) here called a background data search (BDS); and
- a field survey that informed habitat mapping (UKHab), an assessment of the possible presence of protected or priority species, and the likely importance of habitat features.

2.1.2 The PEA report includes an ecological description of the survey area and information about species that may occur there. Notes and mapping of any incidental sightings of invasive non-native plant species and protected or priority fauna species are also provided.

2.1.3 The survey of the majority of the Site was carried out on April 22nd 25th-28th and May 11th, 2022. The survey of the additional fields to the north of Thompson’s Bottom was carried out on 25th January 2023 and the additional four fields to the west of RAF Digby was carried out on 26th June 2023. All the PEA surveys were carried out by Liz Probert of RSK Biocensus. Liz is a senior ecology consultant with over nine years’ experience in ecological consultancy, with extensive experience in carrying out PEAs.

2.2 Background data search

2.2.1 A search was made in in April 2022 for relevant reference materials. An update search was carried out in January 2023 to include the area around the additional fields to the north of Thompson’s Bottom and in June 2023 to include the four fields west of RAF Digby. A list of sources is given in Table 1.

Table 1 Data sources

Information obtained	Available from
Protected and noteworthy species-records	Greater Lincolnshire Nature Partnership
MAGIC (the Multi-Agency Geographic Information website) to view statutory designated nature conservation sites	www.magic.gov.uk
Nationally designated site locations and citations	Natural England
European and Internationally designated site locations and citations	Joint Nature Conservation Committee (JNCC) website

Information obtained	Available from
Local Designated site locations and citations	Greater Lincolnshire Nature Partnership
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Details of species and habitats listed on the LBAP	Local biodiversity action plan website
Local planning guidance and policies	Central Lincolnshire Local Plan (adopted 2017) Policy LP21: Biodiversity and Geodiversity
Aerial photography	As a viewer only, sources include: www.google.com ; www.bing.com ; Google earth. Where reproduced as figures, sources vary and be licensed through ArcGIS, as stated.

2.2.2 A search was made for information on statutory designated sites (often internationally and nationally important sites for ecology) and non-statutory designated (local wildlife) sites within 2 km of the survey area boundary. The search was extended to 10 km for internationally designated sites i.e., Ramsar sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA)¹.

2.2.3 The search for noteworthy species within 2 km of the survey area boundary included species within these search parameters:

- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017);
- nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 and The Protection of Badgers Act 1992;
- species listed as critically endangered, endangered, or vulnerable based on the IUCN Red List Categories and Criteria 2001;
- all species listed on the RSPB Birds of Conservation Concern 4 as red or amber;
- nationally rare or nationally scarce species;
- notable invertebrates; and
- species that are of principal importance under The Natural Environment and Rural Communities (NERC) Act (2006) or are priority species under the local biodiversity action plan.

¹ SACs and SPAs were formerly called 'European Sites' and part of the Natura 2000 network; post- 'Brexit', they are now considered part of the UK's 'national site network'. Ramsar sites are sites of international importance. See Appendix A for details. Note that SPAs, SACs and Ramsar sites are also underpinned by SSSI designations whose citations/boundaries may be slightly different.

2.3 Plants and habitats

UKHab survey

- 2.3.1 The field survey was based on the UKHab survey approach (Butcher et al., 2020, 2020a) and habitats were identified down to at least level 4, where possible. The survey involved the following elements:
- i. habitat mapping using a set of standard colour codes and secondary codes to indicate habitat types on a UKHab habitat map (*Figure 2*); and
 - ii. a description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the UKHab habitat map, referred to as target notes.
- 2.3.2 Vascular plant species were recorded during the survey, though at this level of survey, no species lists should be regarded as exhaustive (additional species would almost certainly be found in more detailed surveys or repeat surveys at various times of the year).
- 2.3.3 Plant nomenclature in this report follows Stace (2019) for native and naturalised species of vascular plant, and mosses and liverworts follow Hill et al. (2008). Introduced species and garden varieties were identified using relevant Floras. Plant names in the text are common names with the scientific names in brackets afterwards on the first occurrence only. Doubtful identifications are preceded by 'cf.' placed before the specific epithet where the plant is very probably the species indicated, but it could not be distinguished from similar members of the genus with certainty.

Invasive non-native species (INNS)

- 2.3.4 The survey did not involve exhaustive surveying for individual plant species, and various invasive species may be little in evidence at various times of year (depending on the species). A survey seeking to identify habitat types cannot therefore be relied upon to provide firm information about the presence or extent of any invasive non-native species (even though some things may be evident). However, if any non-native invasive species were seen during the course of the survey, then they would be recorded.

2.4 Protected and notable animals

General

- 2.4.1 The survey area was assessed for its suitability to support protected or otherwise notable animals that are likely to occur in the area. Taking into account the results of the BDS, the geographic location, connectivity to natural habitats in the wider landscape, the nature and extent of habitats at the survey area, and the proposed development, specific assessment was also carried out for the species/species groups outlined below.

Invertebrates

- 2.4.2 The survey area was assessed for its suitability to support notable species and/or assemblage of invertebrates, but no specific surveys were undertaken. The habitat requirements of particular invertebrates are often species-specific, so consideration was

given to the presence of features and habitats that might be suitable for the notable species identified in the BDS.

Great crested newts

- 2.4.3 Although standing water is essential for their breeding, great crested newts are terrestrial for most of the year and have been recorded up to 500 m from their breeding ponds (Beebee & Griffiths, 2000). The survey area was assessed for its suitability to support both terrestrial and breeding great crested newts. Suitable breeding ponds are typically well-vegetated, relatively clean and unpolluted, have few fish or wildfowl, and are likely to retain water throughout most (but not necessarily all) summers. Highly suitable terrestrial habitats include woodland, scrub and tussocky grassland, although great crested newts can be found in a broad range of sub-optimal habitats as well.
- 2.4.4 The locations of ponds were identified using OS maps, aerial imagery, and site visits. Their assessment of suitability for great crested newts was carried out using a Habitat Suitability Index (HSI) developed by Oldham et al. (2000), which is derived from assessment systems developed by the US Fish and Wildlife Service. It is a numerical index, between 0 and 1, where 0 indicates unsuitable habitat and 1 represents optimal habitat.
- 2.4.5 There is a positive correlation between HSI scores and presence and abundance of Great Crested Newts in ponds. Generally, ponds with high HSI scores are likely to support larger populations. However, the relationship is not sufficiently precise to conclude that a pond with a high HSI will definitely have a large newt population, or that a pond with a low HSI score will only have a small newt population or no newts at all.
- 2.4.6 eDNA samples were taken from ponds (which had sufficient depth of water to collect viable samples from) by Liz Probert and Joseph Mould on 13th May 2022. An additional pond near Brauncewell was surveyed by Liz Probert and Jonathan Scragg on 14th April 2023. There are no additional ponds within 500m of the four additional fields to the west of RAF Digby. Using a kit purchased from approved suppliers, water samples were collected and analysed according to strict protocols approved by Natural England and described in Biggs et al. (2014).

Reptiles

- 2.4.7 The survey area was assessed for its suitability for the four most widespread reptile species, with particular attention given to those features that provide suitable basking areas (e.g., south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (e.g. rough grassland and scrub).
- 2.4.8 Specific habitat requirements differ between species. Common lizards (*Zootoca vivipara*) and slow-worms (*Anguis fragilis*) favour rough grassland. Grass snakes (*Natrix helvetica*) have broadly similar requirements, with a greater reliance on ponds and wetlands.

Adders (*Vipera berus*) use a range of fairly open habitats with some cover but are most often found in dry heath.

Birds

- 2.4.9 The survey area was assessed for its suitability to support diverse assemblages and/or uncommon species of breeding and non-breeding birds, with an emphasis on those species that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), the red and amber lists of the RSPB's Birds of Conservation Concern 4 (Stanbury et al., 2021) and other notable species recorded in the BDS, including any species that are qualifying features of nearby designated sites.
- 2.4.10 Consideration was given to the survey area's connectivity to landscape features that are likely to be of particular importance to birds, such as extensive areas of semi-natural woodland or wetlands. Buildings were surveyed for their suitability for barn owls and other species, with signs including nesting sites, feathers, droppings, and pellets.

Bats

- 2.4.11 Habitats were assessed for their suitability for foraging and commuting bats in line with guidance provided in Collins (2016). Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, rivers and species-rich or rough grassland.
- 2.4.12 Trees and man-made structures were noted if they had suitability for roosting bats (Collins, 2016). This involved identifying features that roosting bats may favour (e.g. holes, cracks and cavities that might be used as bat access-points or roost sites).

Preliminary roost assessment (PRA) of built structures

- 2.4.13 Buildings were assessed externally and internally where possible to ascertain suitability for roosting bats, taking account of the following factors that influence the likelihood of bats roosting:
- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
 - Construction detail: the type and construction of architectural features such as attics, soffit boxes, lead flashing and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
 - Building condition: whether the building has no roof or has a sound roof without any potential bat-access points.
 - Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
 - Potential bat-access points: whether there is flight and crawl access.
 - Potential roosting locations: descriptions of all bat-accessible voids, cracks and crevices.

2.4.14 The building’s potential to support roosting bats was then categorised as defined in Table 2.

Table 2 Categorisation of the suitability of buildings or trees for roosting bats (Collins 2016)

Category (Potential to support roosting bats)	Description
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.
Low suitability	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 PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate suitability	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 for 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).
High suitability	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 and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed roost	Bats or evidence of bats recorded during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

Ground-Level Tree Surveys

2.4.15 All hedgerow and standard trees within the survey area were surveyed from ground level. Features that might be used by roosting bats were described and categorised according to accepted guidelines (Collins, 2016). Each tree was given a category during the ground-level surveys based on its potential for roosting bats.

Water voles and otters

2.4.16 Waterbodies and watercourses and their surrounding habitats were assessed to determine whether they were suitable for water voles (*Arvicola amphibius*). Suitable habitats include vegetated earth banks, reed beds, flowing water and wet ditches. Incidental signs of water vole activity, including burrows, feeding platforms, food remains and latrines, were recorded if they were encountered.

2.4.17 Waterbodies and watercourses on the Site were also assessed for their suitability for otters (*Lutra lutra*). Otters require clean rivers and associated waterbodies with an abundant, varied supply of food and plenty of bank-side vegetation, offering secluded sites for their holts. Other suitable habitats include reed beds and interconnected ditches

and streams. Incidental signs of otter activity, including holts, foraging signs, paths (runs), footprints and spraints, were recorded if they were encountered.

Badgers

- 2.4.18 An initial assessment was carried out to identify areas that might be used by badgers (*Meles meles*) for commuting, foraging or setts within 30 m of all areas potentially affected by works (where access was possible). The area was systematically searched for signs of badgers including setts, foraging signs, paths (runs) and latrines where possible, and the category of sett and levels of activity visible at each sett was recorded.

Species of Principal Importance

- 2.4.19 Consideration was also given to the Site's potential for other noteworthy species such as those listed under Section 41 of the NERC Act (2006) (formerly UK Biodiversity Action Plan (BAP) species) that are likely to be present in the area e.g., brown hare (*Lepus europaeus*) and hedgehog (*Erinaceus europaeus*).

2.5 Constraints and limitations

- 2.5.1 Less conspicuous plant species (including INNS) may have been missed as a result of the survey being undertaken in early spring and winter. However, the majority of plants present were confidently identified, and the survey was sufficient to make a broad assessment of the habitats present on the Site.
- 2.5.2 This preliminary appraisal as to whether protected or otherwise notable species might occur on the Site is based on the suitability of habitat, the known distribution of relevant species in the local area (from online sources and desk study), and any signs of the relevant species. It does not constitute a full and definitive survey of any protected species group.
- 2.5.3 Field signs for protected and valuable species are often difficult to find or absent from a site. The survey conducted was not intended to be a comprehensive presence/absence survey for all species, but rather to provide an indication of the likely presence of such species based on the field signs found, and the nature of the habitats present.
- 2.5.4 Access was not made to adjacent land, and therefore it remains possible that a badger sett (or other evidence of protected or notable species) beyond the site boundary could have been missed. Much of the woodlands within the Site was also covered by dense bramble scrub, which prevented a full survey for both badger and nesting birds being conducted. The peripheries of all such areas were, however, extensively searched, providing a high level of confidence in the results and assessment provided.
- 2.5.5 One agricultural building (TN22) could not be surveyed internally. Trees within woodlands were not assessed individually for their suitability for roosting bats.
- 2.5.6 All recommendations made in this report are based on the information provided by EDF. A detailed layout is not available at this time. If the development plans change significantly or extend outside of the survey area, then an ecologist must be consulted and further surveys may be required.

3.0 RESULTS

3.1 Background Data Search

Biodiversity action plans

3.1.1 The latest Lincolnshire local biodiversity action plan (LBAP) lists 26 habitat action plans (HAPs) and 11 species or species group action plans (SAPs). The local HAPs and SAPs that are relevant to the proposed development are:

Habitats:

- Arable field margins;
- Hedgerows and hedgerow trees;
- Lowland meadows;
- Ponds, lakes, and reservoirs, rivers, canals, and drains; and
- Lowland mixed deciduous woodland.

Species:

- Bats;
- farmland birds;
- newts; and
- water vole.

Statutory designated sites

3.1.2 There are no internationally protected nature conservation sites within 10 km of the site boundary. ‘The Wash’ Ramsar/SPA/SAC is approximately 35km from the Site. The Wash is designated for wading birds and estuarine habitats. However, being approximately 35km from the Site its habitats and bird populations are not expected to be affected by works due to distance and nature of works.

3.1.3 There are no nationally protected statutory designated nature conservation sites within 2km. There is however one statutory designated geological site within 2km, which is listed in Table 3.

Table 3 Statutory designated sites: International sites within 10 km of the site boundary and 2km for nationally protected sites (such as SSSIs and LNRs)

Site name	Reasons for designation	Approximate distance (km) and direction from site
Metheringham Heath Quarry SSSI	Geological SSSI rather than biological - The rocks which occur here provide an almost complete section through the whole of the Lincolnshire Limestone Formation, laid down in	1.9km northwest

Site name	Reasons for designation	Approximate distance (km) and direction from site
	a warm, shallow sea during Middle Jurassic times about 170 million years ago.	

Non-Statutory Sites

3.1.4 There are 22 non-statutory designated nature conservation sites (Local Wildlife Sites LWS) within 2 km of the site boundary, seven of which are within the Site. There is also one non-statutory local geological site. The designated sites present within the study area are listed in Table 4 along with their proximity to the Site. Citations for these sites are included in Appendix G.

Table 4 Non-statutory designated sites within 2 km of the site boundary

Non-Statutory Designated Site name	Approximate distance (km) from site
Blankney Brick Pit LWS	Within site boundary
Temple Road Verges, Welbourn to Brauncewell 2 LWS	Within site boundary
Bloxholm Wood LWS/Lincolnshire Wildlife Trust reserve	Within site boundary
A15, Slate House Farm to Dunsby Pit Plantation 1 LWS	Within site boundary
A15, Green Man Road to Cuckoo Lane 2 LWS	Within site boundary
Gorse Lane 1 LWS	Within site boundary
Gorse Hill Lane Verges 1 LWS	Within site boundary
Blankney Dyke 2 LWS	0.3km
Long Wood, Blankney LWS	0.6km
Gorse Hill Lane Verges 2 LWS	0.6km
Blankney Dyke 1 LWS	0.6km
Longwood Quarry, Blankney LWS	0.8km
Wellingore Heath Road Verges 2 LWS	0.8km
St John the Baptist Churchyard, Temple Bruer LWS	0.8km
Brauncewell Quarry LGS	1.1km
Scopwick Heath Old Quarry LWS	1.1km
Green Man Lane 3 LWS	1.2km
Navenby Heath Road Verges 2 LWS	1.6km
Green Man Lane 2 LWS	1.7km

Other notable sites

- 3.1.5 There is one area of ancient woodland within 2 km of the site boundary, namely Long Wood which is approximately 475m west of the site boundary.

Protected and Notable Species

- 3.1.6 The BDS returned over 1000 records of 190 species recorded between 2000 and 2021 within 2km of the survey area boundary. Noteworthy species include species of principal importance that are listed under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.
- 3.1.7 Of these, 38 species are birds, one is fish, five are invertebrates (lepidoptera only), 10 are mammals (of these, six are bats), 47 are plants, and two are reptiles.
- 3.1.8 Species that are protected by law under Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended), Schedules 1, 2, 5 and 8 of The Wildlife and Countryside Act 1981 (as amended) or The Protection of Badgers Act 1992 that have been recorded in the search area are highlighted in the full species list is given in Appendix B. Those of relevance to the survey area and the current proposals are discussed in Sections 4.2 and 4.3.

3.2 Plants and habitats

UKHab Survey

- 3.2.1 The UKHab map is provided as Figure 2 and shows the location of the target notes referred to in the text below. A full description for each of the target notes is given in Appendix C. The following habitat types (with UKHab codes in brackets) are present on and around the survey area:

- Other neutral grassland (g3c)
- Modified grassland (g4)
- Lowland mixed deciduous woodland (w1f)
- Other woodland; mixed; mainly broadleaved (w1h5)
- Line of trees (w1g6)
- Other woodland; mixed; mainly conifer (w1h6)
- Hedgerow (priority habitat) (h2a)
- Other blackthorn scrub (h3a6)
- Hawthorn scrub (h3f)
- Mixed scrub (m3h)
- Arable field margins (c1a)
- Cereal crops (c1c)
- Non-cereal crops (c1d)
- Winter stubble (c1c5)

- Developed land; sealed surface (u1b)
- Buildings (u1b5)
- Artificial unvegetated, unsealed surface (u1c)
- Built linear features (u1e)
- Standing open water (r1)
- Other rivers and streams (r2b)

Other neutral grassland (g3c)

- 3.2.2 Uncultivated margins of neutral grassland approximately 0.5-1.5m wide line the perimeter of the majority of the fields within the survey area and form the boundaries in the fields to the west of the A15 road (e.g., Target Note 1).
- 3.2.3 Larger areas are also present within the survey area, including to the south of Cuckoo Lane (TN2), and a large field in the north of the Site (TN3). The sward of these areas was typically long and tussocky.

Modified grassland (g4)

- 3.2.4 Forty-eight of the fields within the survey area were species-poor modified neutral grassland. The sward was long in the majority of the fields, though fields in the southwest of the Site, west of the A15, were in the process of being cut at the time of the survey (e.g. TN4).

Woodland (w)

- 3.2.5 In the northeast corner of the survey area, adjacent to the railway, was an area of planted young trees on the site of a woodland that was felled in 2019 (date estimated from Google Earth images) (TN5). The woodland stood on the site of a former brickworks, and bricks and rubble are still present.

