Springwell Solar Farm

Environmental Statement
Appendix 7.1: Preliminary Ecological Appraisal

Volume 3

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009

EN010149/APP/6.3
November 2024
Springwell Energyfarm Ltd

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1. 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 UK habitat survey, with assessment for protected or otherwise notable species, of the proposed Springwell Solar Farm, near Ashby de la Launde, Lincolnshire. The survey area included the land within the Order Limits plus adjacent land, which was part of the original survey area scope. The area within the Order Limits is hereafter referred to as the 'Site'. The Site and wider survey area are shown in **Figure 1** of this report.

1.1.2. The PEA included a ground-level assessment of trees potentially suitable for roosting bats within and adjacent to the Order Limits and a badger survey. Ponds and ditches identified on or within 500m of the site were assessed for their suitability to support great crested newt (GCN) (*Triturus cristatus*) and GCN environmental DNA (eDNA) surveys undertaken where appropriate and access permitted.

1.1.3. The area was surveyed over a period of 18 months as the Order Limits were refined and additional areas were added to the Proposed Development. The survey areas shown on **Figure 2** of this report are named as follows:

- The Main Site, comprising land between Blankney in the north-east to fields west of the A15 in the south-west, was surveyed in April and May 2022.
- The Northern 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.
- The Cable Corridor area, in which the cable route connecting the proposed Springwell solar farm to a new National Grid Navenby substation will be located (central National Grid reference - TF015582), was surveyed in November 2023.

1.1.4. The results of these PEA surveys had previously been presented in three separate reports: a report for the majority of the Site (RSK Biocensus 2023a), for the land near Brauncewell (RSK Biocensus 2023b), and for the Grid Connection Corridor (RSK Biocensus 2023c). This report and accompanying figures present the results of all three reports combined, which covers the whole area within the Order Limits and wider survey area.

1.1.5. Note this report does not consider in detail the likely impacts on ecological receptors as a result of the Proposed Development or mitigation requirements as this is assessed within **ES Volume 1, Chapter 7: Biodiversity [EN010149/APP/6.1].**

1.1.1. Further surveys recommended by this PEA have been undertaken and are reported separately in other appendices (shown in **ES Volume 3, Appendices 7.2** to **7.13 [EN010149/APP/6.3]** as listed below:

- **Appendix 7.02 Breeding Bird Survey**
- **Appendix 7.03 Wintering Bird Survey**
- **Appendix 7.04 Barn Owl Survey - Confidential**
- **Appendix 7.05 Bat Activity Survey**
- **Appendix 7.06 Bat Activity Survey Addendum**
- **Appendix 7.07 Riparian Mammal and Aquatic Habitat Assessment**
- **Appendix 7.08 Notable Arable Flora Survey**
- **Appendix 7.09 Local Wildlife Site Verges Survey**
- **Appendix 7.10 Badger Survey - Confidential**
- **Appendix 7.11 Important Hedgerow Survey**
- **Appendix 7.12 Arboricultural Impact Assessment**
- **Appendix 7.13 Further Targeted Bat Activity Survey**

1.2. Ecological context

1.2.1. The c.1280 hectare (ha) Site is located close to the villages of Blankney, Scopwick, and Ashby de la Launde in the district of North Kesteven, Lincolnshire. The area is dominated by arable land with scattered broadleaved and mixed woodland plantations and areas of scrub. The majority of the fields are bordered by hedgerows or dry-stone walls. The A15, a major connecting road between Lincoln and Sleaford, is orientated north-south through the western half of the Site. Smaller roads and farm tracks intersect the remainder of the Site. There are four ponds within the Site and an additional ten within the survey area. Streams and ditches transect 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, Royal Air Force (RAF) Digby, broadleaved and mixed woodland plantations, hedgerows, and some scattered residential properties.

1.3. Proposed Development

1.3.1. The Proposed Development will comprise the following: The Proposed Development comprises the construction, operation and maintenance of Solar Photovoltaic (PV) generating modules, energy storage facilities, and grid connection infrastructure, across a proposed site in North Kesteven, Lincolnshire.

1.3.2. The Proposed Development is located within the administrative boundary of North Kesteven District Council and Lincolnshire County Council.

- Solar PV development comprising;
    - Ground-mounted Solar PV generating station. The generating station will include Solar PV modules and mounting structures;
    - Balance of Solar System (BoSS), which comprises inverters, transformers, and switchgear;

- 400kV Grid Connection Corridor to connect the Springwell Substation and proposed National Grid Navenby Substation;
- Satellite Collector Compounds comprising switchgear, transformers, ancillary equipment and operation, maintenance, security and welfare units;
- A project substation ('Springwell Substation') compound, which will include substation, switching and control equipment, office/control/welfare/security buildings, storage areas, and provisions for vehicular parking and material laydown;
- Battery Energy Storage System (BESS) compound, including batteries and associated inverters, transformers, switchgear and ancillary equipment and their containers, enclosures, monitoring systems, air conditioning, electrical cables, fire safety infrastructure and operation, maintenance, security and welfare facilities;
- Underground cabling will connect the Solar PV modules and BESS compound to the BoSS, collector compounds, and the Springwell Substation.
- Ancillary infrastructure works, including boundary treatments, security equipment, earthing devices, fencing, lighting, earthworks, surface water management, internal tracks and any other works identified as necessary to enable the development;
- Landscaping, habitat management, biodiversity enhancement and amenity improvements; and
- Works to facilitate vehicular access to the Site.

1.3.3. This report does not include the land on which the proposed new National Grid 'Navenby' substation will be constructed.

1.4. Validity of data

1.4.1. According to Chartered Institute of Ecology and Environmental Management (CIEEM) advice (CIEEM 2019) **[Ref-1]**, survey data are valid for a period of 12 to 18 months from the date of the survey and potentially longer if there have been no significant changes to the baseline habitats present. The report highlights any circumstances where data may be valid for less than 18 months.

2. Following a period of 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.

3. Methods

3.1. Overview

2.1.1 The PEA was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017) **[Ref-2]**; so therefore included:

- a desk study (here called a background data search), which included a review of aerial photographs; obtaining information from the Department for Environment, Food and Rural Affairs (DEFRA) and Joint Nature Conservation Committee (JNCC) websites, and the local authority website; requesting data from the local records centre; and
- a field survey that informed habitat mapping, an assessment of the possible presence of protected or priority species and the likely importance of habitat features.

3.1.1. The PEA report includes an ecological description of the Site 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.

3.1.2. Surveys were carried out at the following timings by the following surveyors:

- The survey of the Main Site (as shown on **Figure 2** of this report) was carried out in April 2022. The survey of the Brauncewell site and Northern Fields was conducted in January 2023 and the Four Fields in June 2023. Surveys were carried out by a suitably qualified and experienced senior ecological consultant, with over ten years' experience of preliminary ecological appraisal surveys for ecological consultancy.
- The survey of the Grid Connection Corridor was carried out in November 2023 by a suitably qualified and experienced ecological consultant, with over two years' experience in ecological consultancy.

3.2. Background Data Search

3.2.1. A search was made in November 2023 for relevant reference materials. A list of sources is given in **Table 1**.

Table 1 Background data sources

Information obtained	Available from
Protected and noteworthy species-records	Greater Lincolnshire Nature Partnership **[Ref-3]**
Designated site locations and citations	Natural England website
Designated site locations and citations	JNCC website **[Ref-4]**
Designated site locations and citations	Greater Lincolnshire Nature Partnership **[Ref-3]**
Designations and legal protection of noteworthy species	JNCC website **[Ref-4]**

Information obtained	Available from
Areas / Habitats of Strategic Significance	Lincolnshire biodiversity action plan **[Ref-5]**
Areas / Habitats of Strategic Significance	National Habitat Networks **[Ref-6]**
Areas / Habitats of Strategic Significance	National Priority Focus Areas **[Ref-7]**
Areas / Habitats of Strategic Significance	Nature Improvement Areas **[Ref-8]**

3.2.2. A search was made for the following international and national statutory designated sites of ecological importance within 10km of the Order Limits: Ramsar sites, Special Areas of Conservation (SAC) , Special Protection Areas (SPA), and for Sites of Special Scientific Interest (SSSI), including consideration of SSSI risk zones, within 2km.

3.2.3. A search was also made for non-statutory designated sites, which are often important in a local context, within 2km of the Order Limits and any ancient woodland sites within 1km of the Order Limits.

3.2.4. The background data search also included a search for records within 2km of the Order Limits of noteworthy species, which might pose a constraint to the Proposed Development. Species included in the search were:

- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended)) **[Ref-9]**;
- nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 (as amended) and The Protection of Badgers Act 1992 **[Ref-10]**;
- species listed as critically endangered, endangered, or vulnerable based on the International Union for Conservation of Nature (IUCN) Red List Categories and Criteria 2001 **[Ref-11];**
- all species listed on the Royal Society for the Protection of Birds's Birds of Conservation Concern 5 (Stanbury et al., 2021) **[Ref-12]** as 'Red' or 'Amber';
- nationally rare or nationally scarce species;
- notable invertebrates; and
- species of principal importance listed under The Natural Environment and Rural Communities (NERC) Act 2006 **[Ref-13]** or priority species under the relevant local biodiversity action plan.

3.2.5. The noteworthy species listed in the relevant sections in **Section 3 Results** include only those recorded between 2004-2023. Locations have been included for the records where they were provided in the background data search.

3.2.6. Further information regarding legislation and policy relating to protected species, including the Acts listed above, is provided in **Appendix 1** of this report.

3.3. Plants and habitats

UK Habitat (UKHab) survey

3.3.1. The field survey was based on the UK habitats (UK Hab) survey methodology (Version 1.0; Butcher et al, 2020) **[Ref-14]**. The UK Hab classification system is the habitat classification that underpins the DEFRA Biodiversity Metric and is therefore the favoured habitat classification to use when surveys need to inform a Biodiversity Net Gain (BNG) calculation. This field survey was undertaken in line with CIEEM 2017 **[Ref- 2]** and involved the following elements:

- descriptions of the broad and dominant vegetation types;
- habitat mapping using a set of standard colour codes to indicate habitat types; and
- additional notes relating to numbered locations, called 'Target Notes'.

3.3.2. Vascular plant species were recorded during the survey, although no attempt was made to produce an exhaustive species list. Additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year.

3.3.3. Plant nomenclature in this report follows Stace (2019) **[Ref-15]** for native and naturalised species of vascular plant. Introduced species and garden varieties were identified using relevant Floras. Plant names in the text are given with common names with the scientific name in italics immediately following the first time it is mentioned. Capital letters are used for common plant names.

3.3.4. Habitat condition assessments were also carried out using criteria as detailed within the Biodiversity Metric 4.0 **[Ref-16]** which was the current metric at the time of the PEA survey. The condition assessments were used to determine the baseline biodiversity metric value, which was calculated using the Statutory Metric (the subsequent and current metric, updated following metric 4.0). The current condition assessment guidance for the Statutory Metric has not changed significantly since the PEA baseline surveys were completed. The Biodiversity Net Gain (BNG) assessment has ensured up to date condition assessment criteria was used to ensure accuracy and to reflect baseline conditions. Details of the BNG assessment are provided in the **oLEMP [EN010149/APP/7.9]**.

3.4. Protected and notable animals

General

3.4.1. The Site was assessed for its suitability to support protected or otherwise notable animals that are likely to occur in the area. Some species could be ruled out through review of existing records, species distribution, geographic location, ecological connectivity and broad habitat types. Taking into account connectivity to natural habitats in the wider landscape, the nature and extent of habitats at the Site, specific assessment was also carried out for the species/species groups outlined below.

Invertebrates

3.4.2. The Site 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 background data search.

Great crested newts

3.4.3. Although standing water is essential for their breeding, great crested newts (*Triturus cristatus*) are terrestrial for most of the year and have been recorded up to 500m from their breeding ponds. Ordnance Survey maps and aerial imagery was reviewed to identify any ponds within 500m of the Order Limits, and the Site was assessed for its suitability for both terrestrial and breeding great crested newts. Optimal breeding ponds tend to be well-vegetated, relatively clean and unpolluted, free of fish and wildfowl, and retentive of water throughout most summers (but not necessarily all). 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. Habitat suitability for other amphibians was similarly assessed.

3.4.4. Water features were assessed to determine whether they were suitable for great crested newts using the habitat suitability index (HSI) methodology developed by Oldham *et al*. (2000) **[Ref-17]**. This comprises a numerical index, where 0 indicates unsuitable habitat and 1 represents optimal habitat.

3.4.5. 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 any pond with a high HSI will support newts in high populations, or that any pond with a low score will support low numbers of newts or no newts at all.

3.4.6. Environmental DNA (eDNA) surveys were also undertaken of all suitable waterbodies. The GCN eDNA survey technique involves analysing water samples from the waterbody to confirm the presence or absence of great crested newt DNA which can be shed by newts through skin secretions, excrement etc. Using kits purchased from approved suppliers, water samples were taken, targeting aquatic vegetation used for egg laying, but otherwise evenly around the water margin, using strict protocols approved by Natural England and described in Biggs et al. (2014) **[Ref-18]**. The samples from each waterbody were collected into a single sample bag and gently homogenized, after which six samples were taken, preserved in ethanol-based preservative, and sent to the accredited RSK ADAS laboratory for analysis.

Reptiles

3.4.7. The Site 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).

3.4.8. 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

3.4.9. Birds nest, forage and roost in a wide variety of habitats including scrub, woodland, hedgerows and trees, wetland, arable and pastoral farmland and rough grassland. Some species also use open bare ground and man-made structures.

3.4.10. The Site 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) **[Ref-20]**, the red and amber lists of the RSPB's Birds of Conservation Concern 5 **[Ref-12]** and other notable species recorded in the background data search, including any species that are qualifying features of nearby designated sites. Consideration was given to the site'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. The presence of nests or signs of nest building were recorded.

3.4.11. Buildings were surveyed for their suitability for barn owls and other species, with signs including nesting sites, feathers, droppings and pellets.

Bats

3.4.12. Habitats were assessed for their suitability for foraging and commuting bats, in line with guidance provided in Collins (2016) **[Ref-19]**. 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.

3.4.13. Trees and buildings were noted if they had potential suitability for roosting bats (Collins 2016) **[Ref-19]**. 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). Each tree and building was given a category (see **Table 2**) based on its potential for roosting bats.

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

Category (suitability for 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 Potential Roost Features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.

Category (suitability for roosting bats)	Description
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.

Badgers

3.4.14. An initial assessment was carried out to identify areas that might be used by badgers (*Meles meles*) for foraging or sett building within 30m 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 principle importance

3.4.15. The UK countries of England, Wales, Scotland, and Northern Ireland are obliged by their individual laws to maintain lists of species and habitats of principal importance for biodiversity conservation. In England, this obligation derives from the NERC Act 2006 **[Ref- 13]** . An assessment of the suitability and likelihood of the site supporting such species was made, for example, brown hare (*Lepus europaeus*).

3.5. Limitations

3.5.1. Less conspicuous plant species (including Invasive Non-Native Species (INNS)) may have been missed as a result of surveys in the Brauncewell, Northern Fields, and Connection Corridor areas being undertaken outside of the ideal survey season. 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.

3.5.2. 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.

3.5.3. 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.

3.5.4. Access was not made to adjacent land without access permission, and therefore it remains possible that a badger sett or other evidence of protected or notable species beyond the Order Limits could have been missed.

3.5.5. Much of the woodland within the Site was covered by dense bramble scrub at the time of the survey which prevented a full survey for both badger and nesting birds being conducted. The peripheries of all such areas were extensively searched, providing a high level of confidence in the results and assessment provided.

3.5.6. Trees within woodlands were not assessed individually for their suitability for roosting bats on the assumption that woodland would be retained within the Springwell Solar Farm scheme design. If any of these trees are to be impacted directly or the cable route is anticipated to pass in close proximity to this area, further survey may be required.

3.5.7. Several hedgerows were noted to have been flailed prior to the survey of the grid connection corridor. As such there was little vegetation by which to identify species with confidence and therefore only a rough estimation of relative species richness could be made.

3.5.8. All recommendations made in this report are based on the information provided by the Applicant. A detailed layout of the proposed cable route was not available at this time. If the Proposed Development design changes significantly or extend outside of the survey area, then an ecologist must be consulted, and further surveys may be required.

4. Results

4.1. Background data search

Biodiversity action plans

4.1.1. The latest Lincolnshire local biodiversity action plan (LBAP) **[Ref-5]** 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;
  - Lowland calcareous grassland;
  - Ponds, lakes, and reservoirs, rivers, canals, and drains; and
  - Lowland mixed deciduous woodland.
- Species:
  - Bats;
  - farmland birds;
  - newts; and
  - water vole.

International statutory designated sites

4.1.2. There are no internationally protected nature conservation sites within 10km of the Order Limits.

4.1.3. '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 the nature of the works.

National statutory designated sites

4.1.4. There are no nationally protected statutory designated nature conservation sites within 2km of the Order Limits. The only SSSI Impact Risk Zone, which covers a small part of the western edge of the Site, is for High Dyke SSSI (3.6km southwest of the Site) – however none of the developments which are considered of concern for air pollution (listed as: aviation, livestock and poultry units, slurry lagoons) relate to the Proposed Development. There is however one statutory designated geological site within 2km, as detailed in **Table 3**.

Table 3 National statutory designated sites within 2km of the Site

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 a warm, shallow sea during Middle Jurassic times about 170 million years ago.	1.9km northwest

Non-statutory designated sites

4.1.5. There are 17 non- statutory designated nature conservation sites (Local Wildlife Sites (LWS)) within 2km of the survey area, five of which are wholly or partially within the Order Limits. The designated sites present within the study area are listed in **Table 4** along with their proximity to the Site. Full citations for these sites are included in **Appendix 3**. Their locations are shown on **Figure 3** of this report.

Table 4 Non-statutory designated sites within 2km of the survey area

Site name	Reason for designation	Approximate distance (km) and direction from survey area
A15, Green Man Road to Cuckoo Lane	Calcareous grassland	Within Order Limits
A15, Slate House Farm to Dunsby Pit Plantation	Calcareous grassland	Within Order Limits
Blankney Brick Pit	Semi-natural woodland and wet woodland (felled since LWS survey in 2008), standing water, standing/fallen dead wood, hummocky ground, areas with frequent/prolonged flooding	Adjacent to Order Limits
Blankney Dyke	Drain/ditch, calcareous grassland, arable, tussocky vegetation, Steep slopes	55m north-east
Bloxholm Wood	Semi-natural woodland, bracken, scattered/dense scrub, ditch	Adjacent to Order Limits
Boothby Graffoe Road Verge	Calcareous grassland, bare ground, south facing slopes	1.8km north
Gorse Hill Lane Verges	Calcareous grassland	Partially within Order Limits

Site name	Reason for designation	Approximate distance (km) and direction from survey area
Gorse Lane	Unimproved calcareous grassland, woodland, dense scrub, bracken, tussocky vegetation, species-rich hedgerows	Adjacent to Order Limits
Green Man Lane	Calcareous grassland	945m north-east
High Dike, Long Lane to Navenby Verges	Calcareous grassland	1.4km west
Long Wood, Blankney	Semi-natural woodland, unimproved neutral grassland	530m west
Navenby, Green Man Road Verges	Calcareous grassland	627m north
Navenby Heath Road Verges	Calcareous grassland	Partially within Order Limits
Scopwick Heath Old Quarry	Unimproved calcareous grassland, plantation woodland, planted specimen trees, tussocky vegetation, bare ground, rock outcrops, steep slopes, south-facing slopes, hummocky ground	1km north-west
St John the Baptist Churchyard, Temple Bruer	Unimproved and semi-improved calcareous grassland	970m west
Temple Road Verges, Welbourn to Brauncewell	Calcareous grassland	Partially within Order Limits
Wellingore Heath Road Verges	Calcareous grassland	1.4km west

4.1.6. There are also two non-statutory local geological sites (LGS) within 2km of the Order Limits. The geological sites present within the study area are listed in **Table 5** along with their proximity to the Site. Citations for these sites are included in **Appendix 3** of this report and their locations are also shown on **Figure 3** of this report.