Other lowland mixed deciduous woodland (w1f7)

- 3.2.6 The Site borders Bloxham Wood, a Lincolnshire Wildlife Trust reserve (TN6).

Line of trees (w1g6)

- 3.2.7 Lines of trees form the boundary of several of the fields within the survey area. Two have been planted as a line of field maple (*Acer campestre*) (TN7) and white poplar (*Populus alba*) (TN8) trees. The rest are grown out hedgerows at least 5m tall, comprised predominantly of blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus monogyna*), with

elder (*Sambucus nigra*), sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), and willow (*Salix sp.*) also present.

Other broadleaved woodland types (w1g7)

- 3.2.8 Several small, semi-natural woodlands which do not appear to have originated as plantations are present within the survey area (e.g. TN9).

Other woodland; mixed; mainly broadleaved (w1h5)

- 3.2.9 The majority of woodlands within the survey area were mixed broadleaved and conifer plantations.
- 3.2.10 The plantations which are mainly broadleaved are dominated by mature oak or beech, with sycamore, ash, and Scots pine (*Pinus sylvestris*) also present within the canopy (e.g. TN10). The understory of these woodlands is typically dense nettle with some bramble, young holly, hawthorn, and blackthorn. Densely planted blackthorn and hawthorn form the perimeter of many of the woodlands. Pheasant rearing pens are present within the majority of these woodlands.
- 3.2.11 An area of broadleaved woodland consisting primarily of field elm (*Ulmus minor*) has grown along Cuckoo Lane, to the west of RAF Digby (TN11). Other species present included ash and hawthorn.

Other woodland; mixed; mainly conifer (w1h6)

- 3.2.12 Scots pine plantations comprise the remainder of the woodlands within the survey area (e.g., TN12). Broadleaved species including oak, sycamore, ash, willow species, elder, hawthorn, and blackthorn are also present within the woodlands and around the perimeter. The understory is typically dense nettle and bramble.

Hedgerow (h2a)

- 3.2.13 Hedgerows form the boundaries of the majority of the fields within the survey area and border many of the roads and lanes. The majority are comprised either solely of hawthorn, or of hawthorn and blackthorn with occasional elder, ash, sycamore, and dogwood. Many of the hedgerows have immature or mature oak, ash, sycamore, elder, or beech trees. All appear to have been flailed within the last three years – none of the hedgerows have been laid.

Other blackthorn scrub (h3a6)

- 3.2.14 Blackthorn scrub forms the boundary of two of the fields south of Cuckoo Lane (TN13).

Hawthorn scrub (h3f)

- 3.2.15 Isolated stands of hawthorn that do not appear to have once been part of a hedgerow are located within the boundaries of several of the fields (e.g., TN14).

Mixed scrub (h3h)

- 3.2.16 Stands of mixed scrub are located around several of the ponds within the survey area, on field boundaries, and along ditches. In two locations, mixed scrub fills the hollow of

disused quarries (TN145 and TN156). The scrub was comprised of hawthorn, blackthorn, bramble, and willow.

Arable margins sown with wild flowers or a pollen and nectar mix (c1a6)

3.2.17 The western margin of two of the fields to the south of the survey area (TN17) has been sown with a pollen and nectar mix.

Legume-rich ley (c1b6)

3.2.18 A number of fields (e.g. TN18) had been sown with legumes, including alfalfa (*Medicago sativa*).

Cereal crops (c1c)

3.2.19 Thirty-eight of the fields within the survey area (e.g., TN19) had been planted with cereal crops including maize (*Zea mays*), winter wheat, and barley (*Hordeum vulgare*).

Winter stubble c1c5

3.2.20 Three of the fields within the survey area had been planted with maize which had been left as stubble after harvesting (e.g., TN20).

Developed land; sealed surface (u1b)

3.2.21 Small areas of hard standing are located close to the entrance to some of the fields and adjacent to agricultural buildings (e.g., TN21) and are used as storage or parking areas.

Buildings (u1b5)

3.2.22 Two agricultural buildings are located within the northeast of the survey area. One (TN22) could not be surveyed internally. The other two (TN22 and TN24) are open-sided and appear to be used for storage.

Built linear features (u1e)

3.2.23 The A15 road, B1191 road, and other smaller lanes run through the survey area.

3.2.24 Farm tracks also run through and alongside many of the fields.

Standing open water (r1)

3.2.25 There were 14 ponds within the survey area, of which 11 held water at the time of the survey. These are described in greater detail in Appendix D.

Other rivers and streams (r2b)

3.2.26 Streams and ditches run along the boundaries of a number of the fields, particularly in the north of the survey area. Many were dry during the survey. Species present included floating sweet grass (*Glyceria fluitans*), foals water cress (*Helosciadium nodiflorum*), water parsnip (*Berula erecta*), hemlock water dropwort (*Oenanthe crocata*), alder (*Alnus*

glutinosa), branched bur-reed (*Sparganium erectum*), and water horsetail (*Equisetum fluviatile*). Banks are lined with bramble, or neutral grassland species.

Invasive Non-native Species

3.2.27 No invasive non-native species were observed during the survey.

3.3 Protected and notable animals

3.3.1 Figure 2 shows the location of the target notes referred to in the text below, which show the location of particular features with suitability for protected and notable animals. A full description for each of the target notes is given in Appendix C.

Terrestrial invertebrates

3.3.2 The BDS returned six notable invertebrate species, including small heath (*Coenonympha pamphilus*), latticed heath (*Chiasmia clathrate*), wall (*Lasiommata megera*), cinnabar (*Tyria jacobaeae*), grayling (*Hipparchia semele*), and small blue (*Cupido minimus*).

3.3.3 Within the survey area, the habitats present were considered likely to support only a common assemblage of invertebrate species, typical of hedgerows, scrub, plantation woodlands, and species-poor grasslands. It is therefore not considered that further invertebrate surveys will be required.

Fish and white-clawed crayfish

3.3.4 There are no records of white-clawed crayfish (*Austropotamobius pallipes*) within 2km of the Site. Ditches and watercourses on the Site were either small, shallow and/or eutrophic therefore unlikely to be suitable for white-clawed crayfish.

3.3.5 The BDS returned one record of European eel (*Anguilla anguilla*).

3.3.6 The ponds and watercourses within the survey area are small and of relatively poor quality, though they connect with watercourses that are tributaries of the River Witham.

Great crested newts and other amphibians

3.3.7 The BDS revealed no records of great crested newts within 2km of the survey area boundary.

3.3.8 The BDS returned one record of common frog (*Rana temporaria*) within 2km of the survey area boundary.

3.3.9 Fourteen ponds are present within the survey area. These are described in greater detail in Appendix D. A summary of the HSI survey results is provided in Table 5, with the full details given in Appendix E.

3.3.10 The eDNA survey did not include four ponds – P4, P5, P10, and P12 – which were not surveyed as they were too shallow to sample and therefore considered unlikely to be suitable for breeding newts.

3.3.11 There are 14 off-site mapped ponds within 250m of the Site. However these ponds were not surveyed due to distance and nature of works (i.e. as works will mostly be within

unsuitable arable fields and any suitable GCN habitat on Site, such as hedgerows, woodland, and ponds, should not be impacted).

Table 5 HSI and eDNA Survey Results

Waterbody Number	HSI Score	Pond Suitability	eDNA Survey Result
1	0.72	Good	Negative
2	0.65	Average	Negative
3	0.58	Below average	Negative
4	0.77	Good	Not sampled (too shallow)
5	0.58	Below average	Not sampled (too shallow)
6	0.62	Average	Indeterminate
7	0.62	Average	Negative
8	0.62	Average	Negative
9	0.77	Good	Negative
10	0.50	Below average	Not sampled (too shallow)
11	0.53	Below average	Negative
12	0.54	Below average	Not sampled (too shallow)
13	0.52	Below average	Indeterminate
14	0.56	Below average	Negative

Reptiles

- 3.3.12 The BDS returned five records of reptiles within 2 km of the survey area recorded between 2015 and 2020. All records were of common lizard (*Zootoca vivipara*) and were located within RAF Digby – no other reptile species were recorded within 2 km.
- 3.3.13 Most of the survey area is unsuitable for reptiles, comprising large areas of monoculture arable land. However, connecting areas of woodland, scrub, hedgerow bases, rough grassland and spoil heaps/log piles could support low numbers of common reptiles. In particular, there were two areas of tussocky grassland that are likely to be suitable for reptiles (TN3 and TN24).

Birds

- 3.3.14 The BDS returned records of 38 bird species within 2 km of the survey area, of which 86% were recorded in RAF Digby.
- 3.3.15 Eight species are listed on Annex 1 of the Birds Directive: red kite (*Milvus milvus*), marsh harrier (*Circus aeruginosus*), hen harrier (*Circus cyaneus*), Montagu’s harrier (*Circus pygargus*), kingfisher (*Alcedo atthis*), merlin (*Falco columbarius*), peregrine (*Falco peregrinus*), and woodlark (*Lullula arborea*).
- 3.3.16 Fifteen species are included in Schedule 1 of the Wildlife and Countryside Act 1981 (some species are included on more than one list): quail (*Coturnix coturnix*), red kite, hen harrier, Montagu’s harrier, harsh harrier, barn owl (*Tyto alba*), kingfisher, hoopoe (*Upupa epops*), merlin, hobby (*Falco subbuteo*), peregrine, firecrest (*Regulus ignicapilla*), woodlark, fieldfare (*Turdus pilaris*), and redwing (*Turdus iliacus*).
- 3.3.17 Nineteen are listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006: grey partridge (*Perdix perdix*), hen harrier, Montagu’s harrier, lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*), turtle dove (*Streptopelia turtur*), cuckoo

(*Cuculus canorus*), woodlark, grasshopper warbler (*Locustella naevia*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), spotted flycatcher (*Muscicapa striata*), house sparrow (*Passer domesticus*), tree sparrow (*Passer montanus*), yellow wagtail (*Motacilla flava*), bullfinch (*Pyrrhula pyrrhula*), yellow hammer (*Emberiza citronella*), reed bunting (*Emberiza schoeniclus*), and corn bunting (*Emberiza calandra*).

- 3.3.18 Twenty-one species are included on the red list of birds of conservation concern: (grey partridge, hen harrier, Montagu's harrier, lapwing, curlew, turtle dove, cuckoo, swift (*Apus apus*), merlin, skylark (*Alauda arvensis*), grasshopper warbler, starling, fieldfare, spotted flycatcher, house sparrow, tree sparrow, yellow wagtail, linnet (*Linaria cannabina*), lesser redpoll (*Acanthis cabaret*), yellow hammer, and corn bunting.
- 3.3.19 Nine are included on the amber list of birds of conservation concern: graylag goose (*Anser anser*), quail, marsh harrier, redshank (*Tringa totanus*), snipe (*Gallinago gallinago*), kingfisher, song thrush, redwing, bullfinch, and reed bunting.
- 3.3.20 The survey area contains suitable habitat for ground-nesting birds. Lapwings with chicks and displaying lapwings were observed in several of the ploughed fields within the survey area, and an oystercatcher (*Haematopus ostralegus*) was seen in a ploughed field close to the railway (TN26). A field adjacent to the survey area held 27 lapwings and chicks (TN27). Singing skylarks were also observed in the majority of the modified grassland and cereal crop fields. Of the species identified through the BDS the arable and grassland fields within the survey area may also support species including quail, grey partridge, curlew, turtle dove, yellow wagtail, and yellowhammer.
- 3.3.21 Red kite was observed commuting over the survey area, though no nests or nesting behaviour was observed in any of the woodlands or trees within the survey area.
- 3.3.22 A barn owl was flushed from a tree in the woodland adjacent to the railway line. The barn close to the railway line (TN22) had a barn owl box inside it with suitable access points. Though the barn was not entered during the survey, pellets could be seen on the floor.
- 3.3.23 A corn bunting was heard singing in a field to the south of Cuckoo Lane. Corn bunting is a Section 41 species, as is lapwing which was confirmed to be breeding in several ploughed fields. Other likely breeding Section 41 species observed during the survey included grey partridge, starling, song thrush, dunnock (*Prunella modularis*), house sparrow, yellowhammer, reed bunting, and corn bunting.
- 3.3.24 Greenfinch (*Chloris chloris*) and linnet were observed within the survey area. They appear on the red list of birds of conservation concern (as well as grey partridge).
- 3.3.25 Mallard (*Anas platyrhynchos*), sparrowhawk (*Accipiter nisus*), moorhen (*Gallinula chloropus*), oystercatcher, stock dove (*Columba oenas*), woodpigeon (*Columba palumbus*), kestrel (*Falco tinnunculus*), whitethroat (*Sylvia communis*), wren (*Troglodytes troglodytes*), and pied wagtail (*Motacilla alba ssp. yarellii*) were observed during the phase 1 survey. These species appear on the amber list of birds of conservation concern.
- 3.3.26 The woodlands, hedgerows, and fields provide suitable nesting habitat for a range of bird species. At least five breeding bird survey visits are recommended, to be undertaken between March and July.

Bats

3.3.27 The BDS returned records of the following bat species within 2 km of the survey area:

- Sixteen records of unidentified bats;
- Six records of brown long-eared bat (*Plecotus auratus*) including a record of a roost approximately 1.2km from the survey area;
- Three records of common pipistrelle (*Pipistrellus pipistrellus sensu stricto*);
- Two records of soprano pipistrelle (*Pipistrellus pygmaeus*);
- Five records of unidentified pipistrelles; and
- Two records of Barbastelle (*Barbastella barbastellus*) including a record of a roost approximately 1.9km from the survey area.

3.3.28 Eighty-two individual and groups of trees were identified with moderate (36 trees) to high (36 trees) suitability for roosting bats.

3.3.29 The majority of the site was comprised of monoculture arable fields, which are of low suitability habitat for foraging and commuting bats. Small pockets of woodlands and hedgerows throughout the survey area provide moderate suitability habitat for foraging and commuting bats.

3.3.30 The barn in the northeast of the survey area (TN22) could not be surveyed internally. The barn in the north of the survey area (TN23) was constructed of corrugated metal and breezeblocks, with open sides. It has suitability to be used as a night roost, though is unlikely to be used by large numbers of roosting bats. The barn in the centre of the survey area (TN24) is also open-sided and unlikely to be used as a day roost by bats, though may be used as a night roost or transition roost.

Hazel dormice

3.3.31 Hedgerows within the Site provide some foraging opportunities for dormice (*Muscardinus avellanarius*), albeit limited as there are very few small, scattered pockets of woodland to supplement. The BDS returned no records of dormouse within 2 km of the Site and there are very few records from Lincolnshire. Dormice are therefore presumed to be absent from the survey area.

Water voles and otters

3.3.32 The BDS returned no records of water vole or otter within 2 km of the survey area.

3.3.33 Several of the streams and ditches provide suitable habitat for water voles. The watercourses and waterbodies are likely to be too small to provide refuge and good foraging opportunities for otter, though they may be used by commuting individuals. There are no larger streams or rivers, though the watercourses within the Site connect to Dorrington Dike and the River Witham which may be used by otter.

3.3.34 It is assumed likely that the scheme design will incorporate a suitable buffer to avoid impacts on water courses but further surveys for water voles may be required pre construction in the immediate vicinity of any ditch crossing points.

Badgers

- 3.3.35 The BDS returned no records of badger within 2 km of the survey area.
- 3.3.36 A five-hole badger sett, likely to be a main sett, was identified on the edge of a field close to Bloxham woods but no signs to indicate badgers present at the time of the survey. An annex sett with two holes was found approximately 740 m to the north. An outlier sett with a single hole was found in the hedgerow of a field to the southwest of Ashby de la Launde. An outlier sett with two holes was also found in the north west of the Site.
- 3.3.37 No other signs of active badger presence (i.e. latrines, prints, hairs etc.) were found within the survey area.

Other species

- 3.3.38 The BDS returned 42 records of brown hare within 2 km of the survey area, recorded between 2006 and 2019.
- 3.3.39 Brown hare were seen in the majority of the fields within the survey area, with a peak count of 14 individuals recorded in a field to the south of Cuckoo Lane (TN28). Roe deer (*Capreolus capreolus*) were also observed in many of the fields, particularly close to Scopwick.
- 3.3.40 The BDS returned 14 records of hedgehog within 2km of the Site, recorded between 2006 and 2019.
- 3.3.41 The field survey did not record the presence of hedgehog or any other animals of nature conservation importance; however, habitats within the survey area, including log piles, scrub, woodland, and grassland were considered to be suitable for hedgehog.

4.0 EVALUATION AND RECOMMENDATIONS

Statutory designated sites

- 4.1.1 There are no international statutory designated sites within 10 km of the survey area. The closest internationally statutory designated site - 'The Wash' Ramsar/SPA/SAC - is located approximately 35km from the Site. Although it is hydrologically linked to the Site, via a tributary of the River Witham, it is not expected to be affected by works as it is not designated for migratory fish species. The Wash is designated for wading birds and estuarine habitats. However, being c. 45km from the Site its habitats and bird populations are not expected to be affected by works due to distance and nature of works.
- 4.1.2 Metheringham Heath Quarry SSSI is located approximately 1.9km to the northwest of the survey area boundary. This is a geological no impacts are anticipated on this site as a result of the proposed development.
- 4.1.3 The survey area does not intersect with any SSSI Impact Risk Zones.

Non-statutory designated sites

- 4.1.4 There are 22 non-statutory designated sites identified within 2 km of the survey area boundary. Adjacent to or within the survey boundary are A15, Green Man Road to Cuckoo Lane 2 LWS, A15, Slate House Farm to Dunsby Pit Plantation 1 LWS; Blankney Brick Pit LWS; Bloxholm Wood LWS/Lincolnshire Wildlife Trust reserve; Gorse Lane LWS, Gore Hill Lane Verges LWS, Temple Road Verges, and Welbourn to Brauncewell 2 LWS.
- 4.1.5 Assessment of potential impacts to these sites and appropriate safeguards will be discussed in the Environmental Statement.
- 4.1.6 These sites could be enhanced through landscaping where the development site runs adjacent to them as part of achieving biodiversity net gain within the development site.

Habitats and plants

- 4.1.7 The majority of the survey area comprises arable fields of low to moderate species-richness, within most plant species found within the site boundary being common and/or widespread.
- 4.1.8 The BAP habitats present within the survey area - namely arable field margins, hedgerows and hedgerow trees, lowland meadows, ponds and drains, and lowland mixed deciduous woodland - are also of low to moderate species-richness with the majority of plant species present being common and/or widespread. However, these habitats will be retained as far as is possible.
- 4.1.9 No invasive species were recorded during the survey. However, an additional survey should be carried out prior to commencement of construction to confirm their absence or record the presence of any that have recently appeared.

Protected and other notable species

- 4.1.10 The majority the Site is comprised of arable fields that provide sub-optimal habitat for reptiles. Woodland, scrub, and taller sward grassland and field margins within the survey area offer more suitable habitat for both common amphibians and reptiles. The areas of taller sward, tussocky, more species-rich grassland offer the most suitable areas for foraging, commuting, and basking, whilst wooded and scrub areas offer suitable refuge and hibernation habitat. It is not anticipated that highly suitable habitat such as woodlands or species-rich grassland will be affected by works. If any suitable habitat such as tall vegetation in field margins or tussocky grassland will be impacted then precautionary working methods should be employed to avoid harm. If required, these measures will be outlined in the Environmental statement.
- 4.1.11 Two ponds within the survey area had indeterminate eDNA results (due to degradation of samples). However, it is considered unlikely that great crested newts are present as these ponds were close to the other ponds within the survey area – all of which tested negative. No ponds on Site are expected to be impacted by works.
- 4.1.12 The woodland, hedgerows, and scrub within the survey area provide suitable habitat for birds, whilst the grassland and ploughed fields provide suitable habitat for ground nesting species including skylark and lapwing. To identify key nesting areas, particularly for notable bird species, breeding bird species should be carried out between late March and mid-July. Assessment of potential impacts to bird species and appropriate safeguards will be discussed in the Environmental Statement.
- 4.1.13 There were numerous trees on or adjacent to the survey area which offered moderate to high suitability for roosting bats. If any trees are to be removed or disturbed by proposals, further surveys such as climbing surveys or bat emergence/re-entry surveys will be required. Assessment of potential impacts to bat species and appropriate safeguards will be discussed in the Environmental Statement.
- 4.1.14 Most of the survey area, being arable, offers low suitability for foraging and commuting bats. Hedgerows, woodlands, watercourses and species-rich grasslands are high suitability habitat for foraging and commuting bats. However, it is not expected that these habitats will be significantly affected by the development. To inform bat usage of the Site and to determine any appropriate mitigation in case any suitable habitats may be directly or indirectly affected by the development, bat activity surveys should be carried out by deploying static bat detectors for at least five days per season (i.e., Spring - April/May, Summer - June-August, and Autumn - September/October).
- 4.1.15 Assessment of potential impacts to foraging bat species and appropriate safeguards will be discussed in the Environmental Statement.
- 4.1.16 The ditches and streams within the survey area offer suitable, albeit low quality, habitat for foraging and commuting otter whilst habitats adjacent to the Site may offer suitability for resting otter. It is assumed the scheme design will enable an appropriate buffer to be maintained adjacent to water bodies and assessment of potential impacts to otters and water voles and appropriate safeguards will be discussed in the Environmental Statement. Further survey for water vole may be required in the immediate vicinity of any cable crossing routes. Water vole surveys are undertaken between late April and early

October. Two surveys need to be undertaken at least two months apart, following guidance in the Water Vole Mitigation Handbook (Dean et al. 2016).

- 4.1.17 The survey area offers suitable habitat for badgers, including for sett building, and setts have been identified with the survey area boundary. Although the setts identified did not appear to be recently used, they may be used infrequently or may become active again. It is recommended that a pre-construction survey is undertaken within six months of the commencement of the development to identify any new badger activity on and within 30 m of site.
- 4.1.18 The survey area provides suitable habitat for brown hare and hedgehog, therefore precautionary measures are required during the works to prevent any negative impacts on these species. Brown hares make a small depression in the ground in tall grassland known as a form. In the breeding season, between February and September, checks for young hares (leverets) should be conducted in suitable vegetation prior to works. If any young hares are found, care should be taken to avoid these areas.

Summary of further surveys recommended

- 4.1.19 The following surveys are recommended:
- Breeding bird surveys – at least five visits, to be carried out between late-March and mid-July;
 - Bat activity surveys (for commuting and foraging bats) – deployment of static bat detectors in suitable locations throughout the survey area for a period of at least five days per season (spring, summer and autumn);
 - Water vole and otter surveys of suitable watercourses if the proposed development will result in crossing these watercourses.
 - Targeted hedgerow surveys if any hedgerow removal is required (important hedgerow assessment and to provide species list for replanting if to be re-instated);
 - Non-native invasive plant species (INNS) pre-works check survey recommended in summer before start of works (May-August); and
 - A pre-construction update badger survey is recommended within 6 months of the commencement of the development to identify any new badger activity on and within 30 m of site.

Enhancements

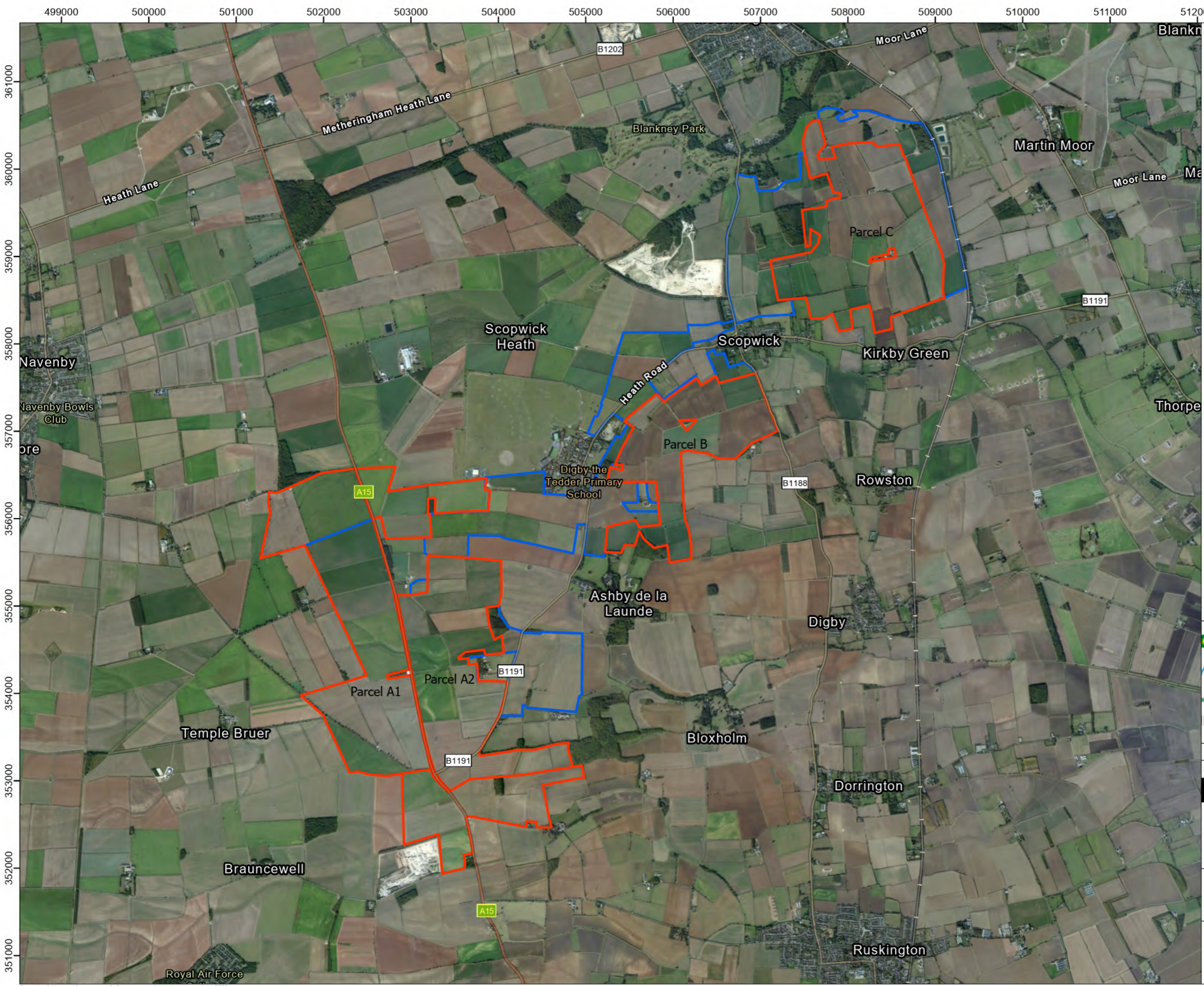
- 4.1.20 A detailed biodiversity design is being produced for the Site. The intention is that the scheme will be biodiversity led with the biodiversity design informing the scheme design. The biodiversity design will include habitat creation and enhancement proposals ensuring the scheme will deliver a significant net gain in biodiversity.

5.0 REFERENCES

- Beebee, T.J.C. & Griffiths, R.A. (2000), *Amphibians and Reptiles – A Natural History of the British Herpetofauna*. HarperCollins, London.
- Biggs J., Ewald N., Valentini A., Gaboriaud C., Griffiths R.A., Foster J., Wilkinson J., Arnett A., Williams P. & Dunn F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust: Oxford.
- Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020), *UK Habitat Classification – Habitat Definitions V1.1* at <http://ukhab.org>
- Chartered Institute of Ecology and Environmental Management (2017), *Guidelines for Preliminary Ecological Appraisal*. Technical Guidance Series, www.cieem.net/gpea.asp.
- Chartered Institute of Ecology and Environmental Management (2019), *Advice Note on the Lifespan of Ecological Reports & Surveys*. CIEEM, Winchester, Hampshire.
- Collins, J. (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust, London.
- English Nature (2001), *Great Crested Newt Mitigation Guidelines*. English Nature.
- Gilbert, G., Gibbons, D. W., & Evans, J. (1998), *Bird Monitoring Methods: A Manual of Techniques for Key UK Species*. RSPB, Sandy, Bedfordshire.
- Institute of Environmental Assessment (1995), *Guidelines for Baseline Ecological Assessment*. Spon, London.
- Jones, J. (2000), *Impact of Lighting on Bats*. Bat Conservation Trust, London.
- MAGIC gov.uk. - interactive mapping tool run by Natural England [Accessed 21 June 2021].
- Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000), Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4): 143-155.
- Poland, J. and Clement, E. (2020), *The vegetative key to the British flora* Second Edition. John Poland, Southampton.
- PTES (2019), *Hedgehog ecology and land management*. People's Trust for Endangered Species & British Hedgehog Preservation Society.
- RSPB (2010), *Wild birds and the law, England and Wales*. RSPB
- Stace, C.A. (2019), *A New Flora of the British Isles* (4th edition). C & M Floristics, Middlewich Green.
- Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.].

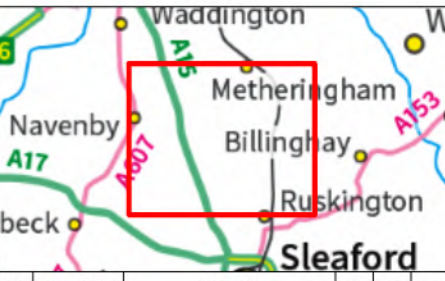
FIGURES

Figure 1 Site Location Plan
Figure 2 Habitat Map
Figure 3 Pond and GLTA Map



Legend:

- Site Boundary
- Additional Survey Area



Rev	Date	Description	Drn	Chk	App
00	06/07/2023	2483765	RS	SP	LP

Springwell Solar Farm

TITLE: Figure 1:
Site Location Plan

0 500 1,000 1,500
Metres
SCALE: 1:40,000 @A3

REV 00

Contains Ordnance Survey data © Crown copyright and database right 2022
World Imagery (Clarity): Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community
Hybrid Reference Layer: Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc., METI/NASA, USGS
OS Open Rasters: Contains OS data © Crown Copyright and database right 2022

506400 506600 506800 507000 507200 507400 507600 507800 508000 508200 508400 508600 508800 509000 509200 509400 509600



- Legend:**
- Site Boundary
 - Survey Area
 - UKHAB Habitats**
 - c1a6 - Arable Margins Sown with Wild Flowers or a Pollen and Nectar Mix
 - c1b6 - Legume Rich Ley
 - c1c - Cereal Crops
 - c1d - Non-Cereal Crops
 - g3 - Neutral Grassland
 - g3c - Other Neutral Grassland
 - g4 - Modified Grassland
 - h3h - Mixed Scrub
 - r1 - Standing Open Water and Canals
 - u1b - Developed Land, Sealed Surface
 - u1e - Built Linear Features
 - w1f7 - Other Lowland Mixed Deciduous Woodland
 - w1g - Other Woodland, Broadleaved
 - w1h5 - Other Woodland, Mixed, Mainly Broadleaved
 - g3c - Other Neutral Grassland
 - h2a - Hedgerow (Priority Habitat)
 - r2b - Other Rivers and Streams
 - u1e - Built Linear Feature
 - w1g6 - Line of Trees
 - r1e - Canal or Ditch
 - Target Note
 - Secondary Code

Secondary Code	Description
16	Tall Herb
36	Plantation
67	Dry Stone Wall
81	Flailed Hedgerow
115	Track



Rev	Date	Description	Drm	Chk	App
00	07/07/2023	2483765	RS	RG	LP

Springwell Solar Farm

TITLE: Figure 2:
UKHAB Habitats Map
Page 1 of 4

0 125 250 375
Metres
SCALE: 1:10,000 @A3

N
W E
S

REV 00



- Legend:**
- Site Boundary
 - Survey Area
 - UKHAB Habitats**
 - c1a6 - Arable Margins Sown with Wild Flowers or a Pollen and Nectar Mix
 - c1b6 - Legume Rich Ley
 - c1c - Cereal Crops
 - c1d - Non-Cereal Crops
 - g3 - Neutral Grassland
 - g3c - Other Neutral Grassland
 - g4 - Modified Grassland
 - h3h - Mixed Scrub
 - r1 - Standing Open Water and Canals
 - u1b - Developed Land, Sealed Surface
 - u1e - Built Linear Features
 - w1f7 - Other Lowland Mixed Deciduous Woodland
 - w1g - Other Woodland, Broadleaved
 - w1h5 - Other Woodland, Mixed, Mainly Broadleaved
 - g3c - Other Neutral Grassland
 - h2a - Hedgerow (Priority Habitat)
 - r2b - Other Rivers and Streams
 - u1e - Built Linear Feature
 - w1g6 - Line of Trees
 - r1e - Canal or Ditch
 - Target Note
 - Secondary Code

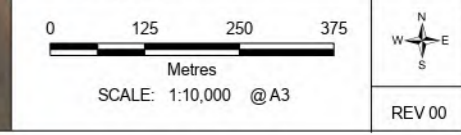
Secondary Code	Description
16	Tall Herb
36	Plantation
67	Dry Stone Wall
81	Flailed Hedgerow
115	Track



Rev	Date	Description	Drm	Chk	App
00	07/07/2023	2483765	RS	RG	LP

Springwell Solar Farm

TITLE: Figure 2:
UKHAB Habitats Map
Page 2 of 4





- Legend:**
- Site Boundary
 - Survey Area
 - UKHAB Habitats**
 - c1a6 - Arable Margins Sown with Wild Flowers or a Pollen and Nectar Mix
 - c1b6 - Legume Rich Ley
 - c1c - Cereal Crops
 - c1d - Non-Cereal Crops
 - g3 - Neutral Grassland
 - g3c - Other Neutral Grassland
 - g4 - Modified Grassland
 - h3h - Mixed Scrub
 - r1 - Standing Open Water and Canals
 - u1b - Developed Land, Sealed Surface
 - u1e - Built Linear Features
 - w1f7 - Other Lowland Mixed Deciduous Woodland
 - w1g - Other Woodland, Broadleaved
 - w1h5 - Other Woodland, Mixed, Mainly Broadleaved
 - g3c - Other Neutral Grassland
 - h2a - Hedgerow (Priority Habitat)
 - r2b - Other Rivers and Streams
 - u1e - Built Linear Feature
 - w1g6 - Line of Trees
 - r1e - Canal or Ditch
 - Target Note
 - Secondary Code

Secondary Code	Description
16	Tall Herb
36	Plantation
67	Dry Stone Wall
81	Flailed Hedgerow
115	Track



Rev	Date	Description	Drm	Chk	App
00	07/07/2023	2483765	RS	RG	LP

Springwell Solar Farm

TITLE: Figure 2:
UKHAB Habitats Map
Page 3 of 4

SCALE: 1:10,000 @A3

REV 00



- Legend:**
- Site Boundary
 - Survey Area
 - UKHAB Habitats**
 - c1a6 - Arable Margins Sown with Wild Flowers or a Pollen and Nectar Mix
 - c1b6 - Legume Rich Ley
 - c1c - Cereal Crops
 - c1d - Non-Cereal Crops
 - g3 - Neutral Grassland
 - g3c - Other Neutral Grassland
 - g4 - Modified Grassland
 - h3h - Mixed Scrub
 - r1 - Standing Open Water and Canals
 - u1b - Developed Land, Sealed Surface
 - u1e - Built Linear Features
 - w1f7 - Other Lowland Mixed Deciduous Woodland
 - w1g - Other Woodland, Broadleaved
 - w1h5 - Other Woodland, Mixed, Mainly Broadleaved
 - g3c - Other Neutral Grassland
 - h2a - Hedgerow (Priority Habitat)
 - r2b - Other Rivers and Streams
 - u1e - Built Linear Feature
 - w1g6 - Line of Trees
 - r1e - Canal or Ditch
 - Target Note
 - Secondary Code

Secondary Code	Description
16	Tall Herb
36	Plantation
67	Dry Stone Wall
81	Flailed Hedgerow
115	Track




00	07/07/2023	2483765	RS	RG	LP
Rev	Date	Description	Drn	Chk	App

Springwell Solar Farm




RSK
biocensus
EXPERTS IN ECOLOGY

TITLE: Figure 2:
UKHAB Habitats Map
Page 4 of 4



Metres
SCALE: 1:10,000 @A3



N
W
E
S

REV 00

505500 506000 506500 507000 507500 508000 508500 509000 509500 510000

361000
360500
360000
359500
359000
358500
358000
357500



Legend:

- Site Boundary
- Additional Survey Area
- Ponds

GLTA Bat Roost Suitability

- High
- Moderate




Rev	Date	Description	Drn	Chk	App
00	06/07/2023	2483765	TG	SP	LP

Springwell Solar Farm




RSK
biocensus
EXPERTS IN ECOLOGY

TITLE: Figure 3:
GLTA and Ponds Map



0 190 380 570
Metres
SCALE: 1:15,000 @A3



N
W E
S

REV 00



- Legend:**
- Site Boundary
 - Additional Survey Area
 - Ponds
- GLTA Bat Roost Suitability**
- High
 - Moderate



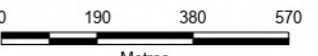
Rev	Date	Description	Drn	Chk	App
00	06/07/2023	2483765	TG	SP	LP

Springwell Solar Farm




RSK
EXPERTS IN ECOLOGY

TITLE: Figure 3:
GLTA and Ponds Map



SCALE: 1:15,000 @A3



REV 00



Legend:

- Site Boundary
- Additional Survey Area
- Ponds

GLTA Bat Roost Suitability

- High
- Moderate




00	06/07/2023	2483765	TG	SP	LP
Rev	Date	Description	Drn	Chk	App

Springwell Solar Farm




RSK
EXPERTS IN ECOLOGY

TITLE: Figure 3:
GLTA and Ponds Map



Metres
SCALE: 1:15,000 @ A3



REV 00

APPENDIX A – NATURE CONSERVATION LEGISLATION AND POLICY

International Legislation

The following international conventions and directives apply to biodiversity protection in the UK. Post-‘Brexit’, even though European Union (EU) directives no longer directly apply to the UK, the provisions therein are enshrined in both domestic legislation and international agreements. Legislation has been enacted to ensure the regulations derived from these remain in force².