Table 5 Non-statutory local geological sites within 2km of the Order Limits

Site name	Approximate distance (km) and direction from the Site
Brauncewell Quarry	Adjacent to Order Limits
Longwood Quarry, Blankney	50m west
Metheringham Heath Quarry	1.8km north-west

Other notable sites

4.1.7. There is one area of ancient woodland within 2km of the Order Limits, namely Long Wood which is approximately 640m west of the Order Limits.

Informal strategies to identify ecologically desirable areas

4.1.8. The Site is not within any national priority focus or nature improvement areas.

4.1.9. The site lies partially within a Network Enhancement Zone 1 and a Network Expansion Zone, for primary habitat Lowland calcareous grassland.

4.1.10. A 'Network Enhancement Zone 1' is 'land connecting existing patches of primary and associated habitats, which is likely to be suitable for creation of the primary habitat. Factors affecting suitability include proximity to primary habitat'.

4.2. Plants and habitats

4.2.1. Notable species records, including plants, which have been recorded less than 20 years ago, are listed in **Appendix 3** of this report.

Plants and Fungi

4.2.2. The background data search returned one record of fungi recorded between 2003-2024 within 2km of the survey area – sandy stiltball (*Battarrea phalloides*), which was recorded in Bloxholm Wood. This species is listed in Schedule 8 of the Wildlife and Countryside Act 1981 **[Ref-20]**, which makes it illegal to either pick or destroy it.

4.2.3. The background data search returned one fern record – water fern (*Azolla filiculoides*) to the south of Kirkby Green. This plant is listed on Schedule 9 of the UK Wildlife & Countryside Act as an invasive non-native species.

4.2.4. The background data search returned 18 records of three species of priority native flowering plant species within 2km of the survey area, namely:

- 16 records of bluebell (*Hyacinthoides non-scripta*) – locations included Overton's Wood, Green Man Wood, Moor Wood, Metheringham Barff Woodland, and Bloxholm Wood. This species is listed in Schedule 8 of the Wildlife and Countryside Act 1981 **[Ref-20]**;

- one record of purple milk vetch (*Astragalus danicus*) from Metheringham Heath Road Verges. This species is listed under Section 41 of the Natural Environment and Rural Communities Act 2006; and
- one record of basil thyme (*Clinopodium acinos*) from Digby, which is also listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

4.2.5. An arboricultural survey by RSK Biocensus (2023d) **[Ref-21]** identified one veteran tree within the Order Limits, just north of Scopwick (Grid Reference: TF07385863). However this tree is located at least 280m from proposed built development so is not anticipated to be affected by works. The tree is referred to as 'T124' and details are shown in the Arboricultural Impact Assessment report, **ES Volume 1, Appendix 7.12: Arboricultural Impact Assessment [EN010149/APP/6.3]**.

4.2.6. The background data search returned 35 records of non-native flowering plants species within 2km of the survey area, namely:

- 13 records of buddleia (*Buddleja davidii*) – locations include Digby Gorse and Scopwick;
- two records of Russian vine (*Fallopia baldschuanica*) from Gorse Hill Lane and Scopwick;
- two records of winter heliotrope (*Petasites fragrans*) from Scopwick and Ruskington;
- one record of least duckweed (*Lemna minuta*) from Blankney Brick Pit; and
- one record of false acacia (*Robinia pseudoacacia*) from Blankney.

4.2.7. Records of non-native species listed under Schedule 9 of the Wildlife and Countryside Act 1981**[Ref- 20]** include:

- Four records of variegated yellow archangel (*Lamiastrum galeobdolon subsp. Argentatum*) from Metheringham, Scopwick, and Navenby;
- Three records of giant hogweed (*Heracleum mantegazzianum*) from Gorse Hill Lane;
- two records of wall cotoneaster (*Cotoneaster horizontalis*) from Digby and Metheringham.
- 2 records of montbretia (Crocosmia pottsii x aurea = C. x crocosmiiflora);
- 1 record of Canadian waterweed (*Elodea canadensis*) from Digby Gorse; and
- 1 record of rhododendron (*Rhododendron ponticum*) – no location was given.

4.2.8. No invasive non-native species were identified during the PEA survey.

Habitats

4.2.9. The results of the UK Habitat (UKHabs) survey are shown on **Figure 4** of this report, which also 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 4** of this report and a short description is given in this section.

Lowland calcareous grassland – g2a

4.2.10. Grassland road verges alongside the A15 (as noted in Target Note (TN) 1), Navenby Heath Road, and farm tracks along the southern and western boundaries are designated as Local Wildlife Sites for calcareous grassland. Lowland calcareous grassland is a Priority habitat.

4.2.11. It was not possible to carry out a detailed botanical survey of these grassland verges during the PEA survey to determine whether they qualify as lowland calcareous grassland priority habitat due to road safety concerns and because the PEA survey in this area was undertaken in November which is a sub-optimal time of year for botanical survey as herbs are not as abundant or may not be visible.

4.2.12. Further surveys of this habitat are recommended to inform the baseline, to be undertaken at an optimal time of year, between May to August.

Other neutral grassland – g3c

4.2.13. Uncultivated margins of neutral grassland varying between 0.5-1.5m wide line the perimeter of most of the fields within the Site (as noted in TN2). All of these margins were species-poor with fewer than 10 species per m^2.

4.2.14. They were frequently dominated by species typically associated with high levels of soil fertility including cock's-foot (*Dactylis glomerata*), crested dog's-tail (*Cynosurus cristatus*), false oat grass (*Arrhenatherum elatius*), red fescue (*Festuca rubra*), tall fescue (*Schedonorus arundinaceus*), barren brome (*Anisantha sterilis*), perennial rye grass (*Lolium perenne*), common bent (*Agrostis capillaris*), rough meadowgrass (*Poa trivialis*), and Yorkshire-fog (*Holcus lanatus*).

4.2.15. Herb species present within these areas (species varied between areas) included colt's-foot (*Tussilago farfara*), common bird's-foot-trefoil (*Lotus corniculatus*), creeping thistle (*Cirsium arvense*), marsh thistle (*Cirsium palustre*), meadow buttercup (*Ranunculus acris*), mouse-ear hawkweed (*Pilosella officinarum*), shepherd's purse (Capsella bursa-pastoris), cuckoo flower (*Cardamine pratensis*), dandelion (*Taraxacum officinale agg.)*, pineapple weed (*Matricaria discoidea*), sun spurge (*Euphorbia helioscopia)*, ground ivy (*Glechoma hederacea*), hogweed (*Heracleum sphondylium*), cow parsley (*Anthriscus sylvestris*), ribwort plantain (*Plantago lanceolata*), yarrow (*Achillea millefolium*), nettle (*Urtica dioica*), scarlet pimpernel (*Anagallis arvensis*), cleavers (*Galium aparine*), spear thistle (*Cirsium vulgare*), lesser celandine (*Ficaria verna*), broad leaved dock (*Rumex obtusifolius*), teasel (*Dipsacus fullonum*), white dead nettle (*Lamium album*), groundsel (*Senecio vulgaris*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), and daisy (*Bellis perennis*).

Modified grassland – g4

4.2.16. Many of the fields within the Site comprised species-poor modified neutral grassland comprising perennial ryegrass, timothy (*Phleum pratense*), cock's-foot, Yorkshire fog, annual meadow grass (*Poa annua*), white clover, daisy, nettle, and broad-leaved dock (*Rumex obtusifolius*).

4.2.17. The sward height was long in the majority of the fields though fields in the southwest of the Site, to the west of the A15, were in the process of being cut at the time of the survey (as noted in TN3).

Other lowland mixed deciduous woodland – w1f7

4.2.18. The Site borders Bloxham Wood, a Lincolnshire Wildlife Trust reserve and LWS (TN4). The woodland is predominately comprised of mature ash (*Fraxinus excelsior*), horse chestnut (*Aesculus hippocastanum*), beech (*Fagus sylvatica*), and sycamore with herb species including bluebell (*Hyacinthoides non-scripta*), nettle, cleavers, early purple orchid (*Orchis mascula*), and bugle (*Ajuga reptans*).

4.2.19. There are several small areas of mixed deciduous woodland within the Site, the majority of which appear to be relatively recently established (e.g. TN5). They are generally dominated by mature pedunculate oak (*Quercus robur*) or ash, with sycamore (*Acer pseudoplatanus*), elder (*Sambucus nigra*), beech, crack willow (*Salix fragilis*), goat willow (*Salix caprea*), and dogwood (*Cornus sanguinea*) also present within the canopy. The understory comprises dense nettle and bramble (*Rubus fruticosus*), with young holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), and blackthorn (*Prunus spinosa*).

Line of trees – w1g6

4.2.20. Lines of trees occur alongside several of the roads and tracks within the Site, including the line of mature beech trees along the road leading from the A15 to Brauncewell church (TN6).

4.2.21. An outgrown hedgerow borders the north-eastern boundary to the south of Bloxholm Wood (TN7). It is comprised of ash, field maple (*Acer campestre*), hawthorn, and blackthorn with dense bramble, dog rose (*Rosa canina*), and ivy.

Other woodland; mixed; mainly broadleaved - w1h5

4.2.22. There are several plantation woodlands within or adjacent to the Site, likely planted as cover for game as many of them contain pheasant rearing pens (TN8). These are primarily broadleaved woodland with some areas of Scots pine (*Pinus sylvestris*) plantation. Broadleaved species including oak, sycamore, ash, willow, and elder are present within the canopy and they are frequently surrounded by blackthorn and hawthorn. The understory is typically dense nettle and bramble.

Other woodland; mixed; mainly conifer - w1h6

4.2.23. A small conifer plantation is located to the north of Scopwick (TN9). It is primarily comprised of Scots pine with occasional ash and sycamore, and blackthorn and hawthorn within the understorey.

Hedgerows - h2a

4.2.24. Hedgerows form the boundaries of the majority of the fields within the Site and border many of the roads and lanes (TN10).

4.2.25. Most were relatively species-poor and 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. Most appear to have been flailed within the last two or three years – none of the hedgerows have been laid.

Mixed scrub - h3h

4.2.26. Small areas of mixed scrub are present in several locations, such as around ponds (e.g. TN11) in the centre of fields. These areas of scrub comprised several woody species including hawthorn, blackthorn, elder, ash, wild privet (*Ligustrum vulgare*), bramble, and infrequently common gorse (*Ulex Europaeus*) and wild cherry (*Prunus avium*).

Arable margins sown with wildflowers or a pollen and nectar mix - c1a6

4.2.27. The margin between three fields to the south of the Site (TN12) had been sown with a pollen and nectar mix.

4.2.28. Species present included wild radish (*Raphanus raphanistrum*), sun spurge, common vetch (*Vicia sativa*), wild mustard (*Sinapis arvensis*), purple tansy (*Phacelia tanacetifolia*), small bugloss (*Anchusa arvensis*), white campion (*Silene latifolia*), cock's foot, timothy, red fescue, crested dog's tail, common stork's bill (*Erodium cicutarium*), common ramping fumitory (*Fumaria muralis ssp. Neglecta*), and smooth tare (*Vicia tetrasperma*).

4.2.29. Arable field margins are a Priority Habitat. Further surveys of this habitat are recommended to inform the baseline, to be undertaken at an optimal time of year between May to August.

Rye-grass and clover ley - c1b5

4.2.30. Three fields in the west of the Site (TN13) were comprised of temporary sown grass leys with a uniform length sward of poor species richness dominated by fast growing grasses, mainly perennial ryegrass, with a few scattered forbs including ribwort plantain, Field Speedwell (*Veronica agrestis*) and Sow Thistle (*Sonchus sp.*).

Legume rich ley - c1b6

4.2.31. A number of fields (TN14) had been sown with legumes, including alfalfa (*Medicago sativa*).

Cereal crops - c1c

4.2.32. Many of the fields within the survey area (TN15) had been planted with cereal crops including maize (*Zea mays*), winter wheat, and barley (*Hordeum vulgare*).

Non cereal crops - c1d

4.2.33. The remaining fields comprised a winter Brassica cover crop, recently harvested sugar beet (*Beta vulgaris subsp. vulgaris (var. saccharifera*)) or had recently been ploughed (e.g. TN16).

Built up areas and gardens - u1

4.2.34. The Order Limits includes a small section of pavement, grass verge, and hedgerow within a garden in Scopwick, at the junction of the B1191 and B1188 (TN17).

Sealed surface - u1b

4.2.35. Small areas of hard standing are located close to the entrance to some of the fields and adjacent to agricultural buildings (TN18) and are used as storage or parking areas.

Buildings - u1b5

4.2.36. A barn (TN19) constructed of bricks and corrugated metal is located to the south of Heath Road and is 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.

Standing open water - r1

4.2.37. There are four ponds within the Site (TN20). These are described in greater detail in **Appendix 5** of this report.

Other rivers and streams r2b

4.2.38. Streams and ditches run along the boundaries of a number of the fields, particularly in the north of the survey area and around Brauncewell (TN21). Many were dry during the survey or held very shallow water. Species present included floating sweet grass (*Glyceria fluitans*), fools 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.

4.3. Protected and notable animals

4.3.1. The background data search returned 9,070 records of 144 species (including plants) recorded between 2004 and 2023 within 2km of the survey area boundary (see **Appendix 2** for notable species records). Noteworthy species include species of principal importance that are listed under Section 41 of NERC Act 2006. **[Ref-13].**

4.3.2. These included 204 records of invertebrates, one record of fish, 25 records of amphibians, 15 records of reptiles, 7,646 records of birds, 218 records of bats, 12 records of water vole, 11 records of otter, 15 records of badger, and 868 records of other mammal species.

4.3.3. **Figure 2** of this report 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 4** of this report.

Invertebrates

4.3.4. The background data search returned 204 records of 18 invertebrate species within 2km of the survey area.

4.3.5. These included 55 records of the non-native shrimps *Crangonyx pseudogracilis* and *Crangonyx pseudogracilis/floridanus* – only one record included a location, Springwell Brook.

4.3.6. Records also included 145 records of 15 lepidoptera (butterflies and moths) species including small heath (*Coenonympha pamphilus*) in Scopwick and RAF Digby, white-letter hairstreak (*Satyrium w-album*) in Bloxholm Wood, and brown hairstreak (*Thecla betulae*). Four records of one hymenoptera species (wasps, bees etc) were included in the background data search – large garden bumblebee (*Bombus ruderatus*) in Navenby.

4.3.7. Within the survey area, many of 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.

4.3.8. Habitats of particular value for invertebrates include the arable field margins, hedgerows, woodland edges, ditches, and ponds. There were also several fields onsite which had been planted with temporary leys rich with legumes, offering additional habitat for pollinating insects. The margin of one of the fields in the west of the Site (TN12) had been sown with a pollen and nectar mix, presumably to encourage invertebrates. The margins of the majority of the fields within the Site consisted of species-poor neutral grassland.

4.3.9. There are several Local Wildlife Sites (LWSs) either within the Site or on the boundaries (see **Section 3.1**). The majority of these LWSs have been designated for their calcareous grassland communities which may be capable of supporting more varied invertebrate communities. However, the Proposed Development design will seek to retain these areas as well as habitat of value listed above, it is considered that further terrestrial invertebrate surveys will not be required.

Fish

4.3.10. The background data search returned one record of European eel (*Anguilla anguilla*) within 2km of the survey area. No other records of fish were included in the background data search.

4.3.11. Most ditches across the survey area were dry. The ponds and watercourses within the survey area are small and of relatively poor quality, though they appear from maps to potentially connect with watercourses that are tributaries of the River Witham and River Slea. If works have the potential to adversely affect eels due to habitat loss or degradation by creating temporary or permanent barriers to dispersal, further surveys would be required to inform mitigation.

Amphibians

4.3.12. The background data search returned the following records of four amphibian species within 2km of the survey area:

- Nine records of great crested newt - locations included Scopwick and Digby;
- One record of smooth newt (*Lissotriton vulgaris*) from Scopwick;
- Five records of common toad (*Bufo bufo*) from Cranwell, Evans Dyke, and Wellingore; and
- Ten records of common frog (*Rana temporaria*) from Bloxholm Wood, Metheringham, Cranwell, and Navenby.

4.3.13. There are four ponds within the Order Limits and a further 10 within the survey area. These are described in greater detail in **Appendix 5** of this report and their locations are shown on **Figure 5** of this report.

4.3.14. HSI surveys were undertaken during the PEA surveys and eDNA surveys were undertaken in June 2022. A summary of the HSI and eDNA results is provided in **Table 6**, with the full details given in **Appendix 5** of this report.

Table 6 Summary of Habitat Suitability Index survey results

Waterbody number	HSI score	Pond suitability	eDNA survey result
Within Order Limits			
P1	0.67	Average	Negative
P2	0.66	Average	Negative
P3	0.63	Average	Negative
P4	0.74	Good	Negative
Outside Order Limits			
P5	0.43	Poor	Not sampled - dry
P6	0.51	Below average	Negative
P7	0.72	Good	Negative
P8	0.41	Poor	Negative
P9	0.43	Poor	Not sampled - dry
P10	0.78	Good	Indeterminate
P11	0.53	Below average	Negative
P12	0.50	Below average	Not sampled – too shallow

Waterbody number	HSI score	Pond suitability	eDNA survey result
P13	0.56	Below average	Negative
P14	0.52	Below average	Indeterminate
P15	0.52	Below average	Negative

4.3.15. The eDNA survey did not include four ponds – P5, P9, and P12 – which were too shallow to sample and therefore considered unlikely to be suitable for breeding newts.

4.3.16. Ponds with indeterminate results (due to degradation of samples) were located close to suitable ponds which tested negative. As there were no barriers to dispersal for great crested newts between these ponds, those ponds which tested indeterminate were also considered likely to be negative.

4.3.17. Great crested newt are therefore considered likely absent from the Site.

Reptiles

4.3.18. The background data search returned 14 records of two reptile species within 2 km of the survey area – seven records of grass snake (*Natrix helvetica*), two of which were from Scopwick, and nine records of common lizard (*Zootoca vivipara*) from locations including Metheringham, Navenby, and Scopwick Heath.

4.3.19. The Site primarily comprises frequently disturbed and intensively managed arable cropland and therefore is generally of poor suitability for reptiles. However, connecting areas of woodland, scrub, hedgerow bases, rough grassland and spoil heaps/log piles could support low numbers of common reptiles. In particular, the wider strips of tussocky neutral grassland around field near Brauncewell (TN2) are likely to be suitable for reptiles. Furthermore, the woodland edges and dry-stone walls lining several of the fields and tracks within the Site may offer basking and hibernation opportunities.

4.3.20. Reptiles may be present within the Site, however they will mainly be closely associated with boundary features and are likely to only be present at a relatively low population density. Therefore it is considered that no further surveys of reptiles are required, but measures must be taken during works to avoid injuring/killing any individuals that may be present within the works area.

Birds

4.3.21. The background data search returned 7,646 records of 75 bird species within 2 km of the survey area. The most frequently recorded locations included Digby/RAF Digby (1,331 records), Scopwick (1,197 records), Metheringham (1,137 records), and Dorrington (1,126 records).

4.3.22. Records included an assemblage of species frequently associated with farmland habitats such as skylark (*Alauda arvensis*), quail (*Coturnix coturnix*), corn bunting (*Emberiza calandra*), yellowhammer (*Emberiza citrinella*), linnet (*Linaria cannabina*), yellow wagtail (*Motacilla flava*), tree sparrow (*Passer montanus*), grey partridge (*Perdix*

perdix), turtle dove (*Streptopelia turtur*), starling (*Sturnus vulgaris*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*), barn owl (*Tyto alba*) and lapwing (*Vanellus vanellus*).