The Convention on Biological Diversity 1992 *et seq.*

This multilateral treaty (<https://www.cbd.int/doc/legal/cbd-en.pdf>), signed by 150 government leaders at the 1992 Rio Earth Summit, has three main goals, of which one is the conservation of biological diversity. Article 6 requires countries to develop national biodiversity strategies, plans or programmes. In response, the UK developed the UK Biodiversity Action Plan (BAP) 1994 (<https://jncc.gov.uk/our-work/uk-bap/>) as well as county-specific BAPs. Subsequent to this, parties of the convention agreed the supplementary Nagoya Protocol 2010 (available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>), adopting the Strategic Plan for Biodiversity 2011-2020. The purpose of this Strategic Plan was to provide a framework for establishing national and regional biodiversity targets (<https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>).

Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009

<https://www.legislation.gov.uk/eudr/2009/147>

The Birds Directive 2009 relates to the conservation of all species of naturally occurring birds in their wild state in the territory of the EU Member States (MSs) to which the treaty applies. Under the Birds Directive, the most suitable areas of conservation of the Annex I species are to be designated as Special Protection Areas (SPAs), as part of the European Natura 2000 network. Post Brexit, SPAs are no longer considered part of Natura 2000 and are instead components of the UK’s ‘national site network’, but their highly protected status is unchanged. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to fulfil the commitment made by government to maintain environmental protections and continue to meet the UK’s international legal obligations.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) 1992

<https://www.legislation.gov.uk/eudr/1992/43>

The Habitats Directive 1992 requires EU MSs to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest, which are listed

² Further information relating to England can be found here:
<https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>.

under Annex I, II, IV and/or V. Species listed under Annex IV are known as 'European Protected Species' (EPS), and have retained their protected status in UK domestic legislation post-Brexit.

Under the Habitats Directive, EU Member States are required to contribute to the Natura 2000 network through the designation of Special Areas of Conservation (SACs) for natural habitat types listed in Annex I and habitats of species listed in Annex II. Post Brexit, SACs are no longer considered part of the European Natura 2000 network and are instead components of the UK's 'national site network', but their highly protected status is unchanged.

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971: the Ramsar Convention

Accessible via <https://jncc.gov.uk/our-work/ramsar-convention/>

The Ramsar Convention is an intergovernmental treaty focused on the conservation and sustainable use of wetland, primarily as habitats for water birds. Under the convention, each ratified country is required to identify and designate sites (Ramsar sites) that meet the criteria for identifying a wetland of international importance, i.e. containing representative, rare or unique wetland types. In addition, the convention promotes international co-operation to promote the wise use of all wetlands and their resources.

Habitats Regulations Assessment (HRA): a note

There is a requirement under the EU nature directives, and enshrined in country-specific domestic legislation³ (see below), to undertake a screening exercise to determine whether any sites that form part of the 'national site network' (formerly Natura 2000) are likely to be significantly affected by any proposal (project or plan). The assessment must consider the proposals alone and also in combination with other plans and projects, if they result from activities that are not directly connected with, or necessary to, the management of the designated sites. If significant effects are likely, an Appropriate Assessment (AA) will need to be carried out. The screening, any AA, and any subsequent assessment, are collectively known as a Habitats Regulations Assessment (HRA). The HRA needs to take into account each of the 'Qualifying Features' (habitats or species) that justified the site being designated. Ramsar sites are treated in the same way as SACs and SPAs in HRAs, as are sites which have not been fully adopted i.e. candidate SACs (cSACs) and potential SPAs (pSPAs).

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979

Accessible via: <https://jncc.gov.uk/our-work/the-convention-on-the-conservation-of-migratory-species-of-wild-animals/#convention-summary>

The Bonn Convention was adopted in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative

³ In England and Wales: the Conservation of Habitats and Species Regulations 2017 (as amended).

research activities. The UK Government ratified the Bonn Convention in 1985. The current legally-binding Agreements under the Convention include EUROBATS⁴.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979

<https://www.coe.int/en/web/bern-convention>

The principal aims of the Bern Convention 1979 are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Bern Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species. The UK Government ratified the Bern Convention in 1982.

National Legislation

The following pieces of domestic legislation apply to biodiversity protection in the UK.

The Wildlife and Countryside Act (WCA) 1981

<https://www.legislation.gov.uk/ukpga/1981/69>

The Wildlife and Countryside Act 1981 (as amended) is the primary piece of legislation relating to nature conservation in the UK, though it has been adapted in different ways in the devolved administrations. It was initially enacted to implement the Bern Convention, Bonn Convention and the Birds Directive (described above).

The act is supplemented by provisions in the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, and extended in Scotland by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011). Its equivalent in Northern Ireland is the Wildlife (Northern Ireland) Order 1985 (as amended and similarly extended). In addition to the Habitat Regulations (described below), the WCA provides protection for species listed in Schedules 1 (birds), 5 (other animals) and 8 (plants) of the Act. It provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) in England and Wales⁵. It also sets out, in other schedules, important and invasive species which are legally protected or require management.

All species of bird are protected under the WCA. The legislation makes it an offence to intentionally:

- a) kill, injure or take any wild bird;
- b) take, damage, or destroy the nest of any wild bird while that nest is in use or being built; or
- c) take or destroy an egg of any wild bird.

Those species of birds listed on Schedule 1 of the WCA are afforded additional protection, which deems it an offence to intentionally or recklessly:

⁴ More information available at <https://jncc.gov.uk/our-work/agreement-on-the-conservation-of-populations-of-european-bats-eurobats>

⁵ Duty replaced by the Nature Conservation (Scotland) Act 2004 (as amended) and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended) in those countries.

- a) disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- b) disturb dependent young of such a bird.

Under Section 9 of the WCA, for animals listed on Schedule 5, it is an offence in England and Wales to intentionally or recklessly:

- kill, injure or take any wild animal listed on Schedule 5*;
- possess or control any live or dead those wild animals or anything derived from it*;
- damage or destroy any structure or place which wild animals listed on Schedule 5 uses for shelter or protection*;
- disturb any such animal while it is occupying a structure or place of shelter or protection;
- obstruct access to any structure or place used by any such animal for shelter or protection; and
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead wild animal listed on Schedule 5 or any part of, or anything derived from such an animal.

As noted above, there are minor differences between the offences in England and Wales outlined above, and those in Scotland / Northern Ireland. The three clauses marked with asterisks do not apply to EPS in England and Wales, as these offences are included in the ‘Habitats Regulations’ (see below). In addition, the Wildlife and Countryside Act 1981 is no longer relevant to EPS in Scotland or Northern Ireland, which instead are afforded full protection by the ‘Habitats Regulations’ (see below).

In addition to EPS, species commonly found on development sites include water voles (*Arvicola amphibius*) and widespread species of reptiles: common lizard (*Zootoca vivipara*); slow-worm (*Anguis fragilis*); grass snake (*Natrix helvetica*); and adder (*Vipera berus*). These four reptile species receive partial protection, which prevents the intentional or deliberate killing and injuring of reptiles or offering them for sale.

Section 14(2)⁶ states that it is an offence to plant or otherwise cause to grow any plant in the wild at a place outside its native range.

Section 16(i) of the Act makes provision for derogation licences to be issued “*for the purposes of preserving public health or public ... safety*”. For confirmation of this, it would be appropriate to consult the relevant statutory nature conservation body (SNCB)⁷.

Until recently, there has been no provision within the Act for derogation licences to be issued for the purposes of development, although Section 10 provides a defence in cases that may be considered to be: “*the incidental result of a lawful operation and could not reasonably have been avoided*” if certain conditions are met.

As a result of the Environment Act 2021, the introduction of the ‘overriding public interest’ (‘OPI’) test was added to the licensing purposes in the WCA, from October 2022, though this only applies in England.

⁶ In Scotland, as amended by Section 14 of the Wildlife and Natural Environment (Scotland) Act 2011.

⁷ SNCBs are - in England: Natural England; in Wales: Natural Resources Wales; in Scotland: NatureScot; in Northern Ireland: Department of Agriculture, Environment and Rural Affairs (DAERA).

The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017

<https://www.legislation.gov.uk/ukxi/2017/1012> England and Wales

The Habitats Regulations 2017 consolidated the various amendments made to the 1994 Habitat Regulations, which were developed to implement the Birds Directive and Habitats Directive (see above) at a national level, though this consolidation only applies in England and Wales. As noted above, in Scotland and in Northern Ireland, the original versions of the Regulations in each region have been retained and amended to include protections for EPS that were initially provided under the WCA (or its equivalent).

The Regulations (as amended) provide for the designation and protection of the national site network (formerly 'Natura 2000 sites'), the adaptation of planning and other controls for those sites, and the protection of EPS (listed on Schedules 2 and 5).

The 2017 Regulations (England and Wales, Reg. 43) deems it an offence to:

- c) deliberately capture, injure or kill a wild animal of a EPS,
- d) deliberately disturb wild animals of any such species,
- e) deliberately take or destroy the eggs of such an animal, or
- f) damage or destroy a breeding site or resting place of such an animal.

For the purposes of paragraph (b), disturbance of animals includes in particular any disturbance which is likely to:

- g) impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- h) to affect significantly the local distribution or abundance of the species to which they belong.

There are also restrictions on transport, possession and sale.

It is possible to obtain a derogation licence from the relevant SNCB to permit activities which would otherwise contravene the regulations above, including for development purposes, when certain conditions are met. Failure to satisfy the Regulations and obtain a licence where required could result in prosecution and lead to fines and possible imprisonment.

To meet the requirements in Regulation 63(1), an HRA is required (see note in previous section).

Currently (2021), all EPS are also listed on Schedule 5 of the WCA (outlined above), as it applies in England and Wales, though only some clauses of the WCA apply (Section 9 4(b), (c) and 5). EPS often encountered on development sites include GCN (*Triturus cristatus*), all species of bats, dormice (*Muscardinus avellanarius*) and otters (*Lutra lutra*).

Countryside and Rights of Way Act 2000

<https://www.legislation.gov.uk/ukpga/2000/37>

The Countryside and Rights of Way (CRoW) Act 2000 provides for public access on foot to certain land types, amends the law for public rights of way, increases protection for SSSIs, and strengthens wildlife enforcement legislation. It applies only in England and Wales.

The Natural Environment and Rural Communities (NERC) Act 2006

<https://www.legislation.gov.uk/ukpga/2006/16>

The Natural Environment and Rural Communities (NERC) Act 2006, Section 40 requires that any public body or statutory undertaker in England must have regard to the purpose of conservation of biological diversity in a manner that is consistent with the exercise of their normal functions. This may include enhancing, restoring or protecting a population or a habitat. The intention is to help ensure that biodiversity becomes an integral consideration in the development of policies, and that decisions of public bodies work with the grain of nature and not against it.

As part of this duty, statutory undertakers must have regard to the list of habitats and species which are of principal importance for the purpose of maintaining and enhancing biodiversity. For England, the duty to compile such a list is captured under Section 41 of the NERC Act. The lists for England are accessible online via the National Archive⁸.

The Hedgerows Regulations 1997

<https://www.legislation.gov.uk/uksi/1997/1160/made>

The Hedgerows Regulations 1997 provide protection for 'important' hedgerows for which replanting is not a substitute. The 'importance' of a hedgerow depends upon several archaeological, wildlife and landscape criteria (which are outlined in the Regulations). The regulations deem it an offence to remove an 'important hedgerow' without prior notification to the relevant local planning authority.

Protection of Badgers Act 1992

<https://www.legislation.gov.uk/ukpga/1992/51>

Badgers and their setts are protected under the Protection of Badgers Act 1992 (England, Wales and Scotland). The key part of this legislation in relation to the proposed development are in Section 3, which deems it an offence to:

- a) damage a badger sett or any part of it;
- b) destroy a badger sett;
- c) obstruct access to, or any entrance of, a badger sett;
- d) disturb a badger when it is occupying a badger sett,
- e) intend to do any of those things or be reckless as to whether those actions would have any of the consequences listed above.

Derogation licences may be obtained from the relevant SNCB under Section 10 of the Act for the purpose of development, to permit activities which would otherwise be unlawful.

Note: there are additional provisions relating to badgers under the WCA Section 11 (Prohibition of certain methods of killing or taking wild animals).

The Wild Mammals (Protection) Act 1996

<https://www.legislation.gov.uk/ukpga/1996/3>

All wild mammals are protected by The Wild Mammals (Protection) Act 1996 (as amended). This makes it an offence to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal.

⁸

<https://webarchive.nationalarchives.gov.uk/ukgwa/20140712055944/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>

Invasive Alien Species (Enforcement and Permitting) Order 2019

(<https://www.legislation.gov.uk/ukxi/2019/527/contents/made>)

The Invasive Alien Species (Enforcement and Permitting) Order applies principally in England and Wales and the UK's offshore marine area, but also controls imports and exports from the UK (including Scotland and Northern Ireland). It lists species of concern which cannot be imported, kept, bred/grown, transported, sold, used, allowed to reproduce, or released into the environment. This Order replaces some elements relating to invasive species in the Wildlife and Countryside Act 1981 (as amended).

National, regional and local policy and guidance of relevance

Planning policy relating to ecology and nature conservation is set out below.

National Planning Policy Framework 2021

Access via: <https://www.gov.uk/government/publications/national-planning-policy-framework-2>

The National Planning Policy Framework (NPPF) sets out the Government's planning policy in England at the national level. It does not contain specific policies for nationally significant infrastructure projects, which are determined in accordance with the decision-making framework in the Act and relevant National Policy Statements for major infrastructure, as well as any other matters that are relevant (which may include the NPPF). Section 15 (paragraphs 174-188) of the NPPF specifies the requirements for conserving and enhancing the natural environment through the planning and development process to minimise impacts on habitats and biodiversity.

Planning Practice Guidance

Accessed via: <https://www.gov.uk/government/collections/planning-practice-guidance>

The Planning Practice Guidance is a web-resource to support the NPPF, including guidance for Environmental Impact Assessments (<https://www.gov.uk/guidance/environmental-impact-assessment>) and the Natural Environment (<https://www.gov.uk/guidance/natural-environment>). The guidance for the Natural Environment explains key issues in implementing the NPPF to protect and enhance the natural environment, including local requirements. The guidance outlines what evidence needs to be taken into account in preparing planning applications to identify and map local ecological networks. It also outlines how biodiversity can be taken into account in preparing a planning application.

Government's 25-Year Environment Plan 2018

Accessed via: <https://www.gov.uk/government/publications/25-year-environment-plan>

The Government's 25-Year Environment Plan 2018 sets out how the UK Government intends to improve the natural health of the UK through improving land, air and water quality, as well as setting out how the effects of climate change will be tackled. The plan promotes the creation or restoration of wildlife-rich habitat outside the protected site network and seeks to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human induced extinction or loss of known threatened species in England. The plan sets out a number of goals and corresponding policies that look at managing land sustainably, improving and enhancing landscapes and biodiversity for both marine and terrestrial

environments, improving resource efficiency and reducing waste and pollution, whilst also examining the UK's contribution to improving the global environment.

Central Lincolnshire Local Plan 2017

Accessed via: <https://www.n-kesteven.gov.uk/central-lincolnshire/local-plan/>

The Central Lincolnshire Local Plan was adopted by the Central Lincolnshire Joint Strategic Planning Committee (CLJSPC) on 24 April 2017, replacing the Local Plans of the City of Lincoln, West Lindsey and North Kesteven District Councils.

Relevant policies are:

Policy LP21: Biodiversity and Geodiversity

All development should:

- protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site;
- minimise impacts on biodiversity and geodiversity;
- and seek to deliver a net gain in biodiversity and geodiversity.

Development proposals that will have an adverse impact on a European Site or cause significant harm to a Site of Special Scientific Interest, located within or outside Central Lincolnshire, will not be permitted, in accordance with the NPPF.

Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless the need for, and benefits of, the development in that location clearly outweigh the loss or harm.

Proposals for major development should adopt an ecosystem services approach, and for large scale major development schemes (such as Sustainable Urban Extensions) also a landscape scale approach, to biodiversity and geodiversity protection and enhancement identified in the Central Lincolnshire Biodiversity Opportunity Mapping Study.

Development proposals should create new habitats, and links between habitats, in line with Biodiversity Opportunity Mapping evidence to maintain a network of wildlife sites and corridors to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change. Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Lincolnshire Biodiversity Action Plan and Geodiversity Action Plan.

Where development is within a Nature Improvement Area (NIA), it should contribute to the aims and aspirations of the NIA.

Development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings.

Mitigation

Any development which could have an adverse effect on sites with designated features and / or protected species, either individually or cumulatively, will require an assessment as required by the relevant legislation or national planning guidance.

Where any potential adverse effects to the biodiversity or geodiversity value of designated sites are identified, the proposal will not normally be permitted. Development proposals will only be supported if the benefits of the development clearly outweigh the harm to the habitat and/or species.

In exceptional circumstances, where adverse impacts are demonstrated to be unavoidable, developers will be required to ensure that impacts are appropriately mitigated, with compensation measures towards loss of habitat used only as a last resort where there is no alternative. Where any mitigation and compensation measures are required, they should be in place before development activities start that may disturb protected or important habitats and species

APPENDIX B – NOTEWORTHY SPECIES RECORDS


Table 6 displays noteworthy species records that are located within 2 km of the Site boundary. These species records were obtained from Greater Lincolnshire Nature Partnership. The scientific and common names for species are given as well as their level of designation. If a species is not included in the table below it does not necessarily mean the species is absent from the search area, but that data-holding organizations do not have records of it in these locations.