4.3.23. Ten species are listed on Annex 1 of the Birds Directive **[Ref-22]:** whooper swan (*Cygnus cygnus*), red kite (*Milvus milvus*), marsh harrier (*Circus aeruginosus*), hen harrier (*Circus cyaneus*), Montagu's harrier (*Circus pygargus*), osprey (*Pandion haliaetus*), Mediterannean gull (*Larus melanocephalus*), merlin (*Falco columbarius*), peregrine (*Falco peregrinus*), and woodlark (*Lullula arborea*).

4.3.24. Fifteen species are included in Schedule 1 of the Wildlife and Countryside Act 1981**[Ref- 21]** (some species are included on more than one list): whooper swan, quail, red kite, hen harrier, marsh harrier, Montagu's harrier, osprey, Mediterranean gull, barn owl, merlin, hobby (*Falco subbuteo*), peregrine, woodlark, fieldfare, and redwing.

4.3.25. Nineteen are listed in Section 41 of the NERC Act 2006 **[Ref-13]** : grey partridge, hen harrier, Montagu's harrier, lapwing, curlew, turtle dove, cuckoo (*Cuculus canorus*), woodlark, grasshopper warbler (*Locustella naevia*), starling, song thrush (*Turdus philomelos*), spotted flycatcher (*Muscicapa striata*), house sparrow (*Passer domesticus*), tree sparrow, yellow wagtail, bullfinch (*Pyrrhula pyrrhula*), yellowhammer, reed bunting (*Emberiza schoeniclus*).

4.3.26. 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, grasshopper warbler, starling, fieldfare, spotted flycatcher, house sparrow, tree sparrow, yellow wagtail, linnet, lesser redpoll (*Acanthis cabaret*), yellow hammer, and corn bunting.

4.3.27. Nine are included on the amber list of birds of conservation concern: whooper swan, quail, marsh harrier, osprey, snipe (*Gallinago gallinago*), song thrush, redwing, bullfinch, and reed bunting.

4.3.28. 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 (TN22). A field adjacent to the survey area held 27 lapwings and chicks (TN23). Singing skylarks were also observed in the majority of the modified grassland and cereal crop fields.

4.3.29. Of the species identified through the background data search, the arable and grassland fields within the survey area may also support species such as quail, grey partridge, curlew, yellow wagtail, and yellowhammer. Large stick nests likely associated with corvid species were noted within the canopy of several hedgerow trees and also in some cases within internal cavities in the trees themselves.

4.3.30. Dry stone walls along field boundaries where partially overgrown by vegetation offer potentially suitable sheltered nesting cavities for species such as robin (*Erithacus rubecula*) and wren (*Troglodytes troglodytes*).

4.3.31. Red kite was regularly observed commuting and foraging over the survey area, though no nests or nesting behaviour was observed in any of the woodlands or trees within the survey area.

4.3.32. [redacted].

4.3.33. 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.

4.3.34. 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).

4.3.35. 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.

4.3.36. The woodlands, hedgerows, and arable fields provide suitable nesting habitat for a range of protected and notable bird species. Therefore it is recommended that a breeding bird survey is carried out to inform the baseline, with at least five visits to be undertaken between March and July.

4.3.37. The arable fields and woodlands also provide suitable foraging and sheltering habitat for migratory and wintering birds. A wintering bird survey should be undertaken at the Site between November and March.

4.3.38. Agricultural buildings within and adject to the Site have potential to be used by nesting barn owl. These buildings should be surveyed internally for the presence of barn owl by a suitably experienced and licensed ecologist.

Bats

4.3.39. The background data search returned 218 records of 13 bat species or species groups within 2km of the survey area, including:

- 105 records of unidentified bats – including 12 records of roosts in locations such as Navenby, Scopwick, Temple Bruer, Dunston, Kirkby Green, Boothby Graffoe, Metheringham, Wellingore, and Rowston;
- 45 records of pipistrelle species (*Pipistrellus* sp.) – including 26 records of roosts in Dunston, Martin, Boothby Graffoe, Kirkby Green, Wellingore, Navenby, Cranwell, Dorrington, Metheringham, and Scopwick;
- [redacted]
- 14 records of common pipistrelle (*Pipistrellus pipistrellus*) – including six records of roosts in Navenby, Dunston, and Temple Bruer;

- 11 records of soprano pipistrelle (*Pipistrellus pygmaeus*) – including seven records of roosts in Navenby and Metheringham;
- [redacted]
- 5 records of noctule bat (*Nyctalus noctule*);
- 2 records of Natterer's bat (*Myotis nattereri*) – including two records of roosts in Navenby;
- 1 record of Myotis bat (*Myotis* sp.);
- One record of Daubenton's bat (*Myotis daubentoniid*);
- One record of Whiskered/Brandt's bat (*Myotis mystacinus/brandtii*); and
- One record of Nathusius's pipistrelle (*Pipistrellus nathusii*).

4.3.40. The majority of records were from Metheringham (52 records), Scopwick (24 records) and Navenby (21 records).

4.3.41. 36 individual and groups of trees were identified with High suitability (23 trees) to Moderate (14 trees) suitability for roosting bats within the Order Limits. Their locations are shown on **Figure 5** of this report.

4.3.42. [redacted] of the survey area [redacted]) could not be surveyed internally though it may have had suitability [redacted] area, though not within the Order Limits [redacted] was constructed of [redacted]. It has suitability to be used as [redacted], though is unlikely to be used by large numbers. [redacted] is also [redacted], though may be used as a [redacted].

4.3.43. 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. The area close to Brauncewell Church has higher suitability due to the presence of old buildings and veteran trees.

4.3.44. Bat surveys should be conducted at the Site in order to identify the species present, assess relative activity levels in various parts of the Site, and assess their relative abundance. Surveys should cover the three active seasons of spring (April – May), summer (June – August), and Autumn (September - October) by deploying static bat detectors at key locations within the Order Limits during these periods.

Water vole and otter

4.3.45. The background data search returned 12 records of water vole within 2km of the survey area – locations where they were recorded include Blankney Delphside Drain, Metheringham Delphside, Evans Dyke, Springwell Brook, and Scopwick.

4.3.46. 11 records were returned of otter – no locations were given.

4.3.47. Several of the streams and ditches within the survey area provide suitable habitat for water voles, though the majority were shallow or did not hold water at the time of survey.

4.3.48. 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 within the survey area that may be used by breeding individuals or may contain holts, though the watercourses within the Site connect to Dorrington Dike and the River Witham which may be used by otter.

4.3.49. The Proposed Development 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.

Badger

4.3.50. [redacted]. Two records were of badger setts.

4.3.51. [redacted]. The exact location of the sett is not provided for confidentiality reasons.

4.3.52. [redacted]. The detailed results of badger surveys and locations of setts are confidential and therefore presented separately in **ES Volume 3, Appendix 7.10: Badger Survey - Confidential [EN010149/APP/6.3].**

4.3.53. A badger survey of the Site should be conducted prior to commencement of works to identify any further signs of badger activity and any additional setts that may be present within the Site.

Other mammals

4.3.54. The background data search returned 906 records of eight other mammal species within 2km of the survey area, namely:

- 452 records of brown hare (*Lepus europaeus*);
- 179 records of hedgehog (*Erinaceus europaeus*);
- 114 records of grey squirrel (*Sciurus carolinensis*);
- 108 records of muntjac deer (*Muntiacus reevesi*);
- 10 records of feral ferret (*Mustela putorius subsp. Furo*);
- Two records of polecat (*Mustela putorius*);

- Two records of mink (*Neovison vison*); and
- One record of edible dormouse (*Glis glis*).

4.3.55. Brown hare were seen in the majority of the fields within the survey area during the phase 1 surveys, with a peak count of 14 individuals recorded in a field to the south of Cuckoo Lane. Leverets were frequently seen during surveys conducted in spring 2022. Roe deer (*Capreolus capreolus*) were also observed in many of the fields, particularly close to Scopwick. Multiple rabbit (*Oryctolagus cuniculus*) burrows were recorded throughout the Site.

4.3.56. Habitats within the survey area, including log piles, scrub, woodland, and grassland were considered to be suitable for hedgehog.

4.3.57. Hedgerows within the Site provide limited foraging opportunities for dormice (*Muscardinus avellanarius*), as they were mostly species-poor and as there are only a few small, scattered pockets of woodland to supplement. The background data search returned no records of dormouse within 2km of the Site and there are very few records from Lincolnshire. Dormice are therefore presumed to be absent from the survey area and no further surveys are recommended.

5. Evaluation

5.1. Statutory designated sites

5.1.1. There are no international statutory designated sites within 10km of the survey area. The closest internationally statutory designated site is 'The Wash' Ramsar/SPA/SAC which is located approximately 35km from the Site. Although it is potentially hydrologically linked to the Site via a tributary of the River Witham, the Wash is not expected to be hydrologically affected by works as it is not designated for migratory fish species.

5.1.2. The Wash is designated for wading birds and estuarine habitats however, being c.35km from the Site, the habitats and bird populations are not expected to be affected by works due to distance and nature of the works.

5.1.3. Metheringham Heath Quarry SSSI is located approximately 1.9km to the northwest of the survey area boundary. This is a geological site, therefore no impacts are anticipated on this site as a result of the Proposed Development.

5.1.4. The only SSSI Impact Risk Zone, which covers a small part of the western edge of the Site, is for High Dyke SSSI 3.6km southwest of the Site. However none of the developments which are considered of concern for air pollution (aviation, livestock and poultry units, slurry lagoons) relate to the Proposed Development. The SSSI is not expected to be affected by works due to distance and nature of the works.

5.2. Non-statutory designated sites

5.2.1. There are 17 Local Wildlife Sites identified within 2km of the Site. Within the Order Limits are A15, Green Man Road to Cuckoo Lane 2, A15, Slate House Farm to Dunsby Pit Plantation 1; Gorse Hill Lane Verges, Navenby Heath Road Verges, and Temple Road Verges, Welbourn to Brauncewell 2.

5.2.2. Adjacent to the Order Limits are Blankney Brick Pit LWS; Bloxholm Wood LWS/Lincolnshire Wildlife Trust reserve; Gorse Lane LWS, Gorse Hill Lane Verges LWS, Temple Road Verges, and Welbourn to Brauncewell 2 LWS. Brauncewell Quarry geological site is also adjacent to the Order Limits.

5.2.3. Assessment of potential impacts to these LWS sites and appropriate safeguards has been undertaken in **ES Volume 1, Chapter 7: Biodiversity [EN010149/APP/6.1].** Due to the proximity of these sites to the Order Limits, it is recommended that the Local Planning Authority (LPA) ecologist is consulted with regard to potential impacts on these sites arising as a result of the Proposed Development.

5.2.4. These sites could be enhanced through landscaping where the development site runs adjacent to them as part of achieving BNG within the Site.

5.2.5. Four of these LWSs could potentially be affected by proposed works, either by requiring sections removed for highways access or due to proximity of proposed internal access tracks. All of these four LWS's are road/track grassland verges designated as calcareous grassland. A further botanical survey of these sites should be

undertaken to provide baseline information on the ecological importance of these sections of verge, and to evaluate these areas using LWS qualifying criteria.

5.3. Plants and habitats

5.3.1. Priority habitats listed under Section 41 of the NERC Act 2006 **[Ref-13]** present included ponds, arable field margins, hedgerows, lowland mixed deciduous woodland, and lowland calcareous grassland. These habitats will be retained, and may be enhanced, as far as is possible within the design of the Proposed Development.

5.3.2. The majority of the Site comprises arable fields of low to moderate species-richness, within most plant species found within the Order Limits being common and/or widespread.

5.3.3. The Priority Habitats present within the Site - namely arable field margins, hedgerows and hedgerow trees, ponds and drains, and lowland mixed deciduous woodland - were also of low to moderate species-richness with the majority of plant species present being common and/or widespread. These habitats will be retained as far as is possible within the design of the Proposed Development.

5.3.4. Where it is not possible to avoid sections of hedgerows being removed for access tracks to fields, the width of hedgerow removal should be minimised - i.e. by reducing the width of the gap and possibly by siting the track within existing gaps within the hedgerow, and away from hedgerow trees.

5.3.5. Any hedgerow that is due to have sections removed (whether permanently or temporarily) should be subject to further survey to assess its ecological importance under the Hedgerows Regulations 1997 **[Ref-23],** as well as to help inform mitigation and enhancement.

5.3.6. The Site is mostly intensively farmed arable land although there may be potential for notable arable wildflowers (also known as ‘weeds’) in cultivated, untreated (without herbicide) field margins.

5.3.7. Further botanical surveys of the LWS lowland calcareous grassland (if anticipated to be impacted) and arable field margins should also be undertaken during the optimal time for botanical surveys.

5.3.8. No invasive species were identified during the survey.

5.4. Protected and other notable species

Invertebrates

5.4.1. The proposed working areas are comprised primarily of arable crop fields which are considered unlikely to support a particularly diverse assemblage of invertebrates. No further surveys for invertebrates are recommended, however perimeter habitats which offer the greatest suitability such as calcareous grassland road verges, rough grassland margins, scattered scrub, hedgerows, woodland edge habitats, ditches, and ponds should be retained and protected from damage where possible.

Fish

5.4.2. Several of the ditches within the Site are potentially hydrologically linked to tributaries of the Rivers Slea and Witham. During construction, consideration should be given to the potential risk of silt and pollution entering the river as a result of run off from construction areas. If any wet ditches are anticipated to be impacted then an aquatic habitat assessment should be undertaken to determine if fish or other aquatic species would be affected and mitigation required.

Amphibians

5.4.3. 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.

5.4.4. No ponds on Site are expected to be impacted be impacted by works.

5.4.5. It is not anticipated that highly suitable terrestrial habitat for common toad (*Bufo bufo*) or common frog (*Rana temporaria*) e.g. woodlands or species-rich grassland, will be affected by works.

Reptiles

5.4.6. The majority of the Site is comprised of arable fields that provide sub-optimal habitat for reptiles.

5.4.7. 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.

5.4.8. It is unlikely that reptiles are present on the site at a high density. Any that are present will be largely restricted to boundary habitats, outside of the main working areas. Further surveys to confirm the presence or likely absence of reptiles are therefore not considered necessary. However, all species of reptiles in the UK are afforded protection through domestic legislation and precautionary measures are required during construction to prevent the killing or injuring of any individuals.

5.4.9. It is not anticipated that highly suitable reptile habitat such as woodlands or species-rich grassland will be affected by works.

Birds

5.4.10. 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 protected and notable bird species, breeding bird species should be carried out between late March and mid-July.

5.4.11. The habitats within the survey area may also provide suitable roosting and foraging habitat for wintering birds. Wintering bird surveys should be undertaken between November and February.

Bats

5.4.12. Thirty-seven trees [redacted] moderate to high suitability for roosting bats. If any trees are to be removed, pruned, or otherwise disturbed by the Proposed Development, further surveys such as climbing surveys or bat emergence/re-entry surveys will be required to determine whether a roost is present.

5.4.13. The Site is considered to offer low to moderate value for foraging bats, with key areas being boundary features such as hedgerows, ditches, scrub, and woodland. Future lighting of the Site should aim to maintain dark corridors for bats to commute and forage along and between these important features. Reference should be made to the relevant guidance from the Institute of Lighting Professionals (ILP).

5.4.14. 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).

Water vole and otter

5.4.15. The ditches and streams within the Site offer suitable, albeit low, quality habitat for foraging and commuting otter whilst habitats adjacent to the Site may offer suitability for resting otter. The scheme design will enable an appropriate buffer to be maintained adjacent to water bodies and watercourses.

5.4.16. If any work will be taking place within a ditch or within 6 m of its banks, further water vole and otter surveys will be needed to determine their presence or likely absence.

Badger

5.4.17. [redacted] Although the setts identified did not appear to be recently used, they may be used infrequently or may become active again in future.

5.4.18. The larger setts identified [redacted]

5.4.19. The detailed results of badger surveys and locations of setts are confidential and therefore presented separately in **ES Volume 3, Appendix 7.10: Confidential Badger Survey [EN010149/APP/6.3].**

5.4.20. A repeat pre-construction badger survey should be completed within six months prior to the planned start date of construction. Ideally to improve the detection of field signs and any setts which may potentially have been missed, this should be completed during the winter months (November to March) when vegetation has died back making woodland areas and arable margins more accessible and easier to search.

Summary of further surveys recommended

5.4.21. The following surveys are recommended:

- Botanical surveys of arable field margins and LWS lowland calcareous grassland verges, to be undertaken at an optimal time of year (i.e. May to August);
- Breeding bird surveys of survey area, at least five visits to be carried out between late-March and mid-July;
- Wintering bird surveys of survey area, three or four visits to be carried out between November and February;
- Breeding barn owl surveys if any barn owls are anticipated to be disturbed by works (mid-June-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);
- Aquatic habitat assessment and riparian mammal surveys of suitable watercourses if the Proposed Development will result in impact to any watercourses;
- Targeted hedgerow surveys if any hedgerow removal is required – including important hedgerow assessment and to provide species list for replanting if to be re-instated; and
- A pre-construction update badger survey is recommended within six months of the commencement of the development to identify any new badger activity on and within 30m of the Site.