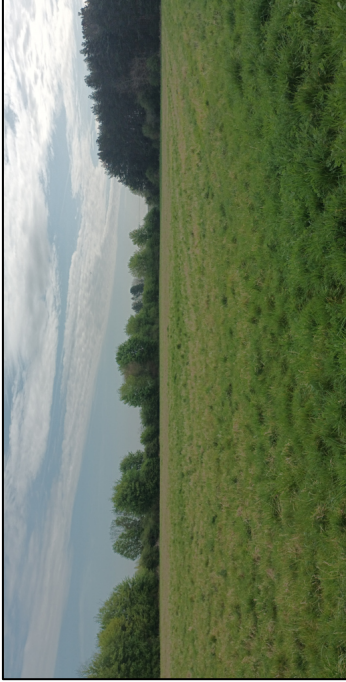

Table 6: Noteworthy species records within 2 km of the Site boundary



Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Plants					
<i>Clinopodium acinos</i>	Basil thyme	S41	2015	0	1
Invertebrates					
<i>Coenonympha pamphilus</i>	Small heath	S41	2021	1	50
<i>Cupido minimus</i>	Small blue	WCA5, S41	2019	0	1
<i>Hipparchia semele</i>	Grayling	S41, GB RDB(VU)	2018	1	0
<i>Polyommatus bellargus</i>	Adonis blue	WCA5	2019	0	1
<i>Tyria jacobaeae</i>	Cinnabar	S41	2021	1	4
Reptiles					
<i>Zootoca vivipara</i>	Common lizard	WCA5, S41	2021	0	5
Fish					
<i>Anguilla anguilla</i>	European eel	S41, OSPAR	2014	0	1
Birds					
<i>Acanthis cabaret</i>	Lesser Redpoll	S41, Red	2005	0	2
<i>Alauda arvensis</i>	Skylark	S41, Red	2020	0	20
<i>Alcedo atthis</i>	Kingfisher	WCA1.1, Amber	2002	0	3
<i>Anser anser</i>	Greylag Goose	WCA1.2, Amber	2005	0	2
<i>Apus apus</i>	Swift	Amber, GB RDB(EN)	2019	0	13
<i>Circus aeruginosus</i>	Marsh harrier	WCA1.1, Amber	2016	0	58
<i>Circus cyaneus</i>	Hen harrier	WCA1.1, S41, Red, GB RDB(VU)	2010	0	4
<i>Circus pygargus</i>	Montagu's Harrier	WCA1.1, Amber, GB RDB(CR)	2007	0	50
<i>Coturnix coturnix</i>	Quail	WCA1.1, Amber	2012	0	1
<i>Cuculus canorus</i>	Cuckoo	S41, Red, GB RDB(VU)	2007	0	2
<i>Emberiza calandra</i>	Corn bunting	S41, Red	2008	0	20
<i>Emberiza citrinella</i>	Yellowhammer	S41, Red	2015	0	18
<i>Emberiza schoeniclus</i>	Reed bunting	S41, Amber	2007	0	13
<i>Falco columbarius</i>	Merlin	WCA1.1, Red, GB RDB(EN)	2014	0	1
<i>Falco peregrinus</i>	Peregrine	WCA1.1	2011	0	7
<i>Falco subbuteo</i>	Hobby	WCA1.1	2014	0	11
<i>Gallinago gallinago</i>	Snipe	Amber	2000	0	2
<i>Linaria cannabina</i>	Linnet	S41, Red	2017	0	19
<i>Locustella naevia</i>	Grasshopper warbler	S41, Red	2011	0	3


Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
<i>Lullula arborea</i>	Woodlark	WCA1.1, S41, GB RDB(VU)	2014	0	1
<i>Milvus migrans</i>	Black kite		2008	0	1
<i>Milvus milvus</i>	Red kite	WCA1.1	2020	0	8
<i>Motacilla flava</i>	Yellow wagtail	S41, Red	2009	0	28
<i>Muscicapa striata</i>	Spotted flycatcher	S41, Red	2004	0	4
<i>Numenius arquata</i>	Curlew	S41, Red, GB RDB(EN)	2019	0	2
<i>Passer domesticus</i>	House sparrow	S41, Red	2017	0	14
<i>Passer montanus</i>	Tree sparrow	S41, Red, GB RDB(VU)	2011	0	28
<i>Perdix perdix</i>	Grey partridge	S41, Red, GB RDB(VU)	2016	0	18
<i>Regulus ignicapilla</i>	Firecrest	WCA1.1	2005	0	1
<i>Streptopelia turtur</i>	Turtle dove	S41, Red, GB RDB(CR)	2007	0	14
<i>Sturnus vulgaris</i>	Starling	S41, Red, GB RDB(VU)	2009	0	20
<i>Tringa tetanus</i>	Redshank	Amber, GB RDB(VU)	2003	0	2
<i>Turdus iliacus</i>	Redwing	WCA1.1, Red, GB RDB(CR)	2004	0	3
<i>Turdus philomelos</i>	Song thrush	S41, Red	2017	0	4
<i>Turdus pilaris</i>	Fieldfare	WCA1.1, Red, GB RDB(CR)	2011	0	24
<i>Tyto alba</i>	Barn owl	WCA1.1	2015	0	61
<i>Vanellus vanellus</i>	Lapwing	S41, Red, GB RDB(EN)	2020	1	47
Mammal					
<i>Arvicola amphibius</i>	Water vole	WCA5, S41, GB RDB(EN)	2014	0	1
<i>Erinaceus europaeus</i>	Hedgehog	S41, GB RDB(VU)	2020	3	16
<i>Lepus europaeus</i>	Brown hare	S41	2019	0	42
Bats					
<i>Barbastella barbastellus</i>	Barbastelle	EPS(Sch2), WCA5, S41, GB RDB(VU)	2014	0	2
<i>Chiroptera</i>	Unidentified bat	EPS(Sch2)	2018	0	14
<i>Pipistrellus</i>	Unidentified pipistrelle	EPS(Sch2), WCA5	2018	0	4
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS(Sch2), WCA5	2014	0	2
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	EPS(Sch2), WCA5, S41	2014	0	2
<i>Plecotus auratus</i>	Brown long-eared bat	EPS(Sch2), WCA5, S41	2016	0	6


APPENDIX C – TARGET NOTES


Target Note	Description	Photograph
<p>Target Note 1</p>	<p>Longer, tussocky strips of neutral grassland line the boundaries of the fields west of the A15. Several of the boundaries are also lined by a low, dilapidated stone wall.</p> <p>The species assemblage varies slightly in terms of herb species present, but broadly comprised grass species including cock's-foot (<i>Dactylis glomerata</i>), crested dog's-tail (<i>Cynosurus cristatus</i>), false oat grass (<i>Arrhenatherum elatius</i>), red fescue (<i>Festuca rubra</i>), tall fescue (<i>Schedonorus arundinaceus</i>), barren brome (<i>Anisantha sterilis</i>), perennial rye grass (<i>Anisantha sterilis</i>), common bent (<i>Anisantha sterilis</i>), rough meadow-grass (<i>Anisantha sterilis</i>), and Yorkshire-fog (<i>Holcus lanatus</i>).</p> <p>Herb species included colt's-foot (<i>Tussilago farfara</i>), common bird's-foot-trefoil (<i>Lotus corniculatus</i>), creeping thistle (<i>Cirsium arvense</i>), marsh thistle (<i>Cirsium palustre</i>), meadow buttercup (<i>Ranunculus acris</i>), mouse-ear hawkweed (<i>Pilosella officinarum</i>), shepherd's purse (<i>Capsella bursa-pastoris</i>), cuckoo flower (<i>Cardamine pratensis</i>), dandelion (<i>Taraxacum officinale</i> agg.), pineapple weed (<i>Matricaria discoidea</i>), sun spurge (<i>Euphorbia helioscopia</i>), ground ivy (<i>Glechoma hederacea</i>), hogweed (<i>Heracleum sphondylium</i>), cow parsley (<i>Anthriscus sylvestris</i>), ribwort plantain (<i>Plantago lanceolata</i>), yarrow (<i>Achillea millefolium</i>), nettle (<i>Urtica dioica</i>), scarlet pimpernel (<i>Anagallis arvensis</i>), cleavers (<i>Galium aparine</i>), spear thistle (<i>Cirsium vulgare</i>), lesser celandine (<i>Ficaria verna</i>), broad leaved dock (<i>Rumex obtusifolius</i>), teasel (<i>Dipsacus fullonum</i>), white dead nettle (<i>Lamium album</i>), groundsel (<i>Senecio vulgaris</i>), white clover (<i>Trifolium repens</i>), red clover (<i>Trifolium pratense</i>), and daisy (<i>Bellis perennis</i>).</p>	


Target Note	Description	Photograph
Target Note 2	Area of neutral grassland south of Cuckoo Lane. Blackthorn scrub is abundant. Grass and herb species include those listed for Target Note 1.	
Target Note 3	Large field in the north of the survey area. The sward is longer and more tussocky than surrounding fields. Grass and herb species include those listed for Target Note 1.	
Target Note 4	A modified grassland field in the southwest of the survey area. Dominated by tall fescue, perennial rye grass, and Yorkshire fog, with occasional meadow foxtail, and sweet vernal grass (<i>Anthoxanthum odoratum</i>), as well as occasional herbs including creeping thistle, wild mustard (<i>Sinapis arvensis</i>), common mouse-ear (<i>Cerastium fontanum</i>), chickweed (<i>Stellaria media</i>), and broad-leaved dock (<i>Rumex obtusifolius</i>).	

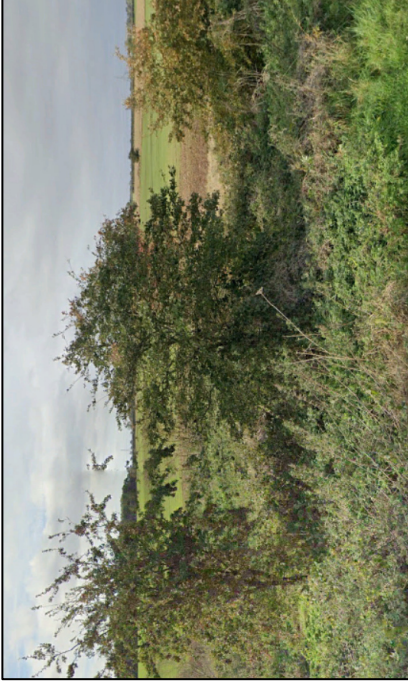
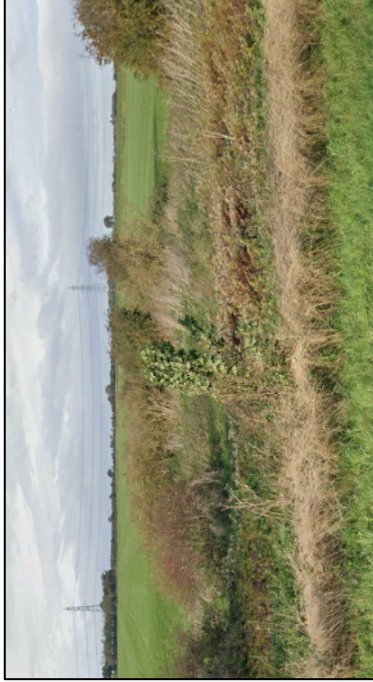
Target Note	Description	Photograph
Target Note 5	<p>An area of planted young trees on the site of a former brickyard and woodland. Species including sycamore (<i>Acer pseudoplatanus</i>), oak (<i>Quercus robur</i>), conifer sp., blackthorn (<i>Prunus spinosa</i>), hazel (<i>Corylus avellana</i>), and silver birch have been planted within the last three years. The ground cover is dominated by scrub species and self-set young trees including ash, hawthorn (<i>Crataegus monogyna</i>), blackthorn, cowslip (<i>Primula veris</i>), spear thistle, dogrose (<i>Rosa canina</i>), comfrey (<i>Symphytum officinale</i> agg.), nettle, rosebay willowherb (<i>Chamaenerion angustifolium</i>), great willowherb (<i>Epilobium hirsutum</i>), bristly oxtongue (<i>Helminthotheca echioides</i>), teasel, great mullein (<i>Verbascum thapsus</i>), compact rush (<i>Juncus conglomeratus</i>), and hard rush (<i>Juncus inflexus</i>).</p>	
Target Note 6	<p>Bloxham Wood, a Lincolnshire Wildlife Trust reserve and Local Wildlife Site. The woodland is predominately mature ash (<i>Fraxinus excelsior</i>), horse chestnut (<i>Aesculus hippocastanum</i>), beech (<i>Fagus sylvatica</i>), and sycamore with herb species including bluebell (<i>Hyacinthoides non-scripta</i>), nettle, cleavers, early purple orchid (<i>Orchis mascula</i>), and bugle (<i>Ajuga reptans</i>).</p>	
Target Note 7	<p>A line of planted field maple trees along a track in the northeast of the survey area.</p>	<p>No photograph available</p>


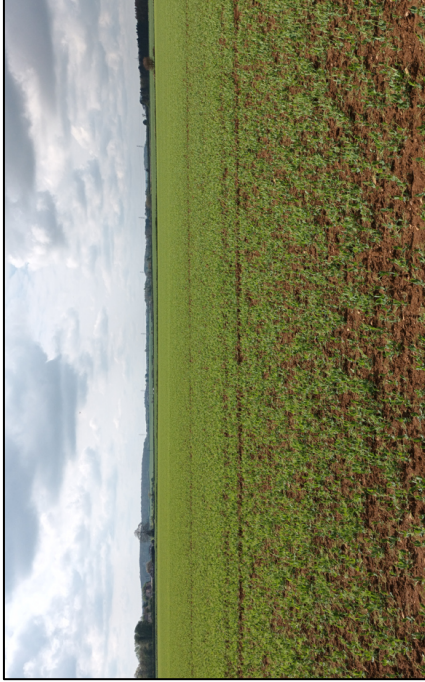
Target Note	Description	Photograph
<p>Target Note 8</p>	<p>A line of white poplar trees in the north of the survey area.</p>	

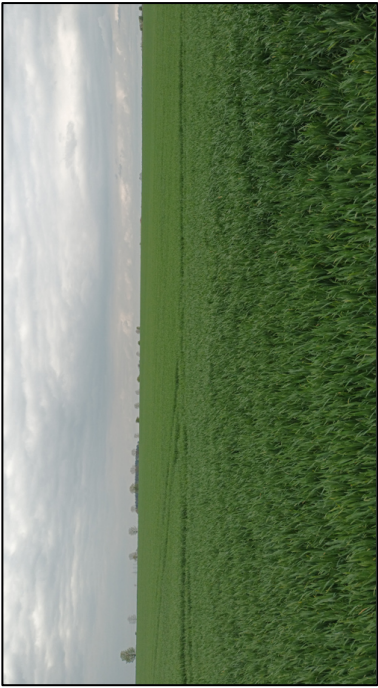

Target Note	Description	Photograph
<p>Target Note 9</p>	<p>A small area of semi-natural woodland which does not appear to have originated as a plantation. Dominated by mature oak or ash, with sycamore, elder, beech, crack willow (<i>Salix fragilis</i>), goat willow (<i>Salix caprea</i>), and dogwood (<i>Cornus sanguinea</i>) also present within the canopy. The understorey was dense nettle and bramble (<i>Rubus fruticosus</i>), with young holly (<i>Ilex aquifolium</i>), hawthorn, and blackthorn.</p>	



Target Note	Description	Photograph
<p>Target Note 10</p>	<p>A mixed plantation woodland that is dominated by broadleaved species including oak, sycamore, beech, and ash but also contains planted Scots pine. The understorey was dense nettle with some bramble, young holly, hawthorn, and blackthorn.</p>	
<p>Target Note 11</p>	<p>An area of broadleaved woodland has grown along either side of Cuckoo Lane. It was dominated by field elm, with occasional hawthorn, elder, and blackthorn.</p>	



Target Note	Description	Photograph
Target Note 12	A plantation woodland dominated by Scots pine, but also contains a small number of broadleaved species including oak, sycamore, ash, willow species, elder, hawthorn, and blackthorn are also present within the woodlands and around the perimeter. The understorey is typically dense nettle and bramble.	
Target Note 13	An area of blackthorn scrub forming the boundary of two fields to the south of Cuckoo Lane.	No photograph available
Target Note 14	Isolated stands of hawthorn that do not appear to have once been part of a hedgerow are located within the boundaries of several of the fields.	No photograph available


Target Note	Description	Photograph
Target Note 15	An area of mixed scrub in a small disused quarry	
Target Note 16	An area of mixed scrub in a small disused quarry	



Target Note	Description	Photograph
<p>Target Note 17</p>	<p>The west margin of two of the fields to the south of the Site had been sown with a pollen and nectar mix. Species present included wild radish (<i>Raphanus raphanistrum</i>), sun spurge, common vetch (<i>Vicia sativa</i>), wild mustard (<i>Sinapis arvensis</i>), purple tansy (<i>Phacelia tanacetifolia</i>), small bugloss (<i>Anchusa arvensis</i>), white campion (<i>Silene latifolia</i>), cock's foot, timothy (<i>Phleum pratense</i>), red fescue, crested dog's tail, common stork's bill (<i>Erodium cicutarium</i>), common ramping fumitory (<i>Fumaria muralis</i> ssp. <i>Neglecta</i>), and smooth tare (<i>Vicia tetrasperma</i>).</p>	
<p>Target Note 18</p>	<p>A field sown with legumes.</p>	

Target Note	Description	Photograph
<p>Target Note 19</p>	<p>A field sown with cereal crops.</p>	
<p>Target Note 20</p>	<p>A field planted with maize which had been left as stubble after harvesting. Also present was broad-leaved dock, Yorkshire fog, hogweed, ribwort plantain, scarlet pimpernel, dwarf nettle (<i>Urtica urens</i>), pineapple weed, and burdock (<i>Arctium lappa</i>).</p>	

Target Note	Description	Photograph
<p>Target Note 21</p>	<p>An area of hardstanding.</p>	
<p>Target Note 22</p>	<p>A barn in the northeast of the survey area. It is constructed of corrugated metal. The doors were locked at the time of the survey so it could not be inspected internally, though a barn owl box installed on a wall and pellets could be seen inside through the gap. A hole in the side of the building is located adjacent to a barn owl box.</p>	




Target Note	Description	Photograph
<p>Target Note 23</p>	<p>An open-sided barn constructed of breezeblocks and corrugated metal used for storage of agricultural machinery and materials. No signs of bat or barn owl presence was found, though it could be used as a night roost.</p>	
<p>Target Note 24</p>	<p>A barn south of Heath Road constructed of bricks and corrugated metal used for storage of agricultural machinery and materials. It is partially contained, with opening on the southern and western elevations. No signs of bats or barn owls were found, but it could be used as a night roost.</p>	




Target Note	Description	Photograph
Target Note 25	An area of neutral grassland with suitability for reptiles.	
Target Note 26	The location of an oystercatcher in a field.	No photograph available
Target Note 27	A field that contained 27 lapwings and chicks.	No photograph available
Target Note 28	A field that contained 14 brown hares.	No photograph available




Target Note	Description	Photograph
<p>Target Note 29</p>	<p>Mixed woodland plantation – Gorse Hill Covert - predominately comprised of beech and sycamore with occasional Scot's pine. Dense understorey of bramble and ivy.</p>	
<p>Target Note 30</p>	<p>Patches of mixed scrub on embankment leading down from A15 towards field.</p>	




APPENDIX D – DESCRIPTION OF PONDS WITHIN SURVEY AREA


Table 7 Description of ponds within the survey area

Pond number	Description	Photo
P1	A large pond in an area of scrub and young planted tree, surrounded by compact rush. At least 50cm deep.	
P2	A small pond several metres north of P1. At least 90% covered with algae, with branched burr reed and rushes also present. Approximately 15cm deep.	
P3	A small pond several metres to the east of P1. Dominated by macrophytes including algae, branched burr reed and water horsetail. Approximately 10cm deep.	