Enhancements

5.4.22. 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. Details of the Biodiversity Net Gain assessment, habitat creation and enhancement proposals are shown in the **oLEMP [EN010149/APP/7.9].**

6. References

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- **Ref- 2:** Chartered Institute of Ecology and Environmental Management. Available on line: CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. Second Edition. December 2017.
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- **Ref- 5:** Lincolnshire Biodiversity Action Plan 2011 – 2020 (Third edition). Lincolnshire Biodiversity Partnership. Available online: LincolnshireBAP-3rd-edition.pdf (nelincs.gov.uk)
- **Ref- 6:** Data.GOV.UK. Habitat Networks. Available online: https://www.data.gov.uk/dataset/c20a40c5-c975-43e1-9abd-d1257aa58432/natural-england-national-priority-focus-areas
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- **Ref- 9:** The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017. Available online: https://www.legislation.gov.uk/uksi/2017/1012
- **Ref-10**: Protection of Badgers Act 1992. Available online: https://www.legislation.gov.uk/ukpga/1992/51
- **Ref-11:** IUCN. IUCN Red List Categories and Criteria (version 3.1). Available online: [redacted]
- **Ref-12:** 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: 723-74
- **Ref-13:** The Natural Environment and Rural Communities (NERC) Act 2006 Available online: https://www.legislation.gov.uk/ukpga/2006/16
- **Ref-14:** Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020), UK Habitat Classification – Habitat Definitions V1.1. Available online: https://www.legislation.gov.uk/ukpga/2006/16 [Accessed August 2024]
- **Ref-15:** Stace, C.A. (2019), A New Flora of the British Isles (4th edition). C & M Floristics, Middlewich Green

- **Ref-16:** DEFRA (2024) The Statutory Metric: User Guide. Department for Environment, Food and Rural Affairs. Available online: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides
- **Ref-17:** 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.
- **Ref-18:** Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford.
- **Ref-19:** Collins, J. (2016), Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.
- **Ref-20:** The Wildlife and Countryside Act (WCA) (1981) Available online: https://www.legislation.gov.uk/ukpga/1981/69
- **Ref-21:** RSK Biocensus (2023d) Springwell Solar Farm: Stage 1, Preliminary Arboricultural Report. Rev01. RSK Biocensus. 2483650.
- **Ref-22:** Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009. Available online: https://www.legislation.gov.uk/eudr/2009/147
- **Ref-23:** The Hedgerows Regulations 1997. Available online: https://www.legislation.gov.uk/uksi/1997/1160/made

Figure 1 - Site and Survey Area

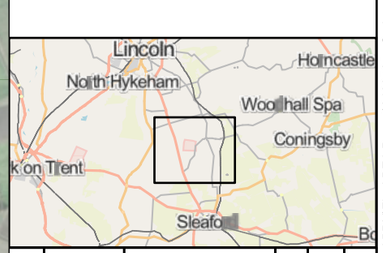
Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

500000 501000 502000 503000 504000 505000 506000 507000 508000 509000 510000

361000 360000 359000 358000 357000 356000 355000 354000 353000 352000

LEGEND:

- Order Limits
- Wider Survey Area
- Proposed Navenby Substation - No Access For Survey



Rev	Date	Description	Drn	Chk	App
01	NOV 2024	DCO SUBMISSION	RSK	RSK	EDF

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 3, APPENDIX 7.1: PRELIMINARY ECOLOGICAL APPRAISAL
REGULATION 5(2)(a)

TITLE:
FIGURE 1 SITE PLAN AND SURVEY AREA

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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Figure 2 - Survey Areas

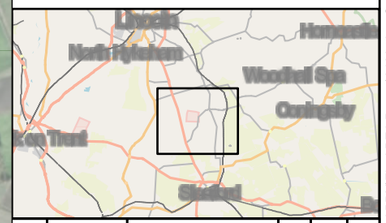
Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

500000 501000 502000 503000 504000 505000 506000 507000 508000 509000 510000

361000 360000 359000 358000 357000 356000 355000 354000 353000 352000

LEGEND:

- Main Survey Area
- Cable Corridor
- Northern Fields
- Four Fields
- Brauncewell
- Proposed Navenby Substation - No Access For Survey



Rev	Date	Description	Drn	Chk	App
01	NOV 2024	DCO SUBMISSION	RSK	RSK	EDF

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ENVIRONMENTAL STATEMENT
VOLUME 3, APPENDIX 7.1: PRELIMINARY ECOLOGICAL APPRAISAL
REGULATION 5(2)(a)

TITLE:
FIGURE 2 SURVEY AREAS

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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Scale: 1:35,000 @ A3

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Figure 3 - Local Wildlife Sites

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

497000 498000 499000 500000 501000 502000 503000 504000 505000 506000 507000 508000 509000 510000 511000 512000 513000

363000 362000 361000 360000 359000 358000 357000 356000 355000 354000 353000 352000 351000 350000

Metheringham Heath Quarry

Boothby Graffoe Road Verge

Navenby, Green Man Road Verges

Green Man Lane

A15, Green Man Road to Cuckoo Lane

Navenby Heath Road Verges

Gorse Lane

High Dike, Long Lane to Navenby Verges

Gorse Hill Lane Verges

Wellingore Heath Road Verges

St John the Baptist Churchyard, Temple Bruer

Temple Road Verges, Welbourn to Brauncewell

Blankney Brick Pit

Blankney Dyke

Long Wood, Blankney

Scopwick Heath Old Quarry

Longwood Quarry, Blankney

Bloxholm Wood

A15, Slate House Farm to Dunsby Pit Plantation

Brauncewell Quarry

LEGEND:

- Order Limits
- 2km Buffer
- Indicative Boundary of Local Wildlife Site (LWS)
- Indicative LGS Boundary

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VOLUME 3, APPENDIX 7.1: PRELIMINARY ECOLOGICAL APPRAISAL
REGULATION 5(2)(a)

TITLE:
FIGURE 3 LOCAL WILDLIFE SITES

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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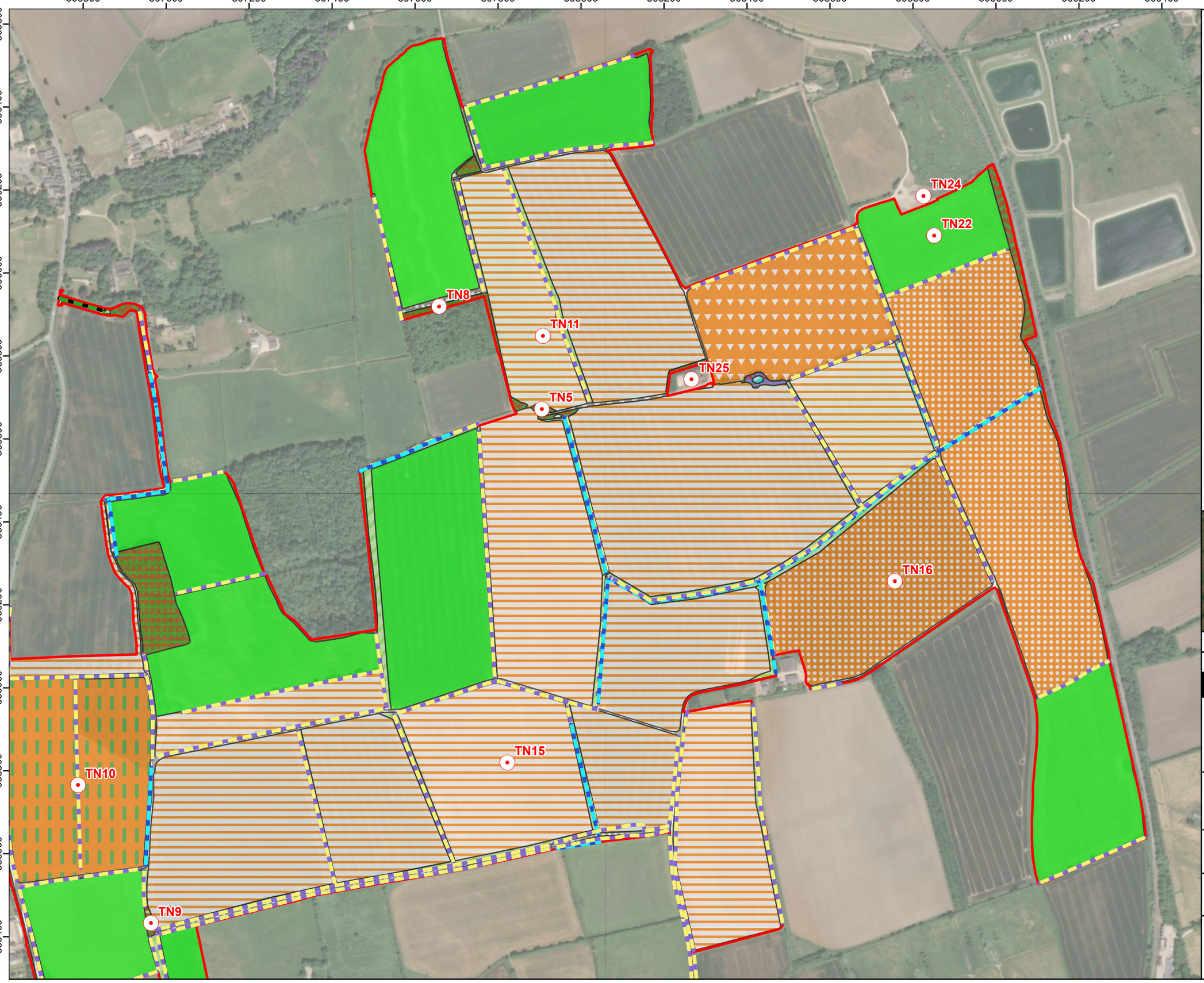
Figure 4 - UKHab Habitat Survey

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

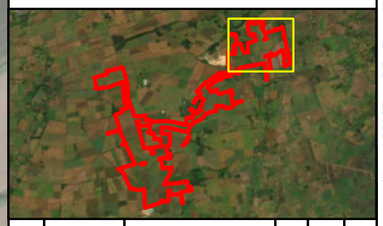


LEGEND:

- Order Limits

UKHab Classification

- Cereal Crops
- Non-cereal Crops
- Legume-rich Ley
- Winter stubble
- Neutral Grassland
- Other Neutral Grassland
- Modified Grassland
- Mixed Scrub
- Standing Open Water and Canals
- Other Standing Water
- Developed Land; Sealed Surface
- Artificial Unvegetated, Unsealed Surface
- Other Woodland; Mixed; Mainly Conifer
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Other Rivers and Streams
- Line of Trees
- Target Note



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ENVIRONMENTAL STATEMENT
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REGULATION 5(2)(a)

TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 1 OF 8

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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359400 359200 359000 358800 358600 358400 358200 358000 357800 357600 357400

TN10 TN15 TN9 TN23 TN17

LEGEND:

- Order Limits

UKHab Classification

- Cereal Crops
- Legume-rich Ley
- Neutral Grassland
- Other Neutral Grassland
- Modified Grassland
- Built-up Areas and Gardens
- Developed Land; Sealed Surface
- Artificial Unvegetated, Unsealed Surface
- Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Conifer
- Other Woodland; Mixed; Mainly Broadleaved
- Hedgerows
- Native Hedgerow
- Species-rich Native Hedgerow
- Non-native and Ornamental Hedgerow
- Other Rivers and Streams
- Target Note

Rev	Date	Description	Drn	Chk	App
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REGULATION 5(2)(a)

TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 2 OF 8

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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SCALE:1:8,000 @ A3

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357800 357600 357400 357200 357000 356800 356600 356400 356200 356000 355800

TN19

TN14

LEGEND:

- Order Limits

UKHab Classification

- Cereal Crops
- Legume-rich Ley
- Neutral Grassland
- Other Neutral Grassland
- Modified Grassland
- Other Standing Water
- Developed Land; Sealed Surface
- Buildings
- Other Broadleaved Woodland
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Other Rivers and Streams
- Ditch
- Target Note

Rev	Date	Description	Drn	Chk	App
01	NOV 2024	DCO SUBMISSION	RSK	RSK	EDF

Springwell Solar Farm

Springwell Solar Farm

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REGULATION 5(2)(a)

TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 3 OF 8

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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Metres

SCALE:1:8,000 @ A3

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356200 356000 355800 355600 355400 355200 355000 354800 354600 354400 354200

TN12

LEGEND:

- Order Limits

UKHab Classification

- Arable Field Margins Pollen and Nectar
- Cereal Crops
- Non-cereal Crops
- Legume-rich Ley
- Other Calcareous Grassland
- Neutral Grassland
- Other Neutral Grassland
- Modified Grassland
- Developed Land; Sealed Surface
- Buildings
- Artificial Unvegetated, Unsealed Surface
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Built Linear Features
- Target Note

Rev	Date	Description	Drn	Chk	App
01	NOV 2024	DCO SUBMISSION	RSK	RSK	EDF

Springwell Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 3, APPENDIX 7.1: PRELIMINARY ECOLOGICAL APPRAISAL
REGULATION 5(2)(a)

TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 4 OF 8

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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SCALE:1:8,000 @ A3

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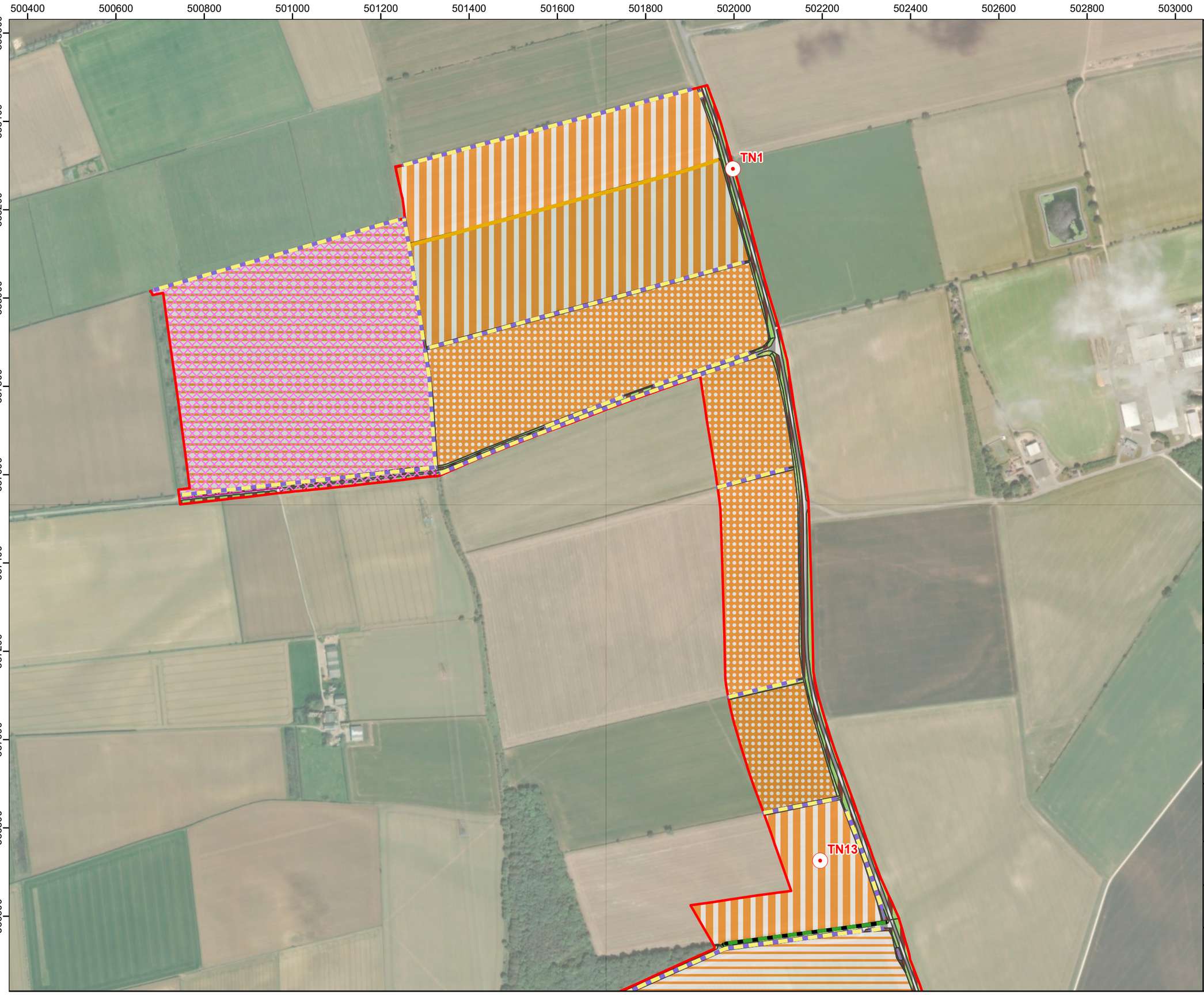

LEGEND:

- Order Limits
- No Access Area

UKHab Classification

- Cereal Crops
- Non-cereal Crops
- Temporary Grass and Clover Leys
- Upland Calcareous Grassland
- Other Calcareous Grassland
- Other Neutral Grassland
- Mixed Scrub
- Developed Land; Sealed Surface
- Native Hedgerow
- Built Linear Features
- Line of Trees
- Target Note

Rev	Date	Description	Drn	Chk	App
01	NOV 2024	DCO SUBMISSION	RSK	RSK	EDF

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
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REGULATION 5(2)(a)

TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 5 OF 8

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EN010149/APP/6.3

0 62.5 125 250
Metres
SCALE:1:8,000 @ A3

REV 01

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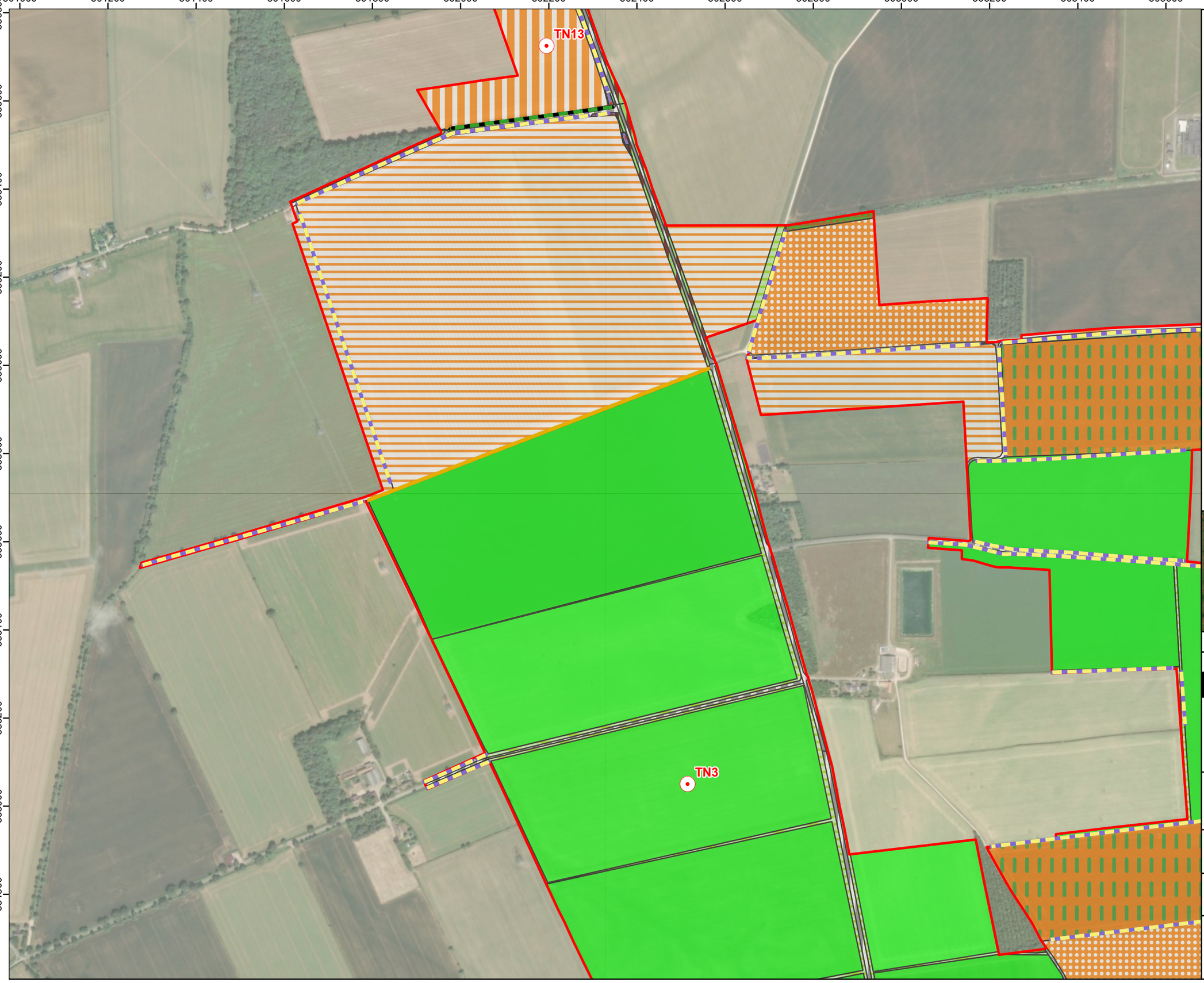

LEGEND:

- Order Limits

UKHab Classification

- Cereal Crops
- Non-cereal Crops
- Legume-rich Ley
- Temporary Grass and Clover Leys
- Other Calcareous Grassland
- Neutral Grassland
- Other Neutral Grassland
- Modified Grassland
- Mixed Scrub
- Developed Land; Sealed Surface
- Artificial Unvegetated, Unsealed Surface
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Built Linear Features
- Line of Trees
- Target Note

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FIGURE 4 UKHAB HABITAT SURVEY, PAGE 6 OF 8

PINS REFERENCE NUMBER:
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0 62.5 125 250
Metres

SCALE:1:8,000 @ A3

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355000 354800 354600 354400 354200 354000 353800 353600 353400 353200 353000

TN3

TN12

TN18

TN4

TN2

LEGEND:

- Order Limits

UKHab Classification

- Arable Field Margins Pollen and Nectar
- Cereal Crops
- Non-cereal Crops
- Legume-rich Ley
- Other Calcareous Grassland
- Other Neutral Grassland
- Modified Grassland
- Developed Land; Sealed Surface
- Artificial Unvegetated, Unsealed Surface
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Built Linear Features
- Line of Trees
- Target Note

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TITLE:
FIGURE 4 UKHAB HABITAT SURVEY, PAGE 7 OF 8

PINS REFERENCE NUMBER:
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Metres
SCALE:1:8,000 @ A3

REV 01

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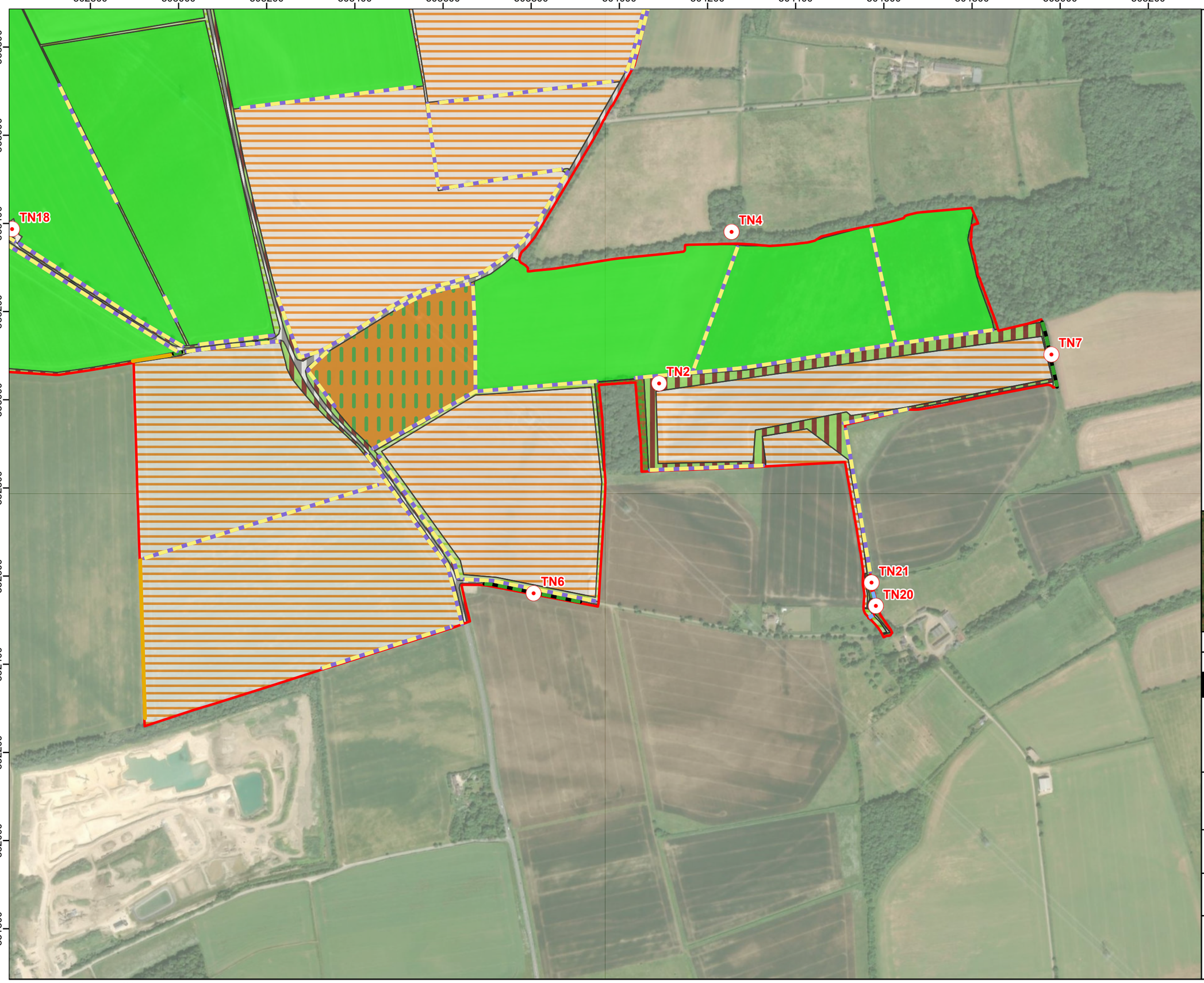
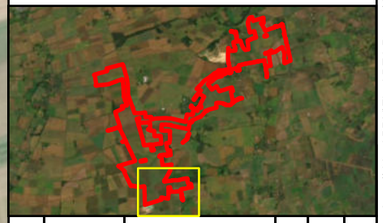


LEGEND:

- Order Limits

UKHab Classification

- Arable Field Margins Pollen and Nectar
- Cereal Crops
- Legume-rich Ley
- Other Calcareous Grassland
- Other Neutral Grassland
- Modified Grassland
- Standing Open Water and Canals
- Developed Land; Sealed Surface
- Other Lowland Mixed Deciduous Woodland
- Other Woodland; Mixed; Mainly Broadleaved
- Native Hedgerow
- Standing open water and canals
- Built Linear Features
- Line of Trees
- Target Note



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0 62.5 125 250
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SCALE:1:8,000 @ A3

REV 01

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Figure 5 - Ponds Surveyed and Ground Level Tree Assessment Locations

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

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

360600 360400 360200 360000 359800 359600 359400 359200 359000 358800 358600 358400

P1 P2 P3 P5 P6 P7 P8 P9 P10 P11 P12

LEGEND:

- Order Limits
- Pond Location

Tree Suitability

- High
- Moderate
- Low

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0 62.5 125 250
Metres
SCALE: 1:8,500 @ A3

REV 01

Path: C:\Users\rebekah.smyth\OneDrive - RSK Group\06 GIS - 2483765 - EDF Solar Springwell (aka Acre Lane)\03 - APRX\Final PEA Report\2483765 - Springwell Solar - Fig 5 - Pond and GLTA Locations.aprx[empty]

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359400 359200 359000 358800 358600 358400 358200 358000 357800 357600 357400

P11

LEGEND:

- Order Limits
- Pond Location

Tree Suitability

- High
- Moderate
- Low

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TITLE:
FIGURE 5 PONDS AND GROUND LEVEL TREE ASSESSMENT LOCATIONS, PAGE 2 OF 8

PINS REFERENCE NUMBER:
EN010149/APP/6.3

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Metres
SCALE: 1:8,000 @ A3

REV 01

Path: C:\Users\rebekah.smyth\OneDrive - RSK Group\06 GIS - 2483765 - EDF Solar Springwell (aka Acre Lane)\03 - APRX\Final PEA Report\2483765 - Springwell Solar - Fig 5 - Pond and GLTA Locations.aprx[empty]

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357800 357600 357400 357200 357000 356800 356600 356400 356200 356000 355800

P13

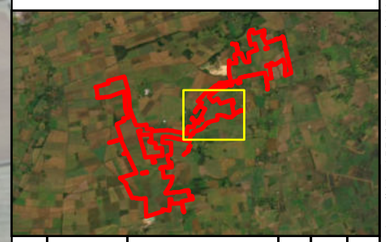
P14

LEGEND:

- Order Limits
- Pond Location

Tree Suitability

- High
- Moderate
- Low



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Springwell Solar Farm

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TITLE:
FIGURE 5 PONDS AND GROUND LEVEL TREE ASSESSMENT LOCATIONS, PAGE 3 OF 8

PINS REFERENCE NUMBER:
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0 60 120 240
Metres
SCALE: 1:8,000 @ A3

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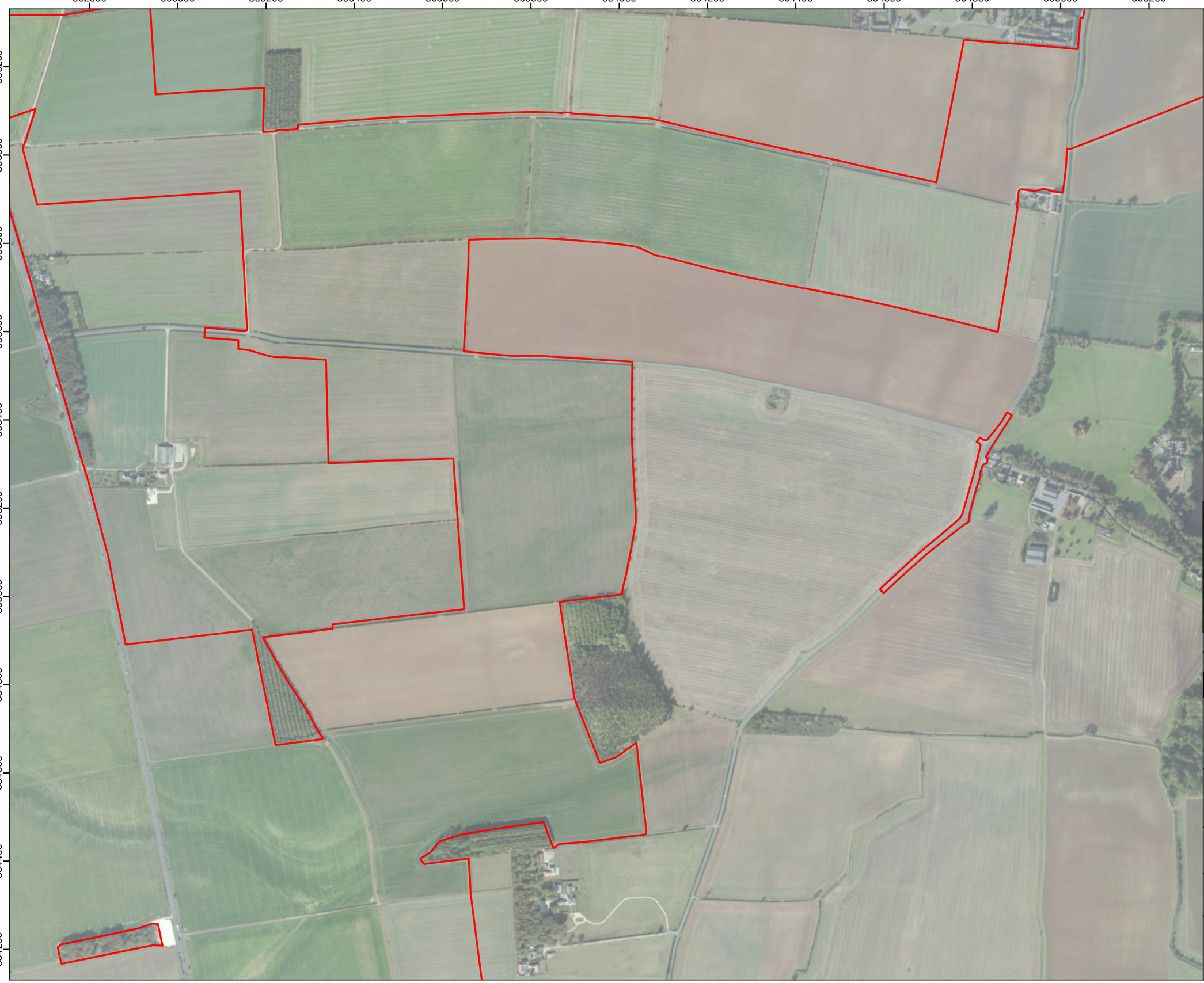
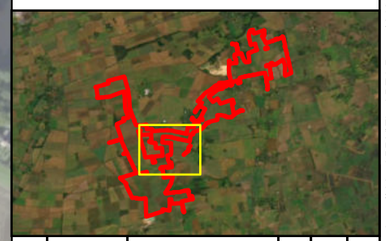


LEGEND:

- Order Limits

Tree Suitability

- High
- Moderate
- Low



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0 60 120 240
Metres
SCALE: 1:8,000 @ A3

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Path: C:\Users\rebekah.smyth\OneDrive - RSK Group\06 GIS - 2483765 - EDF Solar Springwell (aka Acre Lane)\03 - APRX\Final PEA Report\2483765 - Springwell Solar - Fig 5 - Pond and GLTA Locations.aprx[empty]

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358600 358400 358200 358000 357800 357600 357400 357200 357000 356800 356600

LEGEND:

Order Limits

Tree Suitability

- High
- Moderate
- Low

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Metres

SCALE: 1:8,000 @ A3

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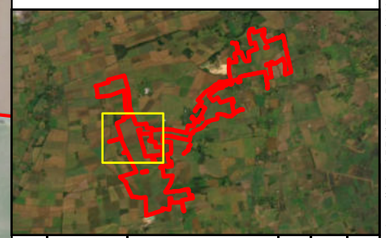
LEGEND:

Order Limits

Tree Suitability

- High
- Moderate
- Low



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PINS REFERENCE NUMBER:
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REV 01

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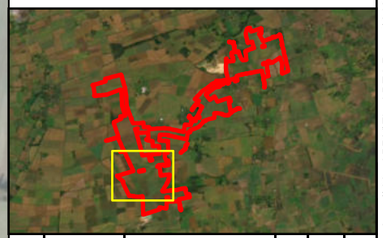
LEGEND:

Order Limits

Tree Suitability

- High
- Moderate
- Low



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PINS REFERENCE NUMBER:
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SCALE: 1:8,000 @ A3

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353800 353600 353400 353200 353000 352800 352600 352400 352200 352000 351800

P15

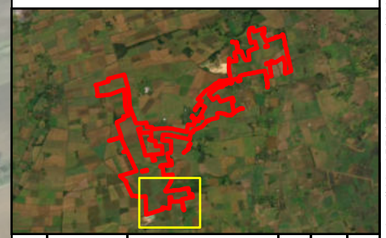
P4

LEGEND:

- Order Limits
- Pond Location

Tree Suitability

- High
- Moderate
- Low



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SCALE: 1:8,000 @ A3

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Appendix 1 - Nature Conservation Legislation and Policy

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

Appendix 1 – 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 force[1].

The Convention on Biological Diversity 1992 *et seq.*

This multilateral treaty [redacted], 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
Available online: 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
Available online: 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 under Annex I, II, IV and/or V. Species listed under Annex IV are

[1] 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. [Accessed August 2024].

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
Available online: 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 cooperation 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 legislation[2] (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
Available online: 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 research activities. The UK Government ratified the

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

Bonn Convention in 1985. The current legally-binding Agreements under the Convention include EUROBATS[3].

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979
Available online: [redacted]

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
Available online: [redacted]

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 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 Wales. 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:

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

[3] More information available at https://jncc.gov.uk/our-work/agreement-on-the-conservation-of-populations-of-european-bats-eurobats [Accessed August 2024].

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)[4] 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)[5].

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.

[4] In Scotland, as amended by Section 14 of the Wildlife and Natural Environment (Scotland) Act 2011.
[5] SNCBs are - in England: Natural England; in Wales: Natural Resources Wales; in Scotland: NatureScot; in Nortern Ireland: Department of Agriculture, Environment and Rural Affairs (DAERA).

The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017
Available online: https://www.legislation.gov.uk/uksi/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
Available online: 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

Available online: https://www.legislation.gov.uk/ukpga/2006/16

The 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 Archive[6].

The Hedgerows Regulations 1997

Available online: 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

Available online: 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).

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

The Wild Mammals (Protection) Act 1996
Available online: 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.

Invasive Alien Species (Enforcement and Permitting) Order 2019

Available online: https://www.legislation.gov.uk/uksi/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 Policy Statement for Energy (EN-1) (2023). Available online: Overarching National Policy Statement for energy (EN-1) - GOV.UK (www.gov.uk).

National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023). Available online: National Policy Statement for renewable energy infrastructure (EN-3) - GOV.UK (www.gov.uk).

National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023). Availailable online**:** https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5

National Planning Policy Framework 2021
Available online: 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 Planning Policy 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
Available online: 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
Available online: 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
Available online: 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 polices 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 2 – Local Wildlife Site Citations

Appendix 2 - Notable Species Records

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

Appendix 2 - Notable Species Records

Table 6 displays noteworthy species records that are located within 2km of the survey area. 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 2km of the survey area

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Plants					
Astragalus danicus	Purple milk vetch	S41	2008	0	1
Clinopodium acinos	Basil thyme	S41	2015	0	1
Hyacinthoides non-scripta	Bluebell	WCA5, S8	2018	0	16
Invertebrates					
Coenonympha pamphilus	Small heath	S41	2021	1	50
Cupido minimus	Small blue	WCA5, S41	2019	0	1
Hipparchia semele	Grayling	S41, GB RDB(VU)	2018	1	0
Polyommatus bellargus	Adonis blue	WCA5	2019	0	1
Tyria jacobaeae	Cinnabar	S41	2021	1	4
Reptiles					

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Natrix Helvetica	*Grass snake*	WCA5, S41	2021	0	4
Zootoca vivipara	Common lizard	WCA5, S41	2021	0	5
Fish					
Anguilla anguilla	European eel	S41, OSPAR	2014	0	1
Birds					
Acanthis cabaret	Lesser Redpoll	S41, Red	2005	0	2
Alauda arvensis	Skylark	S41, Red	2020	0	20
Alcedo atthis	Kingfisher	WCA1.1, Amber	2002	0	3
Anser anser	Greylag Goose	WCA1.2, Amber	2005	0	2
Apus apus	Swift	Amber, GB RDB(EN)	2019	0	13
Circus aeruginosus	Marsh harrier	WCA1.1, Amber	2016	0	58
Circus cyaneus	Hen harrier	WCA1.1, S41, Red, GB RDB(VU)	2010	0	4
Circus pygargus	Montagu's Harrier	WCA1.1, Amber, GB RDB(CR)	2007	0	50
Coturnix coturnix	Quail	WCA1.1, Amber	2012	0	1
Cuculus canorus	Cuckoo	S41, Red, GB RDB(VU)	2007	0	2

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Emberiza calandra	Corn bunting	S41, Red	2008	0	20
Emberiza citrinella	Yellowhammer	S41, Red	2015	0	18
Emberiza schoeniclus	Reed bunting	S41, Amber	2007	0	13
Falco columbarius	Merlin	WCA1.1, Red, GB RDB(EN)	2014	0	1
Falco peregrinus	Peregrine	WCA1.1	2011	0	7
Falco subbuteo	Hobby	WCA1.1	2014	0	11
Gallinago gallinago	Snipe	Amber	2000	0	2
Linaria cannabina	Linnet	S41, Red	2017	0	19
Locustella naevia	Grasshopper warbler	S41, Red	2011	0	3
Lullula arborea	Woodlark	WCA1.1, S41, GB RDB(VU)	2014	0	1
Milvus migrans	Black kite		2008	0	1
Milvus milvus	Red kite	WCA1.1	2020	0	8
Motacilla flava	Yellow wagtail	S41, Red	2009	0	28
Muscicapa striata	Spotted flycatcher	S41, Red	2004	0	4
Numenius arquata	Curlew	S41, Red, GB RDB(EN)	2019	0	2
Passer domesticus	House sparrow	S41, Red	2017	0	14