Pond number	Description	Photo
P4	<p>Several metres west of P1. Does not appear on OS maps. Very shallow or completely dry at the time of the survey and probably only holds water following heavy rain. Dominated by reed mace, teasel, hard rush, and great willowherb.</p>	
P5	<p>Similar to P4, shallow/dry area that probably only holds water following heavy rain., Dominated by rushes and scrub.</p>	
P6	<p>Small pond in centre of arable field. Surrounded by hawthorn scrub. Duck weed covers approximately 70% of the surface.</p>	

Pond number	Description	Photo
P7	Large pond in a small area of mixed scrub and semi-natural deciduous woodland. Localised patches of duckweed with branched burr reed, floating sweet grass and compact rush.	
P8	Large pond surrounded by hawthorn and willow scrub.	
P9	Stagnant area of a field ditch. Steep sides composed of brick. Dominated by macrophytes including branched burr reed and bullrush.	

Pond number	Description	Photo
P10	Small, shallow pond within a small area of woodland. Dominated by algae.	
P11	Large pond at the edge of an arable field. Dominated by rushes, great willowherb, and branched burr reed.	
P12	Small, very shallow pond within an area of woodland. Dominated by algae.	No photo available.
P13	Large pond in the centre of an arable field surrounded by greater pond sedge. Low cover of macrophytes, including branched burr reed.	

Pond number	Description	Photo
P14	Large pond within Bloxham Woods. Dominated by rushes, branched burr reed, and duck weed.	

APPENDIX E – GREAT CRESTED NEWT HABITAT SUITABILITY INDEX RESULTS

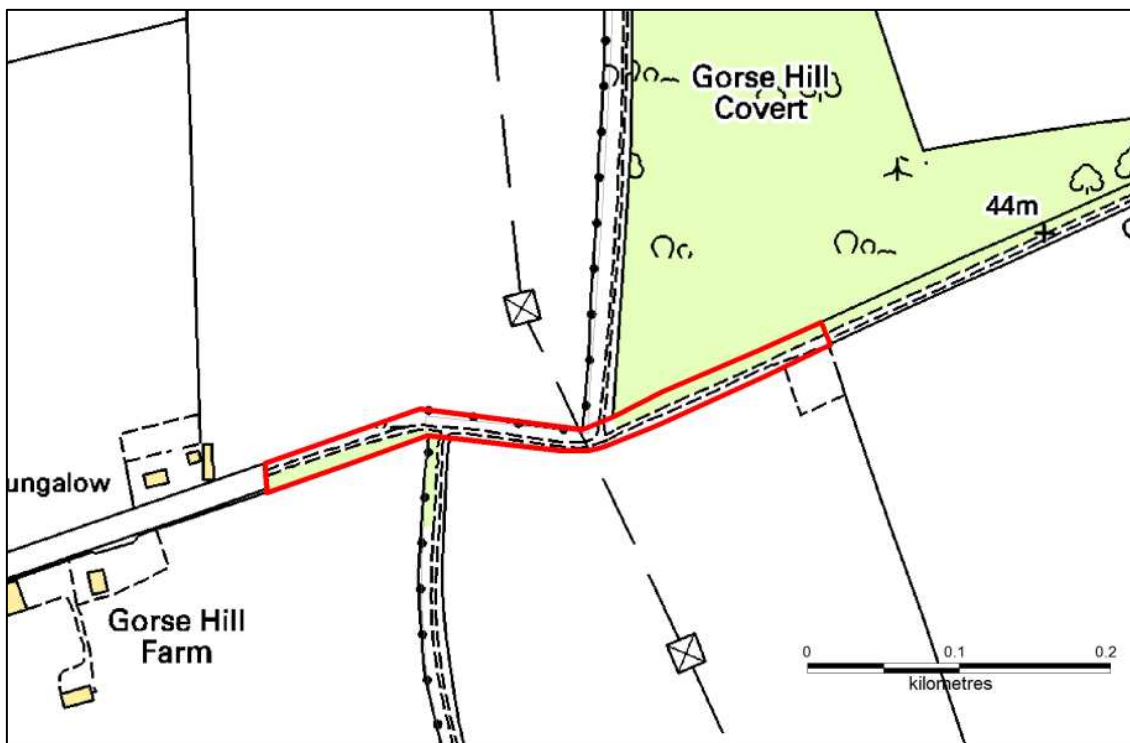
Table 8 GCN HSI Results

	Pond Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
		TF 08799 60425	TF 08791 60444	TF 08759 60391	TF 08950 60238	TF 08943 60237	TF 07908 59844	TF 07950 59662	TF 08426 59744	TF 09273 59068	TF 08587 58356
SI No	SI Description	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value
1	Geographic location	1	1	1	1	1	1	1	1	1	1
2	Pond area	1	0.2	0.8	1	0.6	0.2	0.2	0.7	0.2	0.1
3	Pond permanence	1	0.5	0.1	1	0.1	0.5	1	0.9	0.9	0.1
4	Water quality	0.67	0.67	0.33	0.67	0.33	0.67	0.33	0.67	0.67	0.33
5	Shade	1	1	1	1	1	0.5	0.5	1	1	1
6	Waterfowl effect	0.67	1	1	0.67	1	1	1	0.67	1	0.67
7	Fish presence	0.67	0.67	0.67	0.67	1	0.67	0.67	0.67	0.67	1
8	Pond Density	0.9	0.9	0.9	1	1	0.6	0.65	0.65	0.65	0.7
9	Terrestrial habitat	0.33	0.33	0.33	0.33	0.67	0.67	0.67	0.67	0.33	0.67
10	Macrophyte cover	0.4	1	1	0.7	0.3	0.9	0.9	0.9	1	1
HSI Score		0.72	0.65	0.58	0.77	0.58	0.62	0.62	0.77	0.67	0.50
Pond suitability		Good	Average	Below average	Good	Below average	Average	Average	Good	Average	Below average

Pond Name		P11	P12	P13	P14
		TF 07991 58481	TF 05730 57118	TF 06044 55920	TF 04595 53439
SI No	SI Description	SI Value	SI Value	SI Value	SI Value
1	Geographic location	1	1	1	1
2	Pond area	0.1	0.2	0.1	0.2
3	Pond permanence	1	0.1	1	0.1
4	Water quality	0.67	0.33	0.67	0.33
5	Shade	1	1	0.3	1
6	Waterfowl effect	0.67	1	1	1
7	Fish presence	0.67	1	0.67	1
8	Pond Density	0.2	0.5	0.3	0.5
9	Terrestrial habitat	0.33	0.67	0.33	1
10	Macrophyte cover	0.95	1	1	1
HSI Score		0.53	0.54	0.52	0.56
Pond suitability		Below average	Below average	Below average	Below average

APPENDIX F – LOCAL WILDLIFE SITES CITATIONS

Gorse Hill Lane Verges



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF012562 – TF016563
Length: 0.4 km

Survey: 2010
Surveyor: LotV

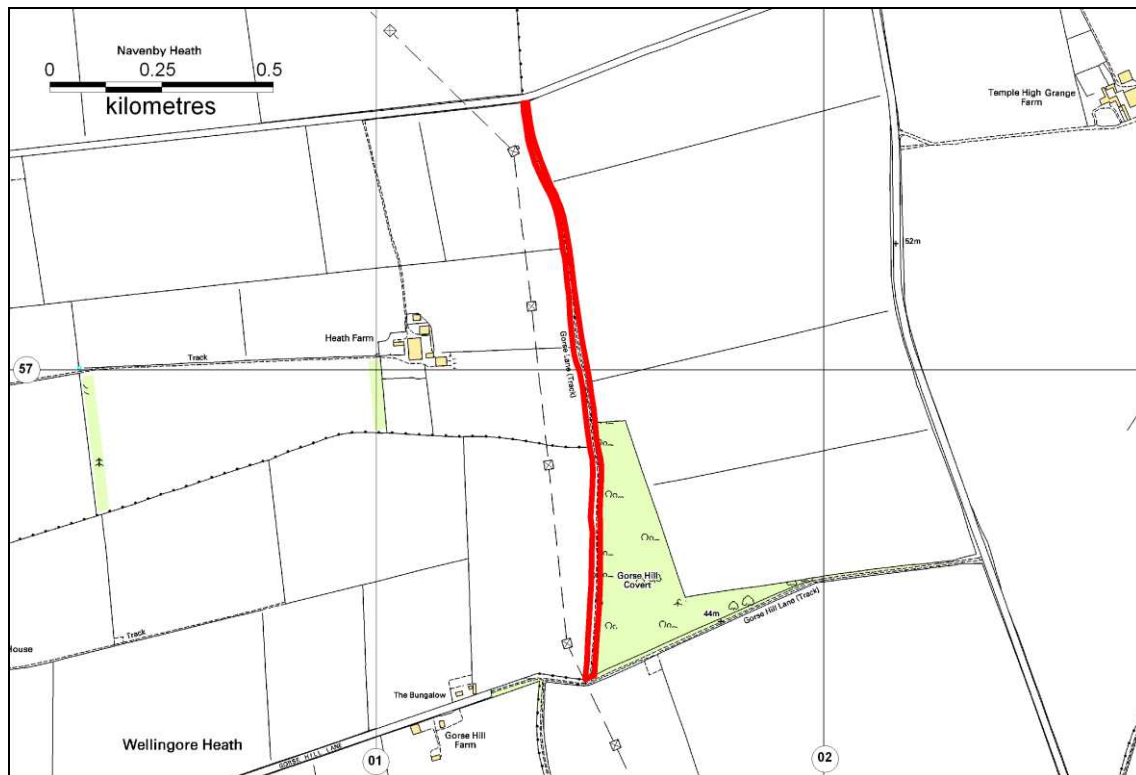
Main habitat: Calcareous grassland

This verge was identified and surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge Project.

Criterion passed: CG1

Recommended as a Local Wildlife Site: 1 April 2011

Gorse Lane



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF014563 – TF013576

Area: 2.2 ha

Survey: 26 June 2008

Surveyor: T.Inskipp

Main habitat: Unimproved calcareous grassland, woodland, dense scrub, bracken

Additional features: Tussocky vegetation, species-rich hedgerows

A narrow lane, 1.3 km long, running north from Gorse Hill Lane (TF014563), east of Wellingore, to a minor road (TF013576) connecting Navenby to the A15. It forms the border to three parishes: Navenby in the north-west, Wellingore in the south-west, and Temple Bruer with Temple High Grange in the east.

It is separated from arable fields on the west side by a thick, apparently unmanaged hedge. On the east side, the southern half merges into Gorse Hill Covert, a small mainly deciduous wood, and the northern half is separated from arable fields by a hedge along most of its length. In places a stone wall further marks its outer boundary.

Since it was last surveyed in 1983 the lane has become overgrown with dense areas of bramble, bracken and scrub. A total of 91 plant species were recorded, including 11 woody species in the hedges, but no large areas of calcareous grassland remained and none of the significant species recorded previously (pyramidal orchid, quaking grass, dropwort, rockrose, small scabious, burnet saxifrage, wild parsnip and restharrow) was found. However, 12 indicator species of calcareous grassland were found: tor-grass, upright brome, common knapweed, greater knapweed, lady's bedstraw, field scabious, common bird's-foot trefoil, red bartisia, hoary plantain, wild mignonette, bladder campion and yellow oat grass; however, all of these species were in very small numbers and mainly in gaps in the hedge where there was a field entrance. Some of the fields margins on the east side held small numbers of calcicolous plants, including woolly thistle (TF014574). At the southern end, under the trees on the east side of the lane, were 35 plants of wall lettuce, a rare species in this part of Lincolnshire.

A15, Green Man Road to Cuckoo Lane



© Crown Copyright and Database Rights (2013) Ordnance Survey (100025370)

Grid ref: TF017590 – TF025560
Length: 3.2 km

Survey: 2011/12
Surveyor: LotV

Main habitat: Calcareous grassland

This site was surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge project.

Criteria passed: CG1, Mos2
Selected as a Local Wildlife Site: 18 March 2013

A15, Slate House Farm to Dunsby Pit Plantation



© Crown Copyright and Database Rights (2013) Ordnance Survey (100025370)

Grid ref: TF030542 – TF037520
Length: 2.4 km

Survey: 2011/12
Surveyor: LotV

Main habitat: Calcareous grassland

This site was surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge project.

Criteria passed: CG1, Mos2
Selected as a Local Wildlife Site: 18 March 2013

Wellingore Heath Road Verges



© Crown Copyright and Database Rights (2013) Ordnance Survey (100025370)

Grid ref: TF001559 – TF005552
Length: 0.8 km

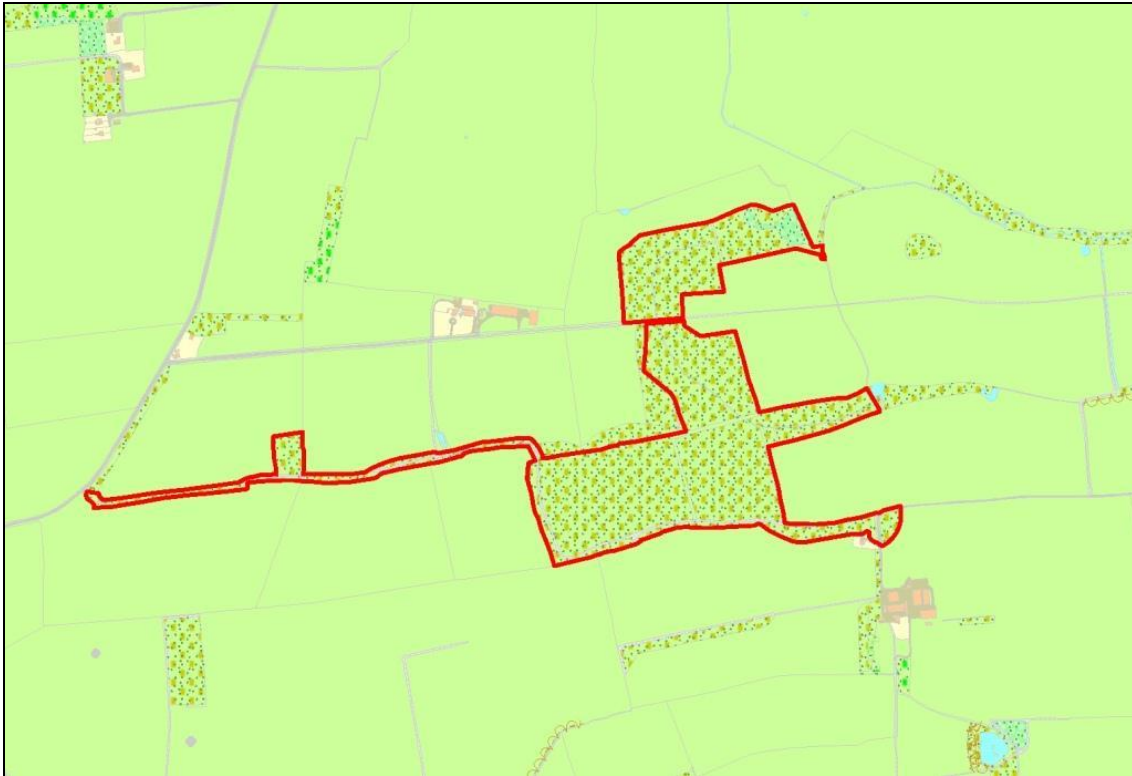
Survey: 2011/12
Surveyor: LotV

Main habitat: Calcareous grassland

This site was surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge project.