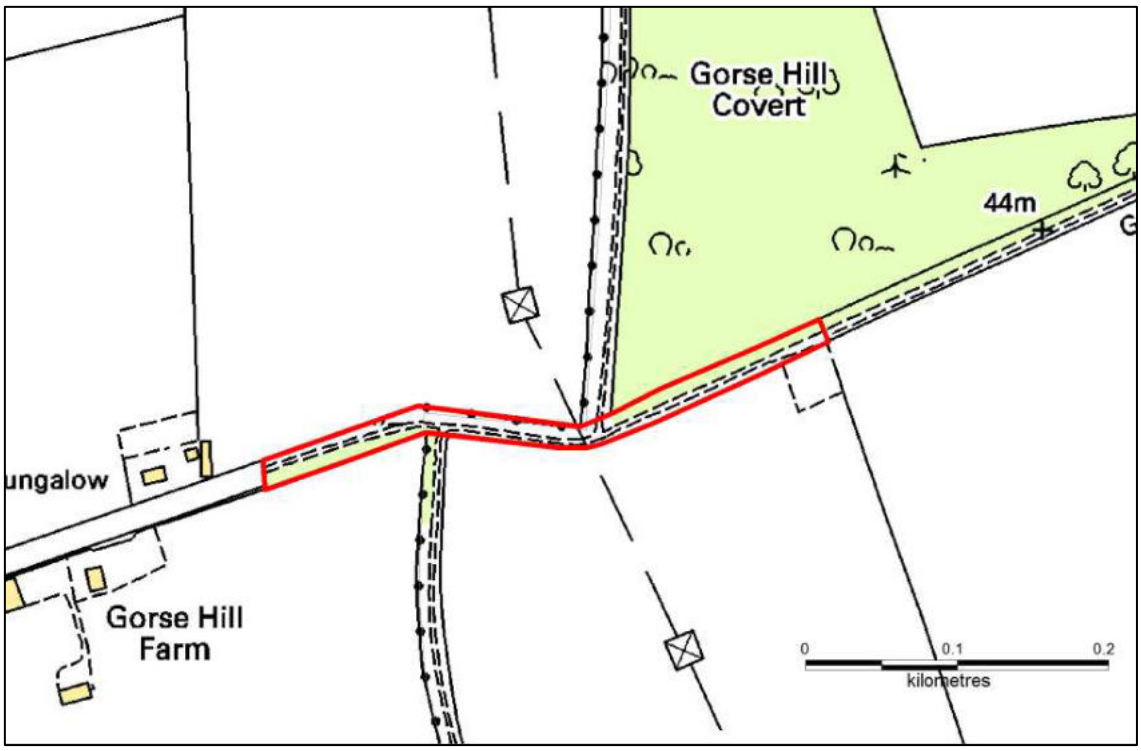
Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Passer montanus	Tree sparrow	S41, Red, GB RDB(VU)	2011	0	28
Perdix perdix	Grey partridge	S41, Red, GB RDB(VU)	2016	0	18
Regulus ignicapilla	Firecrest	WCA1.1	2005	0	1
Streptopelia turtur	Turtle dove	S41, Red, GB RDB(CR)	2007	0	14
Sturnus vulgaris	Starling	S41, Red, GB RDB(VU)	2009	0	20
Tringa tetanus	Redshank	Amber, GB RDB(VU)	2003	0	2
Turdus iliacus	Redwing	WCA1.1, Red, GB RDB(CR)	2004	0	3
Turdus philomelos	Song thrush	S41, Red	2017	0	4
Turdus pilaris	Fieldfare	WCA1.1, Red, GB RDB(CR)	2011	0	24
Tyto alba	Barn owl	WCA1.1	2015	0	61
Vanellus vanellus	Lapwing	S41, Red, GB RDB(EN)	2020	1	47
Mammal					
Arvicola amphibius	Water vole	WCA5, S41, GB RDB(EN)	2014	0	1
Erinaceus europaeus	Hedgehog	S41, GB RDB(VU)	2020	3	16
Lepus europaeus	Brown hare	S41	2019	0	42
Bats					

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 2km
Barbastella barbastellus	Barbastelle	EPS(Sch2), WCA5, S41, GB RDB(VU)	2014	0	2
Chiroptera	Unidentified bat	EPS(Sch2)	2018	0	14
Pipistrellus	Unidentified pipistrelle	EPS(Sch2), WCA5	2018	0	4
Pipistrellus pipistrellus	Common pipistrelle	EPS(Sch2), WCA5	2014	0	2
Pipistrellus pygmaeus	Soprano pipistrelle	EPS(Sch2), WCA5, S41	2014	0	2
Plecotus auratus	Brown long-eared bat	EPS(Sch2), WCA5, S41	2016	0	6

Appendix 3 - Local Wildlife Site Citations

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

Gorse Hill Lane Verges



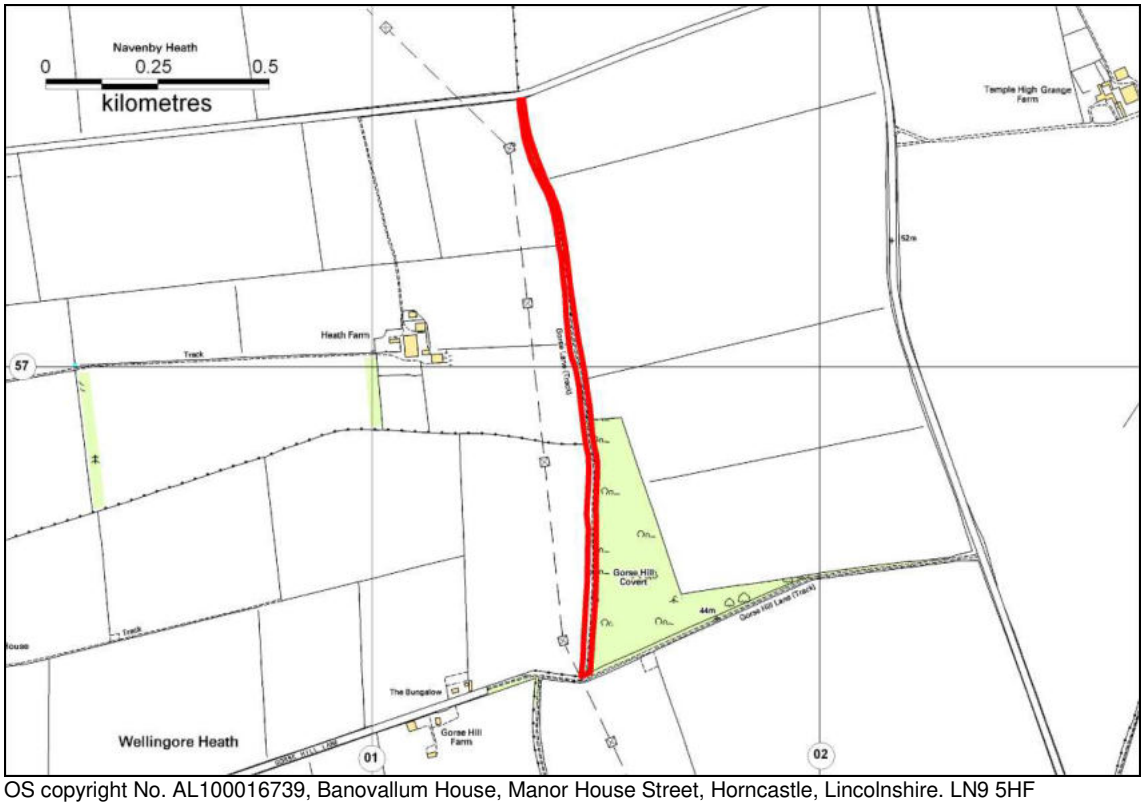
Grid ref: **TF012562 – TF016563** **Survey:** **2010**
Length: **0.4 km** **Surveyor:** [redacted]

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



Grid ref: **TF014563 – TF013576** **Survey:** **26 June 2008**
Area: **2.2 ha** **Surveyor:** [redacted]

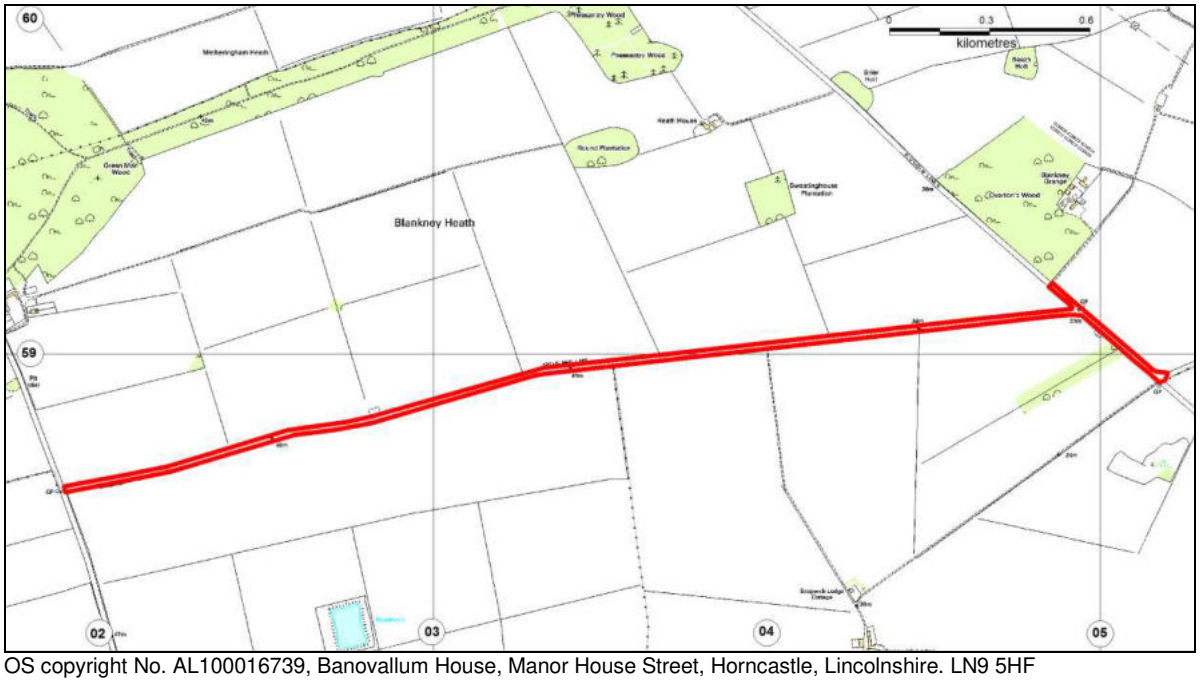
Main habitat: **Unimproved calcareous grassland, woodland, dense scrub, bracken**
Additional features: **Tussocky vegetation, species-rich hedgerows**

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 bartsia, 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.

Green Man Lane



Grid ref: **TF019586 – TF048592 – TF051589** **Survey:** **July 2009, 2010**
Length: **3.5 km** **Surveyor:** [redacted]

Main habitat: Calcareous grassland

Surveyed as part of the Life on the Verge Project

Calcareous grassland indicator species were present in high numbers throughout this site, but are not consistently abundant – distribution was patchy. The most species rich parts of the verge were interspersed with stretches with coarse vegetation (bramble, nettle, creeping thistle, oat-grass etc), scrub (planted shrubs and naturally developing) and some planted trees. Of note was a patch of dense wild privet at the northeast end.

The disintegrating wall separating the verge from adjacent arable land is not high enough to provide protection from fertilizer/spray drift. The 1.1m cut carried out by the County Council contractors is clearly undertaken regularly. Other than this management, the remainder of the verge does not appear to have been cut for some time.

These verges would benefit greatly from annual cutting and removal of arisings.

Criterion passed: CG1
Recommended as a Local Wildlife Site: 24 March 2010, 1 April 2011

A15, Green Man Road to Cuckoo Lane

Grid ref: **TF017590 – TF025560**
Length: **3.2 km**
Survey: **2011/12**
Surveyor: [redacted]

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

Grid ref: **TF030542 – TF037520**
Length: **2.4 km**
Survey: **2011/12**
Surveyor: [redacted]

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

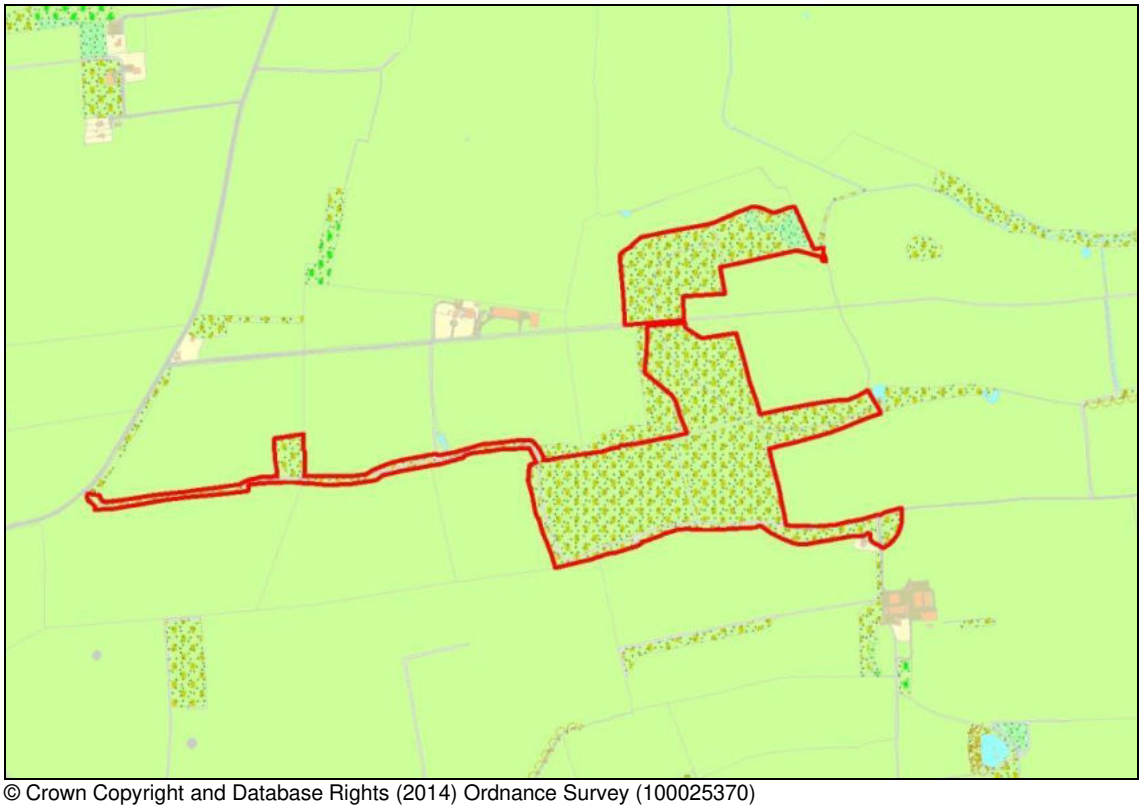
Grid ref: **TF001559 – TF005552**
Length: **0.8 km**
Survey: **2011/12**
Surveyor: [redacted]

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



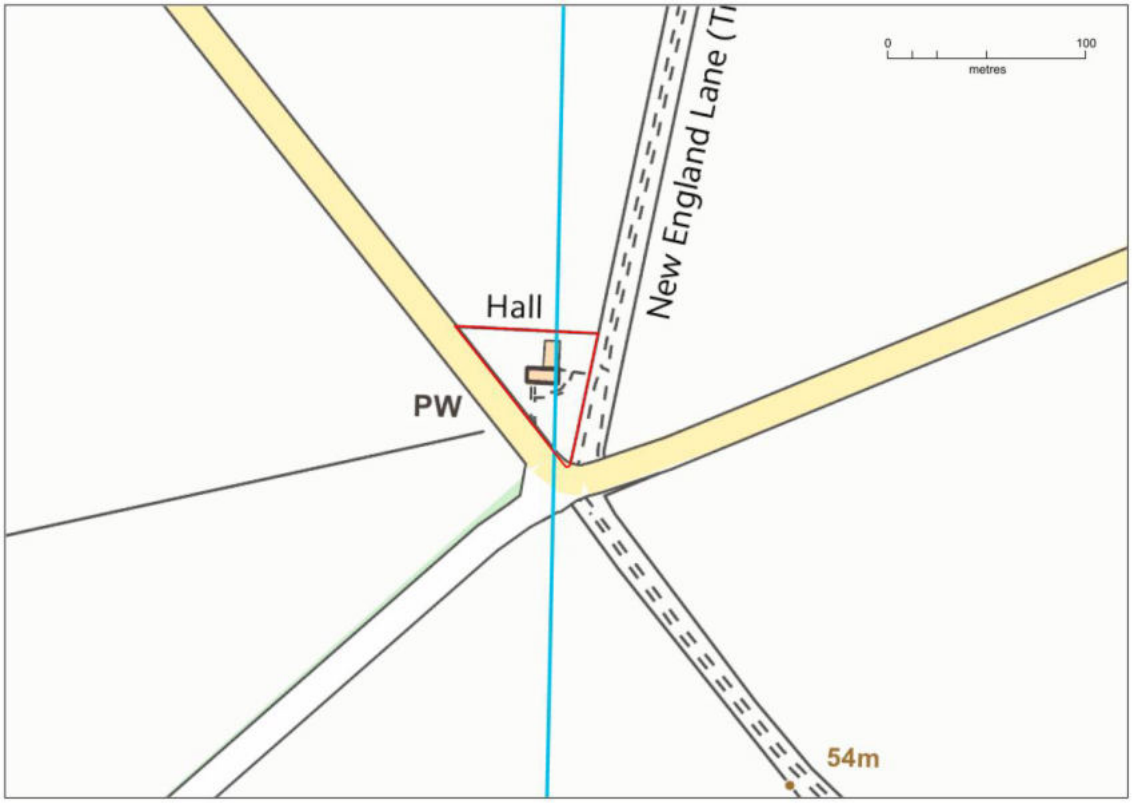
Grid ref: **TF047534** **Survey:** **31 May 2013**
Area: **29.9 ha** **Surveyor:** [redacted]
Main habitat: **Semi-natural woodland**
Additional habitat: **Bracken, Scrub - scattered / dense, Ditch**

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



Grid ref:	TF009547	**Survey:**	13 July 2017
Area	0.25ha	**Surveyor:**	[redacted]

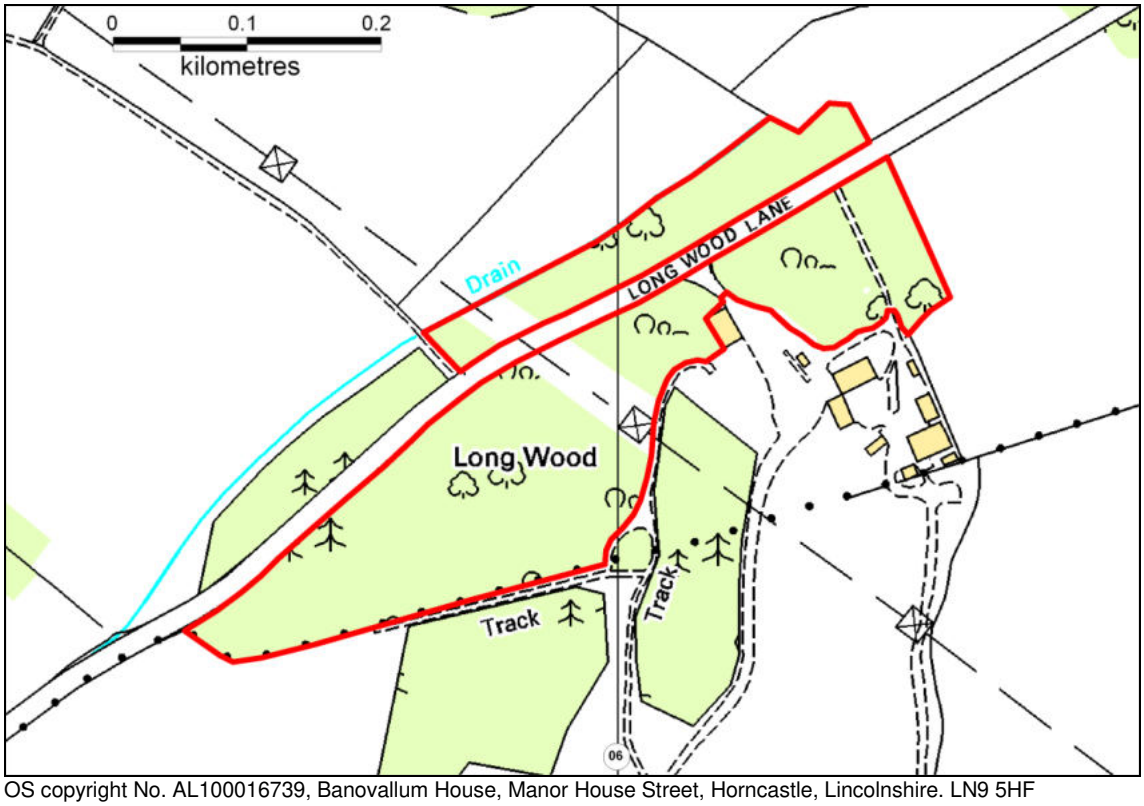
Main habitat: Calcareous grassland (unimproved)
Additional habitat: Calcareous grassland (semi-improved)