Criterion passed: CG1
Selected as a Local Wildlife Site: 18 March 2013

Bloxholm Wood



© Crown Copyright and Database Rights (2014) Ordnance Survey (100025370)

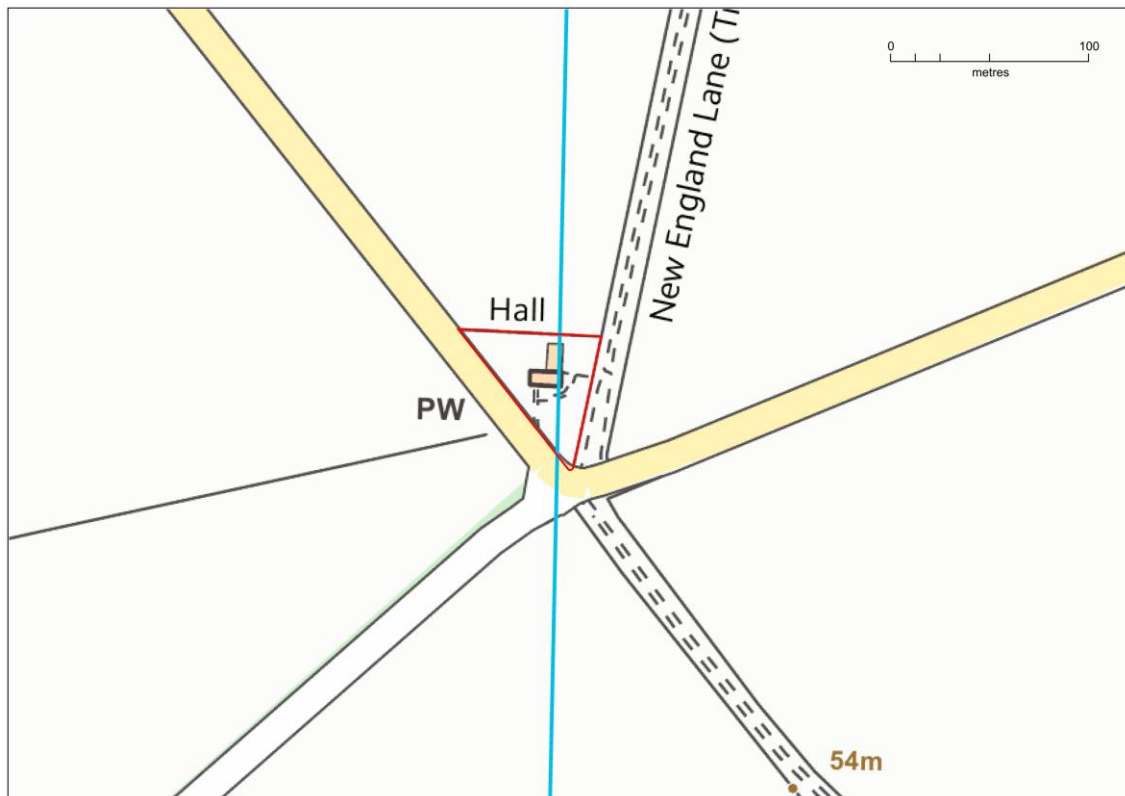
Grid ref: TF047534 **Survey:** 31 May 2013
Area: 29.9 ha **Surveyor:** J.Fraser
Main habitat: Semi-natural woodland
Additional habitat: Bracken, Scrub - scattered / dense, Ditch

This is a woodland nature reserve incorporating Long Plantation, The Oaks, Spruce Covert, Four Acre Plantation, The Thorns, and the major part of both Ten Acre Plantation and The Mount.

The western element of the site is Long Plantation, a 1km long and 10-25m wide strip of woodland lying on both sides of a track that extends eastwards from the B1191 to Ten Acre Plantation and beyond. Also included is a wooded and partially in-filled small former quarry on the north side of the track. The diverse flora includes many planted or naturalised trees and shrubs, but native woody species include ash, elm, wild cherry, holly, wild privet, hawthorn, Midland hawthorn, hybrid hawthorn, field maple, blackthorn, dog-rose, ivy and elder. Others of more artificial origin are lime, beech, horse chestnut, sycamore, apple, laburnum, lilac and wayfaring tree. In the former quarry and nearby can be found a major population of early purple-orchid; around 500 flowering spikes were counted during the survey. Also of some note is a clump of goldilocks just east of the quarry, while other ground flora species include cowslip, three-veined sandwort, sweet violet, wood avens, herb-Robert, wood dock, hairy-brome and false brome; the bluebells are not native.

Lying between Long Plantation to the west and Spruce Covert in the east are Ten Acre Plantation and the The Oaks. A track within the site extends from the north-western corner to the south-eastern corner, following a course close to western and southern edges of the woodland. The southern fringe holds much sycamore, whereas ash and

St John the Baptist Churchyard, Temple Bruer



© Crown Copyright and Database Rights (2017) Ordnance Survey (100016739)

Grid ref: TF009547
Area 0.25ha

Survey: 13 July 2017
Surveyor: Caroline Steel

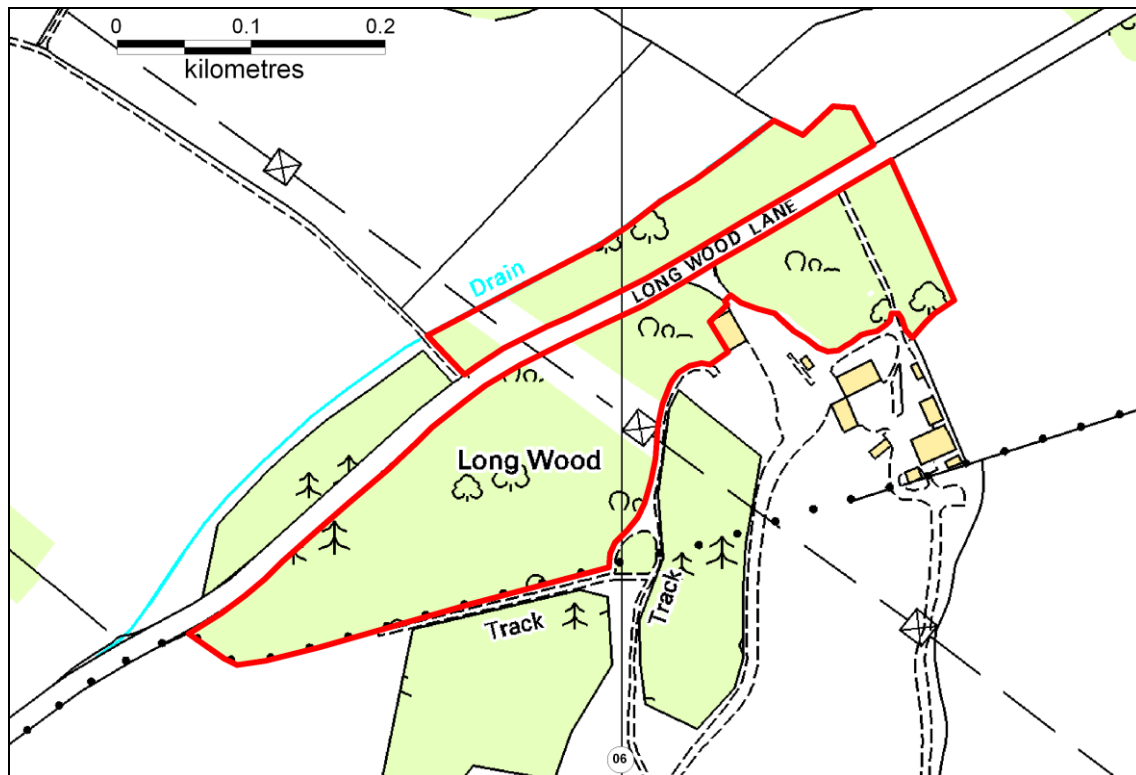
Main habitat: Calcareous grassland (unimproved)
Additional habitat: Calcareous grassland (semi-improved)

St John the Baptist Church, Temple Bruer with Temple High Grange, was built in 1874, at which time, presumably, the churchyard was enclosed (limestone walls). The dark trees visible to the south of the church building are fairly mature yews, probably planted around the time the cemetery was established. There are other trees and shrubs around the edges of the churchyard. Graves are concentrated in the area S, SE & SW of the church.

The open grassland west and south of the church is very species-rich. There is some evidence of seasonal parching. Little of interest was found where the yews cast dense shade. The open area on the north east side of the church is not as rich and at least part has been disturbed recently (evidence of work on septic tank or some such). However plants such as *Plantago media* persist.

The richest areas of grassland appear to be mown regularly and the arisings removed (little evidence of mulching) producing a very tight low sward with abundant thyme. However, taller plants were flowering including small scabious and burnet saxifrage.

Long Wood, Blankney



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF060593
Area: 7.4 ha

Survey: 10 July 2008
Surveyor: T.Inskipp

Main habitat: Semi-natural woodland
Additional habitat: Unimproved neutral grassland
Additional features: Standing/fallen dead wood, steep slopes, hummocky ground, shallow ditches

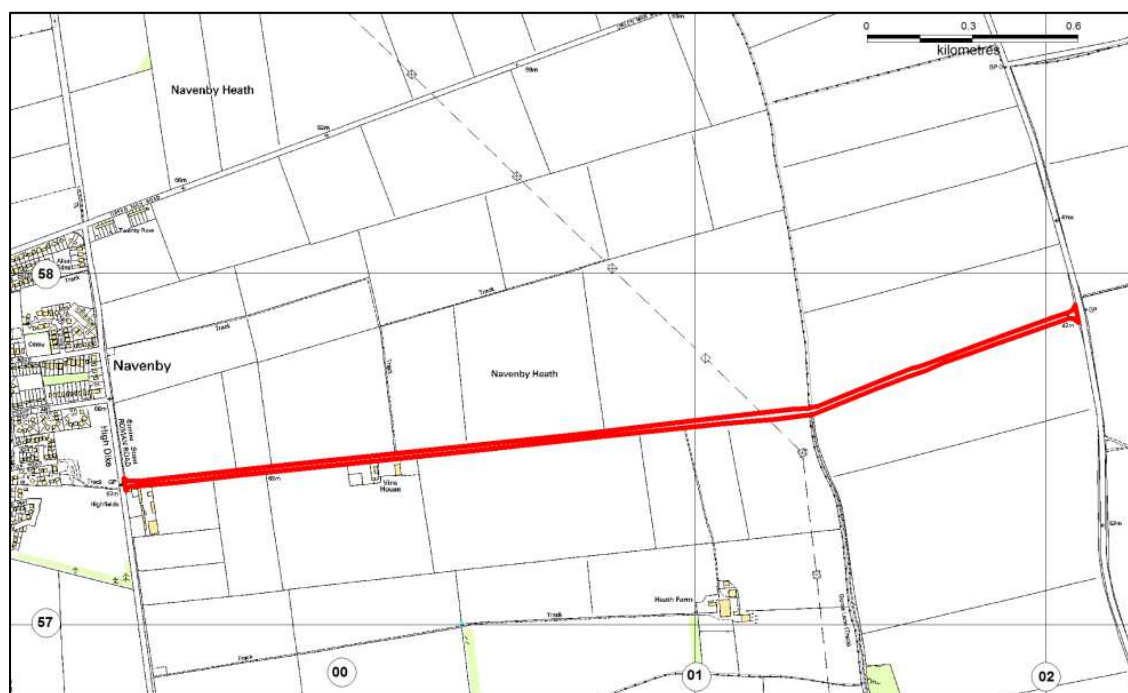
South of road

An area of woodland to the south of Long Wood Lane, bounded on the southern side by quarries, one currently in use and a bigger area around it that was formerly worked. Most of the wood is on a fairly steep north-west facing slope and is quite shady with dense canopy and thick undergrowth and fallen trees. There are some small cleared areas along the route of overhead power lines and the south-western aspect is bounded by a grassy track and species more typical of open habitats. The wood is dominated by sycamore, and other common trees are ash, beech and elm. In the southern part a few pines have been planted and one or two horse chestnuts and small-leaved limes were probably also planted.

A total of 108 plant species were recorded during the survey (with 3 others reported during a previous survey in 1978). These included six woodland indicators: wood anemone, dogwood, spindle, hairy St John's-wort, wild cherry and guelder rose, Five calcareous grassland indicators were present: tor-grass, common knapweed, wild basil, lady's bedstraw and red bartsia and the southern track had two additional neutral grassland indicators: common sedge and ox-eye daisy.

Birds recorded included 6 crossbills flying out of the pines, spotted flycatcher, and singing blackcap, chiffchaff, blackbird and wren. Along the southern track meadow brown, gatekeeper and ringlet butterflies were frequent.

Navenby Heath Road Verges



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: SK993573 – TF020578
Length: 2.8 km

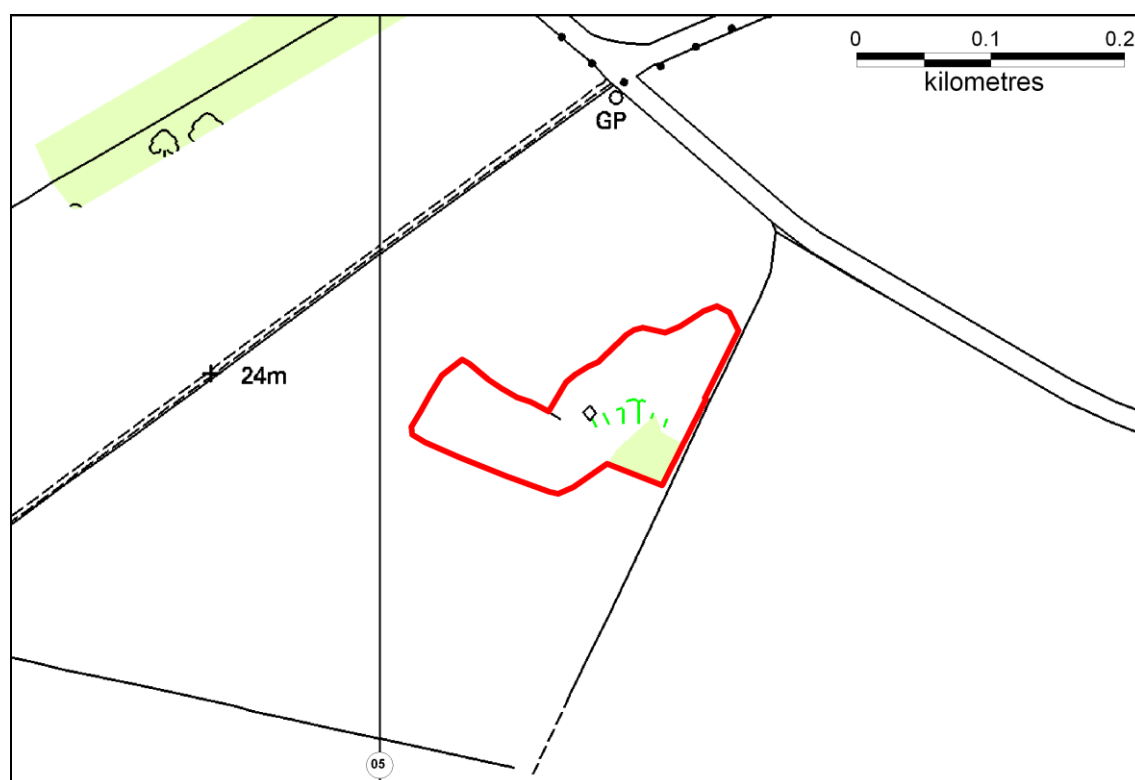
Survey: 2010
Surveyor: LotV

Main habitat: Calcareous grassland

This verge was identified and surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge Project.

Criteria passed: CG1, Mos2
Recommended as a Local Wildlife Site: 1 April 2011

Scopwick Heath Old Quarry



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF051586
Area: 1.7 ha

Survey: 3 September 2008
Surveyor: C.Stevenson

Main habitat: Unimproved calcareous grassland
Additional habitat: Plantation woodland
Additional features: Planted specimen trees, tussocky vegetation, bare ground, rock outcrops, steep slopes, south-facing slopes, hummocky ground

This site is an old limestone quarry, although there is only one small exposure of limestone left. Most of the site is covered in a thick deep cover of grasses – mainly tor-grass. There is a little elder scrub in the north-eastern corner, associated with a dense ground cover of nettle and rosebay willowherb. This corner is also where some tipping has occurred in the past. There is no sign that this scrub is encroaching onto the grassland, indeed a large percentage of the elders are moribund. In the south-eastern corner there is also a small block of planted trees.

The main interest lies in the grassland where species such as rockrose, harebell, burnet-saxifrage, lady's bedstraw and knapweed are still present in quantity. Less frequent species include common restharrow, glaucous sedge, carline thistle, thyme, viper's bugloss, and salad burnet.

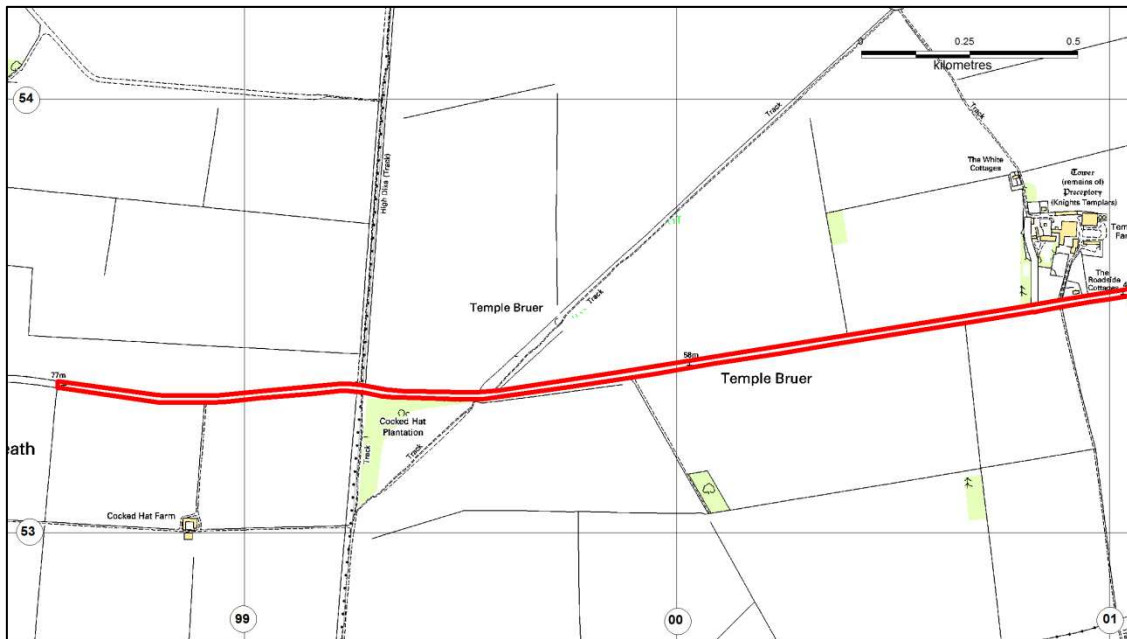
A number of the species listed previously were not seen, but that may be because of the late visit. They included: dropwort, small scabious and hairy violet. The flora also includes a number of more-or-less ubiquitous species that are not particularly characteristic of limestone grassland.

There are some signs of rabbit activity, and there were a few bare patches of soil on some of the steeper south facing slopes. Butterflies seen include speckled wood and small white.

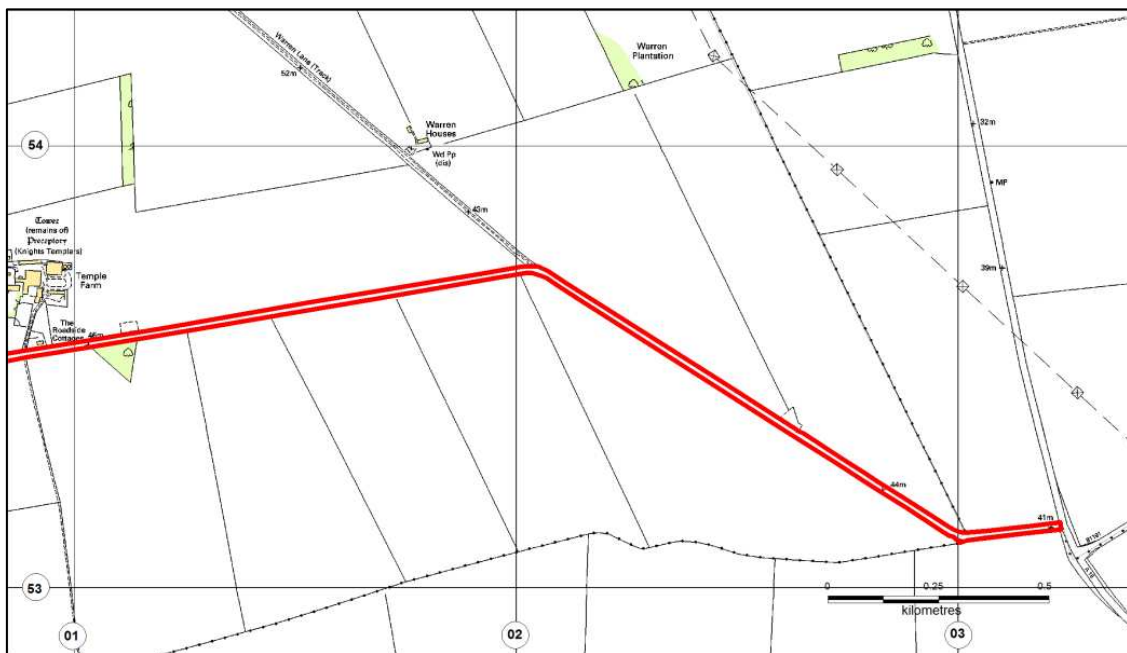
Criteria passed: NG1, CG1

Recommended as a Local Wildlife Site: 10 September 2009

Temple Road Verges, Welbourn to Brauncewell



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: SK985533 – TF032531
Length: 4.9 km

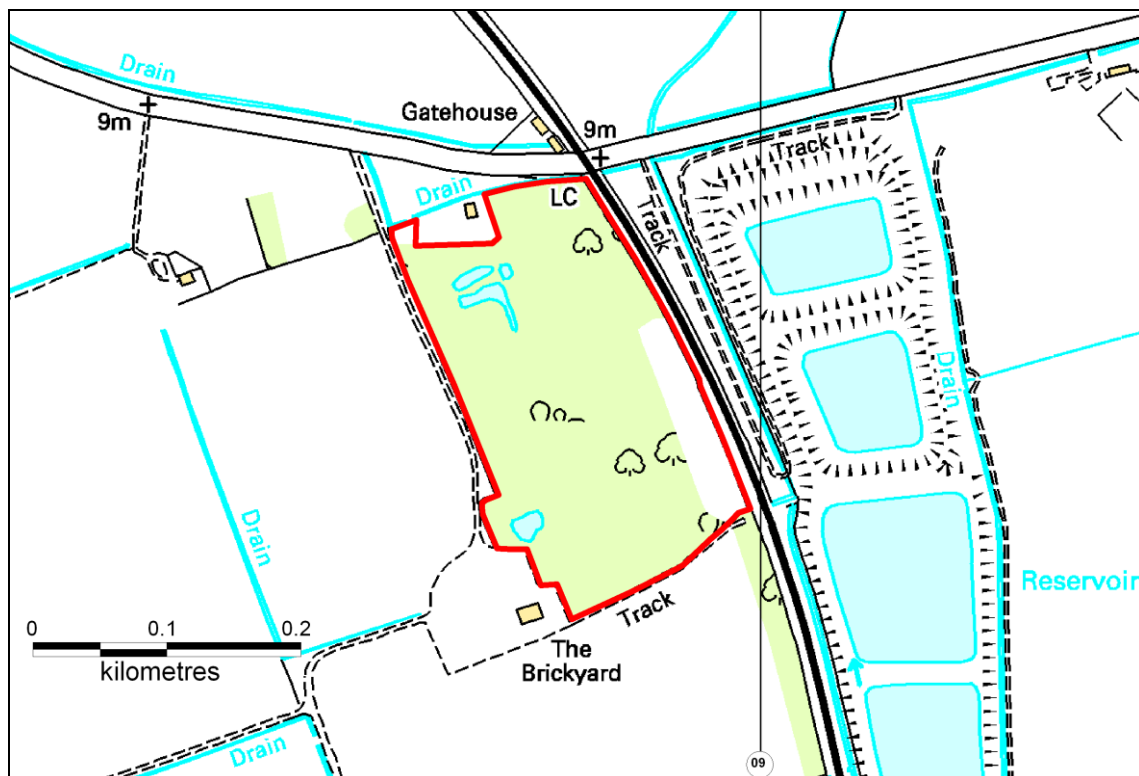
Survey: 2010
Surveyor: LotV

Main habitat: Calcareous grassland

This verge was identified and surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge Project.

Criteria passed: CG1, Mos2
Recommended as a Local Wildlife Site: 1 April 2011

Blankney Brick Pit



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF088603

Area: 4.9 ha

Main habitats:

Additional habitats:

Additional features:

Semi-natural woodland

Wet woodland, standing water

**Standing/fallen dead wood, hummocky ground,
areas with frequent/prolonged flooding**

Survey: 7 July 2008

Surveyor: T.Inskipp

A disused brick pit, about 2 km east of Blankney village on the south side of a minor road to Walcott. The east side is bounded by a railway line and the south and west sides by open farmland.

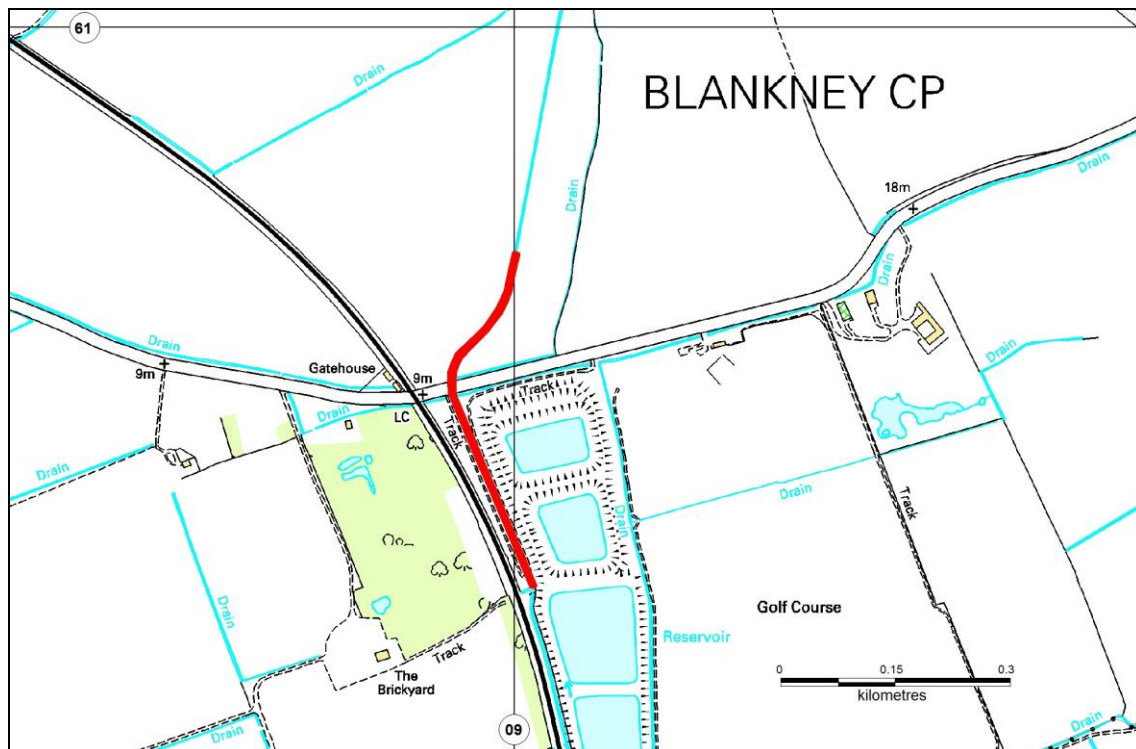
The previous survey in 1978 described it as an 'area of clear water, deep pits with sedgey edges; difficult to negotiate; also woodland.' This suggests that it was fairly open habitat at that time. However, it is now very overgrown, with almost complete tree cover, and the pits are shallow and shaded. Access is very difficult because the boundary is lined with thick bushes and nettles. For this survey access was made in the north-east corner and a zigzag course was followed between fallen trees, thick bushes, extensive nettle patches and the wet pits, eventually emerging on a track on the south side.

A total of 82 plant species were recorded, including a few woodland indicator species, suggesting that at least some woodland has existed here for some time: lady fern, hazel, creeping-jenny, primrose, common figwort and guelder rose. It is likely that there were more water plant species when the habitat was more open; of those remaining the most notable were tufted sedge and the introduced least duckweed. Very few animal species were noted, given the nature of the terrain. A few birds were singing: blackcap, chiffchaff, blackbird, robin and wren, and a hobby was noted flying over just outside the site. Mosquitoes were extremely abundant.

Criteria passed: WD4, Sw2

Recommended as a Local Wildlife Site: 10 September 2009

Blankney Dyke



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF090607 – TF090602

Area: 0.5 km

Survey: 14 September 2010

Surveyor: A.Prendergast

Main habitat: Drain/ditch
Additional habitat: Calcareous grassland, Arable
Additional features: Tussocky vegetation, Steep slopes

A ditch following an apparently natural course, running through arable fields and crossed by a minor road. The ditch is fed via a culvert just north of the road.

The site supports a reasonably varied aquatic flora including stands of greater pond sedge *Carex riparia*, bulrush *Typha latifolia* and branched bur-reed *Sparganium erectum* but also occasional foals watercress *Apium nodiflorum*, yellow flag *Iris pseudacorus*, purple-loosestrife *Lythrum salicaria*, gypsywort *Lycopus europaeus*, reed canary-grass *Phalaris arundinacea* and water figwort *Scrophularia auriculata*.

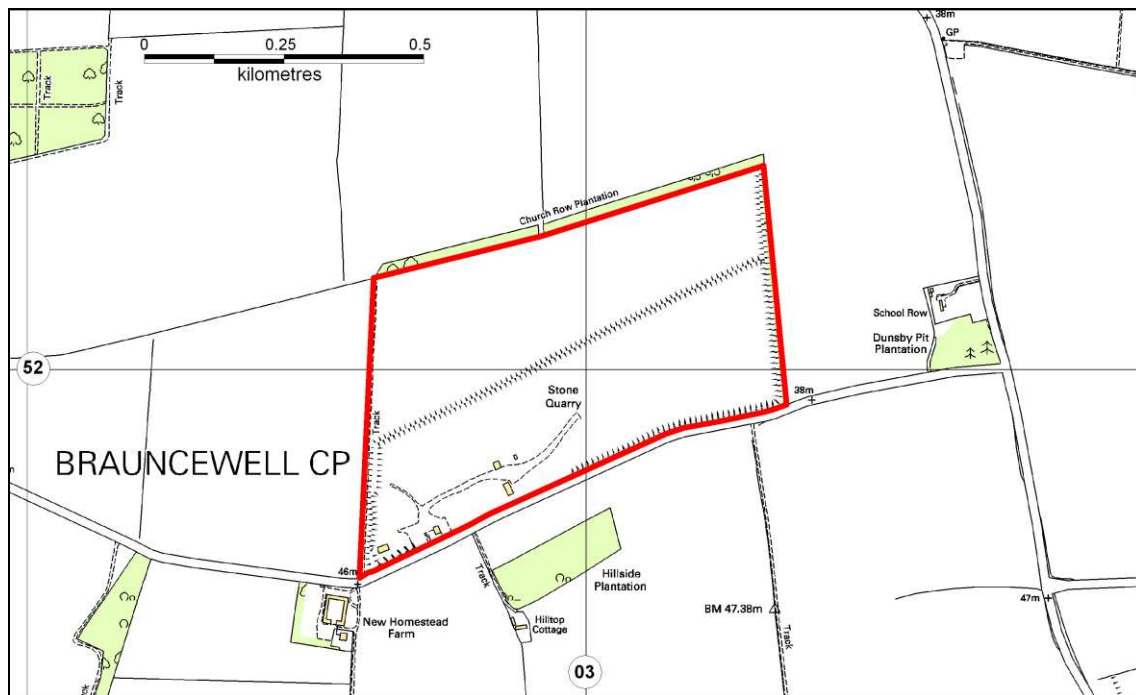
The upper banks support a rudimentary calcareous-neutral grassland flora with tor-grass *Brachypodium pinnatum* dominating over large sections and meadowsweet *Filipendula ulmaria*, knapweed *Centaurea nigra* and false oat-grass *Arrhenatherum elatius* also frequent. Occasional hawthorns *Crataegus monogyna* are present on the banks.

The section of the dyke to the south of the road is swamped by scrub. Species present include hawthorn, dogwood *Cornus sanguinea*, blackthorn *Prunus spinosa*, field rose *Rosa arvensis*, grey willow *Salix cinerea* and guelder-rose *Viburnum opulus*.

Criterion passed: Sw2

Recommended as a Local Wildlife Site: 1 April 2011

Braucewell Quarry



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF029519 **Survey:** November 2009
Area: 33.7 ha **Recorder:** J.Aram, T.Langdale-Smith, R.Bartlett

Description and geomorphology

The quarry presents an impressive wide and low-lying vista of almost horizontal limestone beds, strongly conveying the scale of the depositional environment.

Access from the west end is used by the quarry traffic and is therefore provides safe, open and clear access and parking within the designated areas, traffic notwithstanding.

The faces are visible on the north, south and east sides, although the south side will be concealed by embanked fill to protect the road.

The working faces on the north and east sides, stand vertically with little weathered scree. The older un-worked face along the south side shows a greater degree of fissuring and jointing leading to spalling, due to stress-release in the strata.

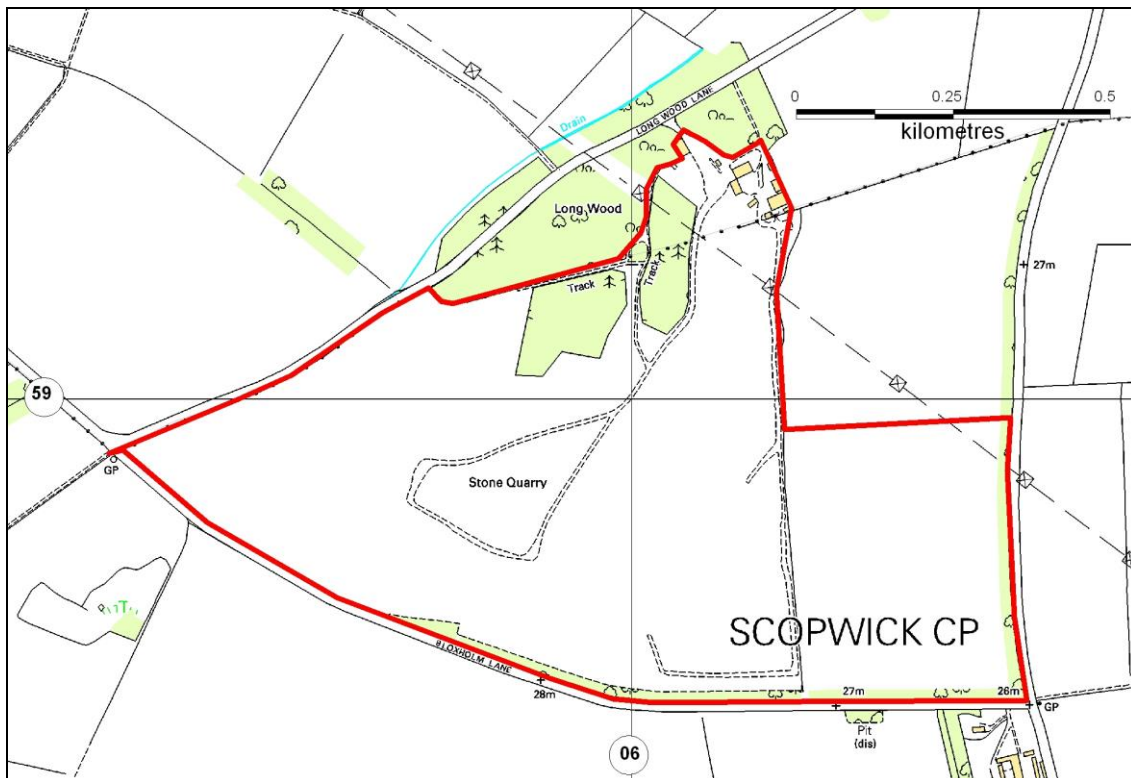
Brief history and present status

The quarry has recently achieved planning permission (N15/0771/07): *to extract limestone from land immediately to the northwest of Braucewell (as an extension to the existing quarry) and to restore the extension area and the existing quarry utilising inert waste at Braucewell Quarry.*

Study of the documents supporting the application show no attempt to preserve any face for future inspection.

Criteria passed: Scientific, Cultural, Educational, Access and safety
Recommended as a Local Geological Site: 6 December 2010

Longwood Quarry, Blankney



OS copyright No. AL100016739, Banovallum House, Manor House Street, Horncastle, Lincolnshire. LN9 5HF

Grid ref: TF058589 **Survey:** November 2009
Area: 70.8 ha **Recorder:** J.Aram, T.Langdale-Smith, R.Bartlett

Description and geomorphology

The quarry presents an impressive wide and low-lying vista of almost horizontal limestone beds, strongly conveying the scale of the depositional environment. Activity in the quarry is at a low level and large parts are now left dormant. The faces extant are relatively low and, due to the extensive flat quarry floor, are easily and safely accessible.

A layer of Glacial Till can be seen draped over the limestone beds. Channels cut into the limestone bedrock and then filled with glacial deposits can be seen at more than one locality.

Brief history and present status

The quarry was established in the 19th century when the Blankney Estate was owned by the Chaplin family, to provide lime to improve the local soils. A kiln was built at the quarry to burn the limestone. It is now defunct and almost completely overgrown.

The quarry continues to supply aggregate and dimension stone to a local market at a low level of activity.

Criteria passed: Scientific, Cultural, Educational, Access and safety
Recommended as a Local Geological Site: 6 December 2010



RSK Biocensus is owned by RSK Environment Ltd
Registered office
Spring Lodge, 172, Chester Road, Helsby, Frodsham, England, WA6 0AR, UK
Registered in England No. 04364279
www.rsk.co.uk