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



Grid ref: **TF060593** **Survey:** **10 July 2008**
Area: **7.4 ha** **Surveyor:** [redacted]

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

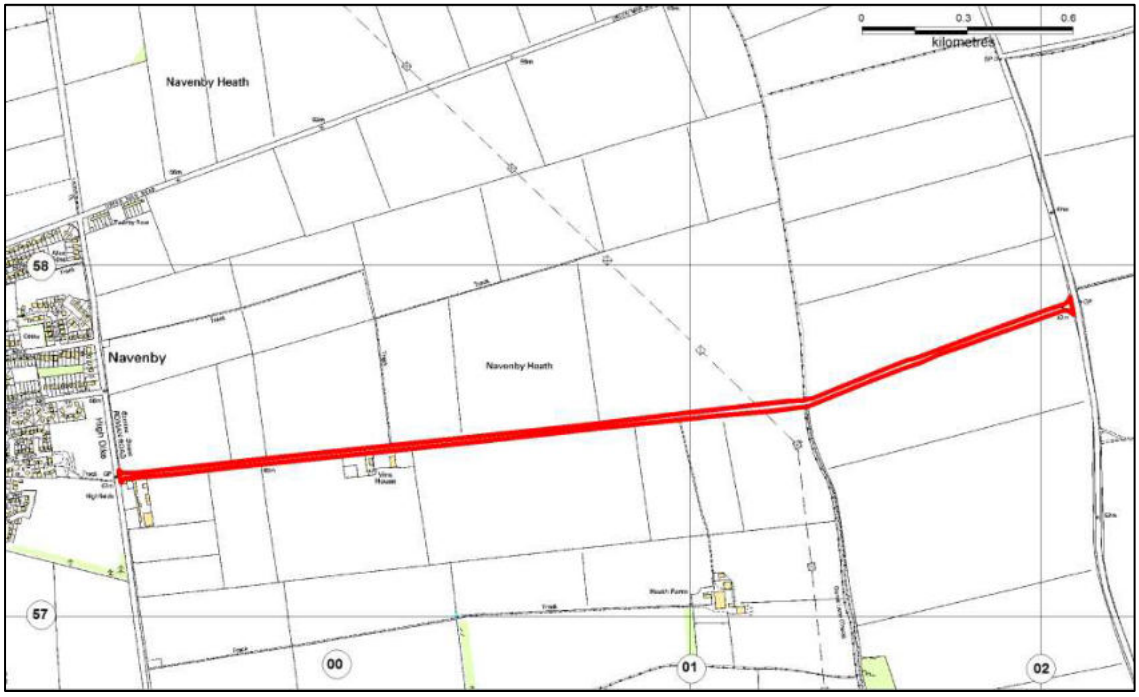
South of road

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



Grid ref: **SK993573 – TF020578** **Survey:** **2010**
Length: **2.8 km** **Surveyor:** [redacted]

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

Grid ref: **TF051586**
Area: **1.7 ha**
Survey: **3 September 2008**
Surveyor: [redacted]

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.

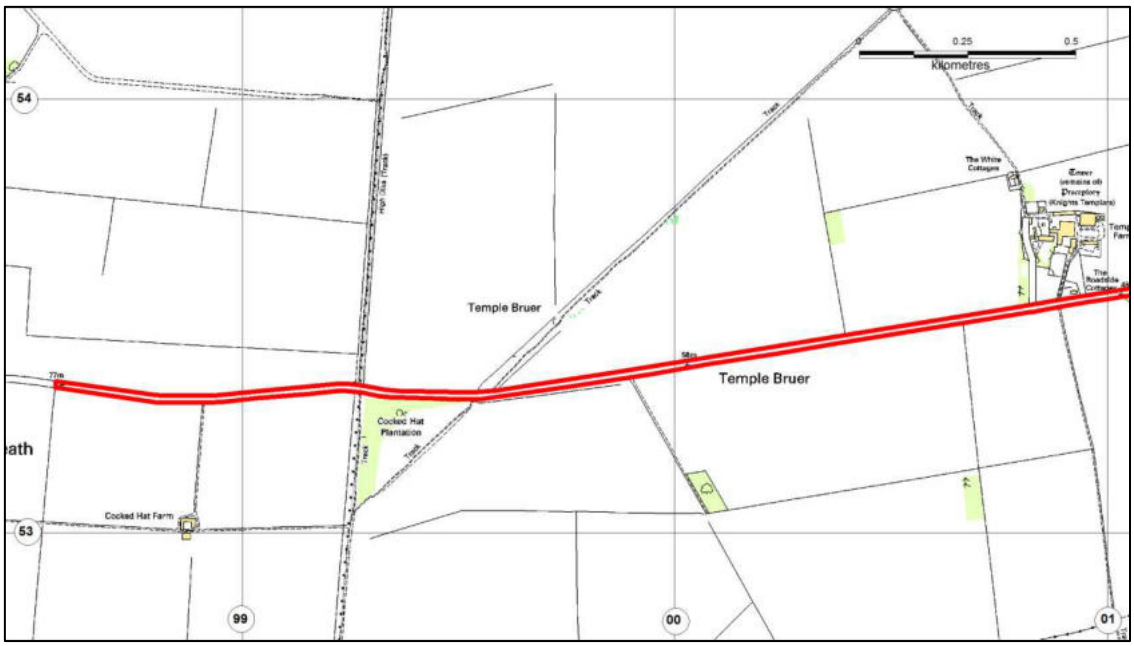
The main interest lies in the grassland where species such as rockrose, harebell, burnet-saxifrage, lady's bedstraw and knapweed are still present in quantity. Less frequent species include common restharrow, glaucous sedge, carline thistle, thyme, viper's bugloss, and salad burnet.

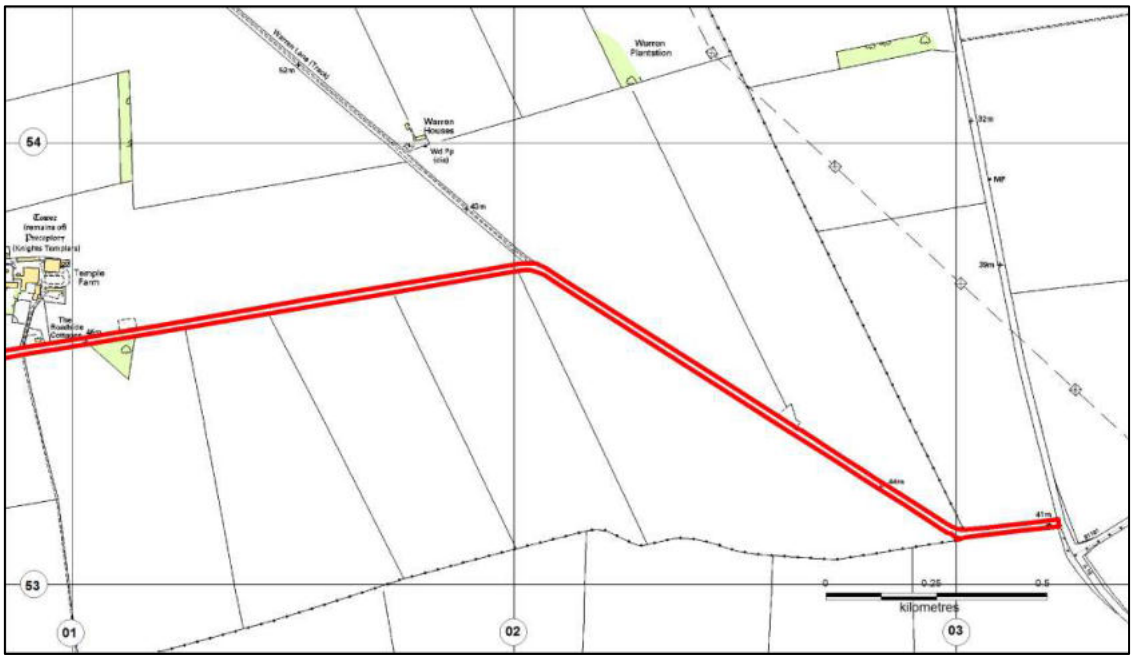
A number of the species listed previously were not seen, but that may be because of the late visit. They included: dropwort, small scabious and hairy violet. The flora also includes a number of more-or-less ubiquitous species that are not particularly characteristic of limestone grassland.

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





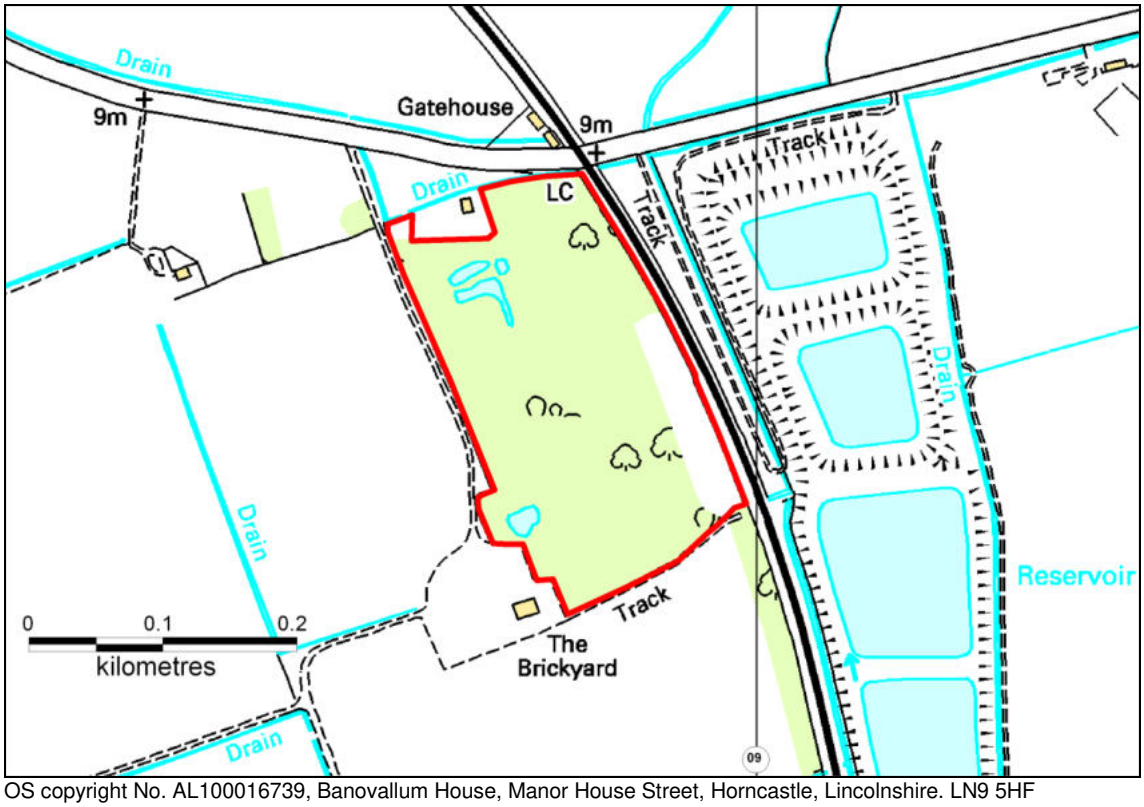
Grid ref: **SK985533 – TF032531** **Survey:** **2010**
Length: **4.9 km** **Surveyor:** [redacted]

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



Grid ref: **TF088603** **Survey:** **7 July 2008**
Area: **4.9 ha** **Surveyor:** [redacted]
Main habitats: **Semi-natural woodland**
Additional habitats: **Wet woodland, standing water**
Additional features: **Standing/fallen dead wood, hummocky ground, areas with frequent/prolonged flooding**

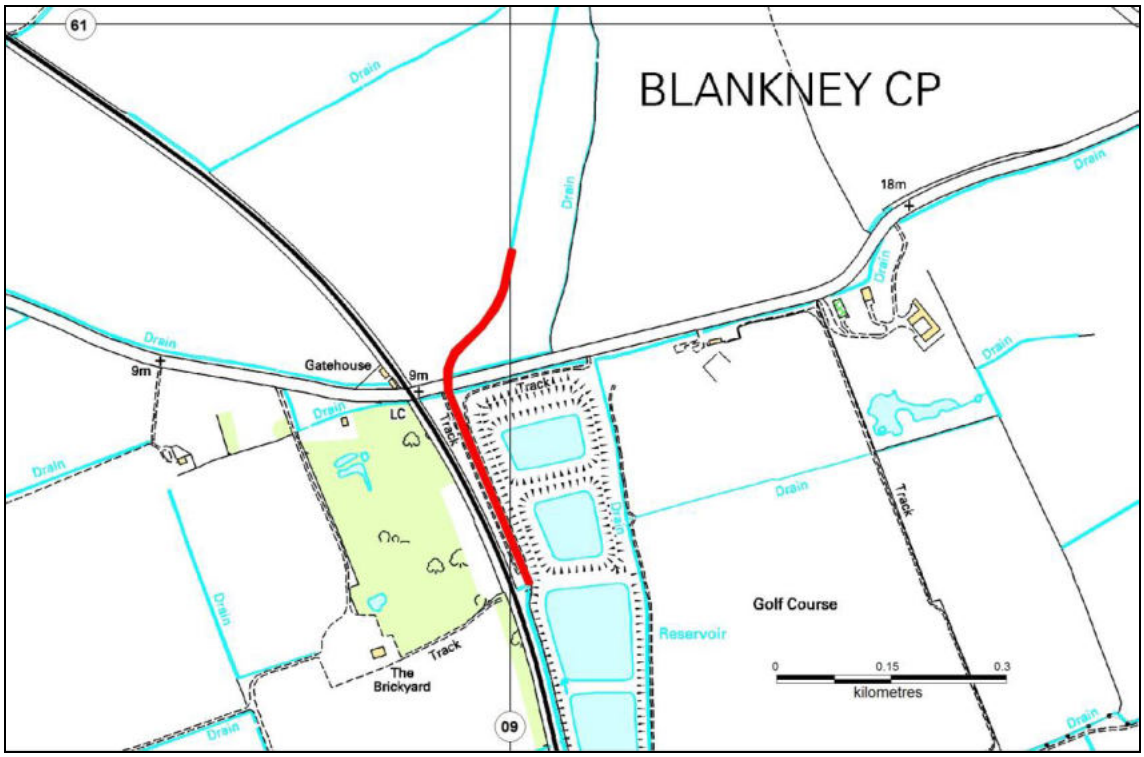
A disused brick pit, about 2 km east of Blankney village on the south side of a minor road to Walcott. The east side is bounded by a railway line and the south and west sides by open farmland.

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



Grid ref: **TF090607 – TF090602** **Survey:** **14 September 2010**
Area: **0.5 km** **Surveyor:** [redacted]

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.

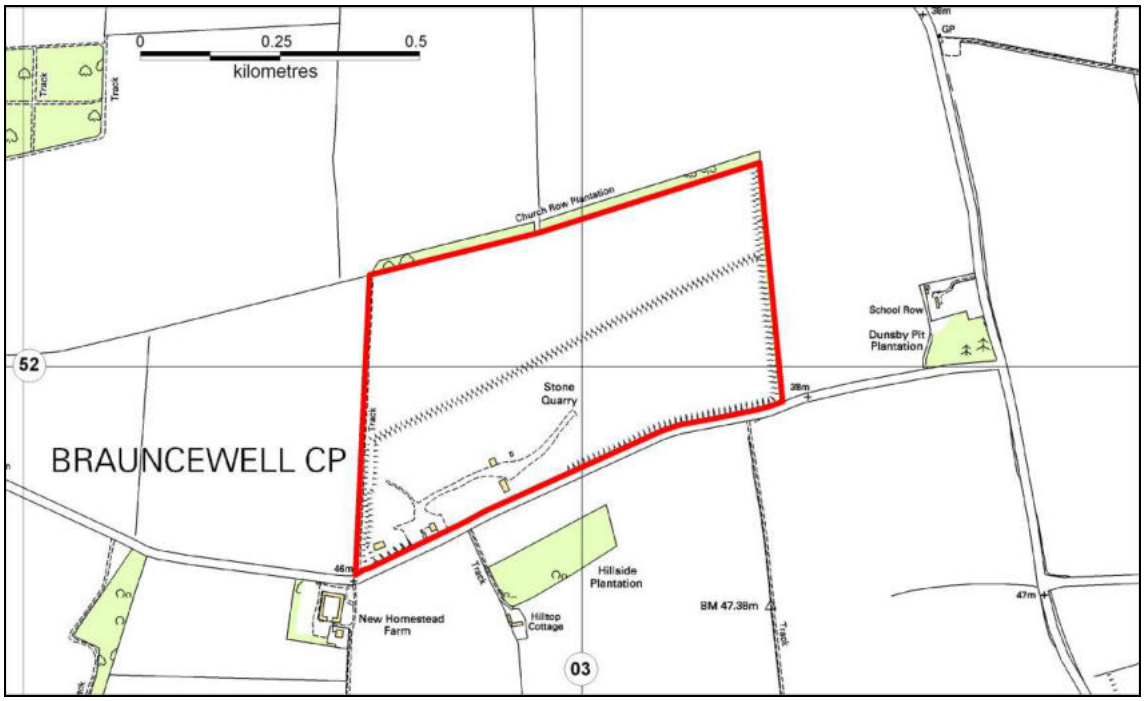
The site supports a reasonably varied aquatic flora including stands of greater pond sedge *Carex riparia*, bulrush *Typha latifolia* and branched bur-reed *Sparganium erectum* but also occasional fools watercress *Apium nodiflorum*, yellow flag *Iris pseudacorus*, purple-loosestrife *Lythrum salicaria*, 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

Brauncewell Quarry



Grid ref: **TF029519** **Survey:** **November 2009**
Area: **33.7 ha** **Recorder:** [redacted]

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.

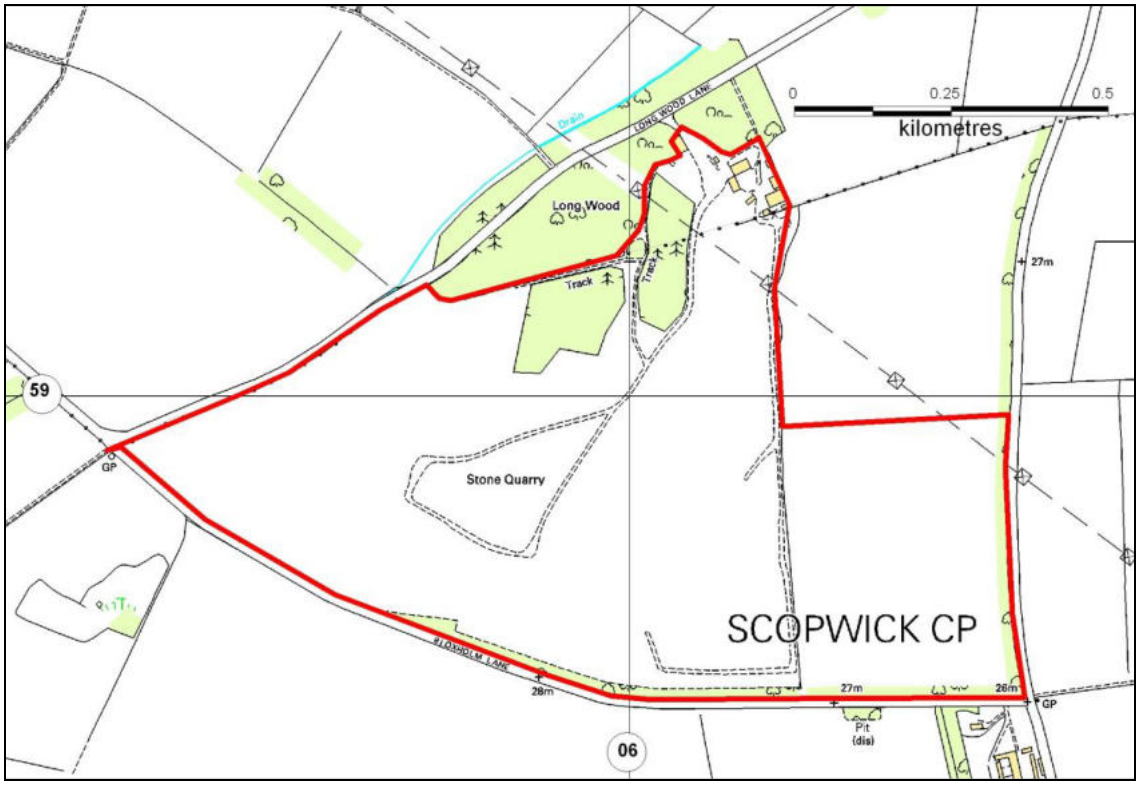
The working faces on the north and east sides, stand vertically with little weathered scree. The older un-worked face along the south side shows a greater degree of fissuring and jointing leading to spalling, due to stress-release in the strata.

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 Brauncewell (as an extension to the existing quarry) and to restore the extension area and the existing quarry utilising inert waste at Brauncewell 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



Grid ref: **TF058589** **Survey:** **November 2009**
Area: **70.8 ha** **Recorder:** [redacted]

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.

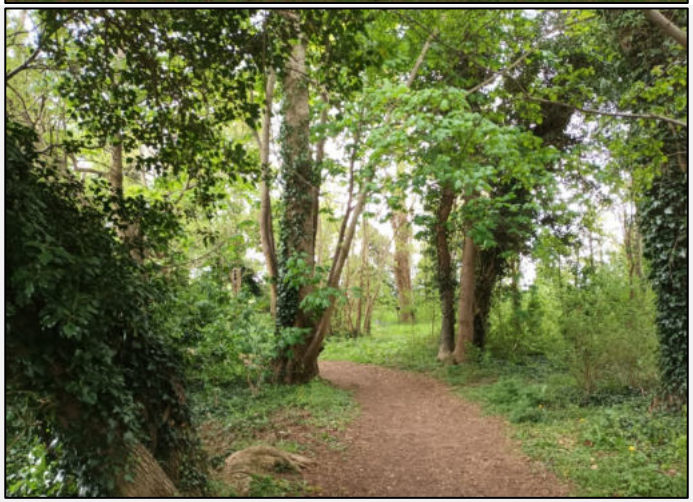
Criteria passed: Scientific, Cultural, Educational, Access and safety
Recommended as a Local Geological Site: 6 December 2010

Appendix 4 - Target Notes

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

Appendix 4 – Target notes

Target Note	Description	Photograph
Target Note 1	Calcareous grassland LWSs lining several of the roads and tracks within the Order Limits.	
Target Note 2	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. The species assemblage varies slightly in terms of herb species present, but broadly comprised grass species including cock's-foot (*Dactylis glomerata*), crested dog's-tail (*Cynosurus cristatus*), false oat grass (*Arrhenatherum elatius*), red fescue (*Festuca rubra*), tall fescue (*Schedonorus arundinaceus*), barren brome (*Anisantha sterilis*), perennial rye grass (*Anisantha sterilis*), common bent (*Anisantha sterilis*), rough meadow-grass (Anisantha sterilis), and Yorkshire-fog (*Holcus lanatus*). Herb species included colt's-foot (*Tussilago farfara*), common bird's-foot-trefoil (*Lotus corniculatus*), creeping thistle (*Cirsium arvense*), marsh thistle (*Cirsium palustre*), meadow buttercup (*Ranunculus acris*), mouse-ear hawkweed (*Pilosella officinarum*), shepherd's purse (Capsella bursa-pastoris), cuckoo flower (*Cardamine pratensis*), dandelion (*Taraxacum officinale agg.)*, pineapple weed (*Matricaria discoidea*), sun spurge (*Euphorbia helioscopia)*, ground ivy (*Glechoma hederacea*), hogweed (*Heracleum sphondylium*), cow parsley (*Anthriscus sylvestris*), ribwort plantain (*Plantago lanceolata*), yarrow (*Achillea millefolium*), nettle (*Urtica dioica*), scarlet pimpernel (*Anagallis arvensis*),	

Target Note	Description	Photograph
	cleavers (*Galium aparine*), spear thistle (*Cirsium vulgare*), lesser celandine (*Ficaria verna*), broad leaved dock (*Rumex obtusifolius*), teasel (*Dipsacus fullonum*), white dead nettle (*Lamium album*), groundsel (*Senecio vulgaris*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), and daisy (*Bellis perennis*).	
Target Note 3	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 (*Anthoxanthum odoratum*), as well as occasional herbs including creeping thistle, wild mustard (*Sinapis arvensis*), common mouse-ear (*Cerastium fontanum*), chickweed (*Stellaria media*), and broad-leaved dock (*Rumex obtusifolius*).	
Target Note 4	Bloxham Wood, a Lincolnshire Wildlife Trust reserve and Local Wildlife Site. The woodland is predominately mature ash (*Fraxinus excelsior*), horse chestnut (*Aesculus hippocastanum*), beech (*Fagus sylvatica*), and sycamore with herb species including bluebell (*Hyacinthoides non-scripta*), nettle, cleavers, early purple orchid (*Orchis mascula*), and bugle (*Ajuga reptans*).	

Target Note	Description	Photograph
Target Note 5	A small area of semi-natural woodland which does not appear to have originated as a planation. Dominated by mature oak or ash, with sycamore, elder, beech, crack willow (*Salix fragilis*), goat willow (*Salix caprea*), and dogwood (*Cornus sanguinea*) also present within the canopy. The understory was dense nettle and bramble (*Rubus fruticosus*), with young holly (*Ilex aquifolium*), hawthorn, and blackthorn.	
Target Note 6	A line of mature beech trees along the road leading to Brauncewell church	

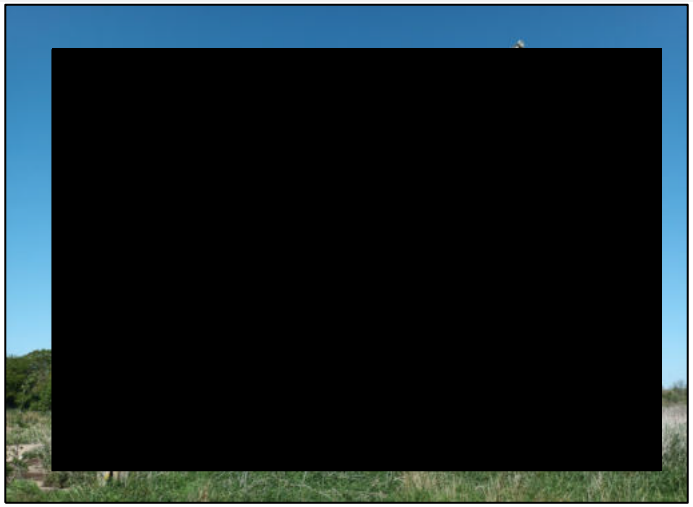
Target Note	Description	Photograph
Target Note 7	An outgrown hedgerow over 4m tall lining the north-eastern boundary to the south of Bloxholm Wood. It is comprised of ash, field maple, hawthorn, and blackthorn with dense bramble, dog rose, and ivy.	
Target Note 8	A mixed plantation woodland that is dominated by broadleaved species including oak, sycamore, beech, and ash but also contains planted Scots pine. The understory was dense nettle with some bramble, young holly, hawthorn, and blackthorn.	
Target Note 9	A small Scots pine plantation to the north of Scopwick	

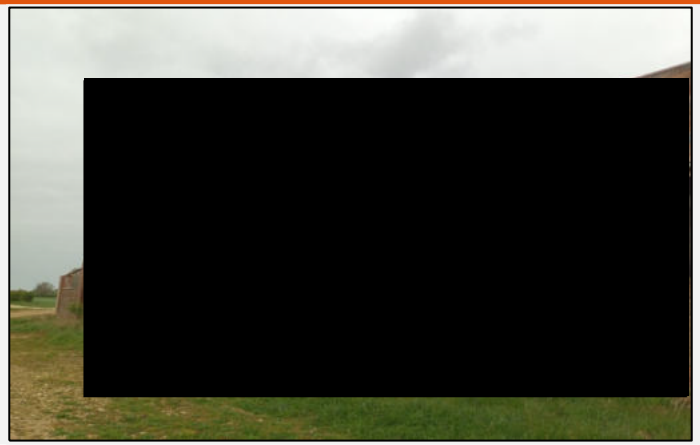
Target Note	Description	Photograph
Target Note 10	Hedgerows form the boundaries of the majority of the fields within the Site and border many of the roads and lanes.	
Target Note 11	Small areas of mixed scrub are present in several locations, such as around ponds	

Target Note	Description	Photograph
Target Note 12	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 (*Raphanus raphanistrum*), sun spurge, common vetch (*Vicia sativa*), wild mustard (*Sinapis arvensis*), purple tansy (*Phacelia tanacetifolia*), small bugloss (*Anchusa arvensis*), white campion (*Silene latifolia*), cock's foot, timothy (*Phleum pratense*), red fescue, crested dog's tail, common stork's bill (*Erodium cicutarium*), common ramping fumitory (*Fumaria muralis ssp. Neglecta*), and smooth tare (*Vicia tetrasperma*).	
Target Note 13	Three fields in the west of the Site were comprised of temporary sown grass leys	
Target Note 14	A field sown with legumes, including alfalfa (Medicago sativa).	

Target Note	Description	Photograph
Target Note 15	A field sown with cereal crops.	
Target Note 16	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 (*Urtica urens*), pineapple weed, and burdock (*Arctium lappa*).	

Target Note	Description	Photograph
Target Note 17	The Order Limits includes a small section of pavement, grass verge, and hedgerow within a garden in Scopwick, at the junction of the B1191 and B1188.	
Target Note 18	An area of hardstanding used for vehicles and farming machinery.	
Target Note 19	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.	

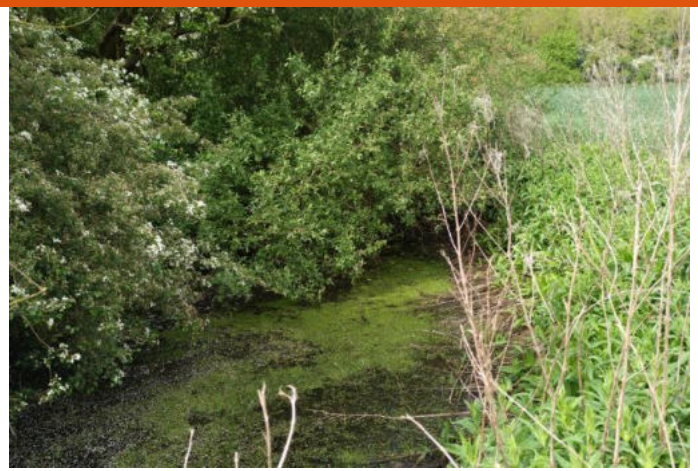
Target Note	Description	Photograph
Target Note 20	Pond	
Target Note 21	Streams and ditches	*No photograph available*
Target Note 22	The location of an oystercatcher in a field.	*No photograph available*
Target Note 23	A field that contained 27 lapwings and chicks.	*No photograph available*
Target Note 24	[redacted] constructed of corrugated metal. The doors were locked at the time of the survey so it could not be inspected internally, [redacted]	

Target Note	Description	Photograph
Target Note 25	[redacted] 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. [redacted].	

Appendix 5 - Pond Description and HSI Results

Application Document Ref: EN010149/APP/6.3
Planning Inspectorate Scheme Ref: EN010149

Appendix 5 – Pond Descriptions and HSI Results

Pond Number	Description	Photo	HSI Results
P1	Small pond in centre of arable field surrounded by hawthorn scrub. Duck weed covers approximately 70% of the surface. Partially shaded by scrub.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	1
4	Water quality	0.67
5	Shade	1
6	Waterfowl effect	1
7	Fish presence	0.67
8	Pond Density	0.65
9	Terrestrial habitat	0.67
10	Macrophyte cover	1
HSI Score		***0.67***
Pond suitability		Average

Pond Number	Description	Photo	HSI Results
P2	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.		

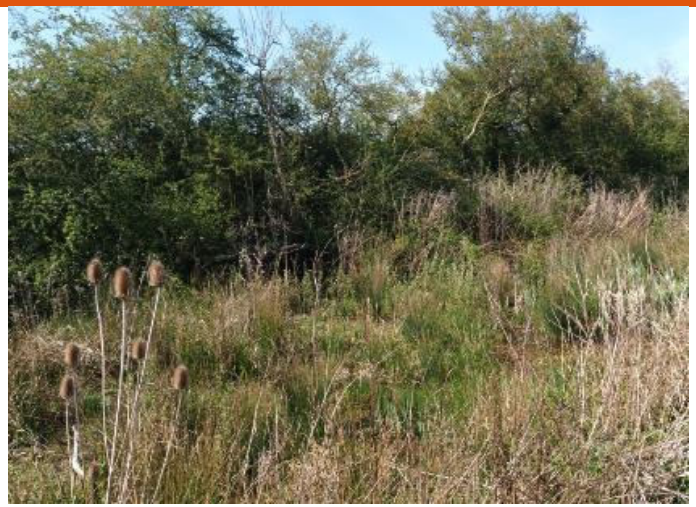
SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	1
4	Water quality	0.67
5	Shade	0.9
6	Waterfowl effect	1
7	Fish presence	0.67
8	Pond Density	0.65
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.9
HSI Score		***0.66***
Pond suitability		Average

Pond Number	Description	Photo	HSI Results
P3	Stagnant area of a field ditch adjacent to railway line embankment. Steep sides composed of brick and concrete. Dominated by macrophytes including branched burr reed and bullrush.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	1
4	Water quality	0.67
5	Shade	1
6	Waterfowl effect	1
7	Fish presence	0.67
8	Pond Density	0.65
9	Terrestrial habitat	0.33
10	Macrophyte cover	1
HSI Score		***0.63***
Pond suitability		Average

Pond Number	Description	Photo	HSI Results
P4	Large pond heavily shaded by numerous mature willows and surrounded by scrub. Few macrophytes and the water appeared partially turbid. Connected at the south-west corner and at the northern end by slow-flowing ditches.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.9
3	Pond permanence	1
4	Water quality	0.67
5	Shade	0.6
6	Waterfowl effect	1
7	Fish presence	0.67
8	Pond Density	0.8
9	Terrestrial habitat	0.6
10	Macrophyte cover	0.4
HSI Score		***0.74***
Pond suitability		Good

<table>
<tr><th>Pond Number</th><th>Description</th><th>Photo</th><th>HSI Results</th></tr>
<tr><td>P5</td><td>Does not appear on OS maps – within Blankney Brickpit LWS. Very shallow (a few centimetres in depth) in some areas, otherwise completely dry at the time of survey. Probably only holds water following heavy rain. Dominated by reed mace, teasel, hard rush, and great willowherb.</td><td>  </td><td>
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<tr><td>1</td><td>Geographic location</td><td>1</td></tr>
<tr><td>2</td><td>Pond area</td><td>0.4</td></tr>
<tr><td>3</td><td>Pond permanence</td><td>0.1</td></tr>
<tr><td>4</td><td>Water quality</td><td>0.01</td></tr>
<tr><td>5</td><td>Shade</td><td>1</td></tr>
<tr><td>6</td><td>Waterfowl effect</td><td>1</td></tr>
<tr><td>7</td><td>Fish presence</td><td>1</td></tr>
<tr><td>8</td><td>Pond Density</td><td>1</td></tr>
<tr><td>9</td><td>Terrestrial habitat</td><td>0.67</td></tr>
<tr><td>10</td><td>Macrophyte cover</td><td>0.8</td></tr>
<tr><td colspan="2">HSI Score</td><td>0.43</td></tr>
<tr><td colspan="2">Pond suitability</td><td>Poor</td></tr>
</table>
</td></tr>
<tr><td>P6</td><td>Small pond within Blankney Brickworks LWS in an open area of scrub and young planted trees. At least 90% covered with algae, with branched burr reed and rushes also present.</td><td>  </td><td>
<table>
<tr><th>SI No</th><th>SI Description</th><th>SI Value</th></tr>
<tr><td>1</td><td>Geographic location</td><td>1</td></tr>
<tr><td>2</td><td>Pond area</td><td>0.01</td></tr>
<tr><td>3</td><td>Pond permanence</td><td>0.5</td></tr>
<tr><td>4</td><td>Water quality</td><td>0.33</td></tr>
</table>
</td></tr>
</table>

Pond Number	Description	Photo	HSI Results		
	Approximately 15cm deep.		5	Shade	1
			6	Waterfowl effect	1
			7	Fish presence	0.67
			8	Pond Density	1
			9	Terrestrial habitat	1
			10	Macrophyte cover	1
			HSI Score		***0.51***
			Pond suitability		Below average
P7	Large pond several metres south of P6, surrounded by compact rush. At least 50cm deep.		**SI No**	**SI Description**	**SI Value**
			1	Geographic location	1
			2	Pond area	0.4
			3	Pond permanence	1
			4	Water quality	0.33
			5	Shade	1
			6	Waterfowl effect	1
			7	Fish presence	0.67
			8	Pond Density	1
			9	Terrestrial habitat	1
			10	Macrophyte cover	0.4

Pond Number	Description	Photo	HSI Results
			HSI Score ***0.72***
			Pond suitability: Good
P8	Small pond several metres to the east of P7. Dominated by macrophytes including algae, branched burr reed and water horsetail. Approximately 10cm deep.		**SI No** / **SI Description** / **SI Value**: 1 Geographic location: 1; 2 Pond area: 0.5; 3 Pond permanence: 0.1; 4 Water quality: 0.01; 5 Shade: 1; 6 Waterfowl effect: 1; 7 Fish presence: 1; 8 Pond Density: 1; 9 Terrestrial habitat: 1; 10 Macrophyte cover: 0.3
			HSI Score ***0.41***
			Pond suitability: Poor

Pond Number	Description	Photo	HSI Results
P9	Dry ditch to the south of Blankney Brickpit LWS. Similar to p5, likely only holds water following heavy rain. Dominated by reed mace, teasel, hard rush, and great willowherb.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.6
3	Pond permanence	0.1
4	Water quality	0.01
5	Shade	1
6	Waterfowl effect	1
7	Fish presence	1
8	Pond Density	1
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.5
HSI Score		***0.43***
Pond suitability		Poor

Pond Number	Description	Photo	HSI Results
P10	Large pond surrounded by hawthorn and willow scrub. Partially shaded by trees.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.7
3	Pond permanence	1
4	Water quality	0.67
5	Shade	1
6	Waterfowl effect	0.67
7	Fish presence	0.67
8	Pond Density	0.65
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.9
HSI Score		***0.78***
Pond suitability		Good

Pond Number	Description	Photo	HSI Results
P11	Large pond at the edge of an arable field. Dominated by rushes, great willowherb, and branched burr reed.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	1
4	Water quality	0.67
5	Shade	1
6	Waterfowl effect	0.67
7	Fish presence	0.67
8	Pond Density	0.2
9	Terrestrial habitat	0.33
10	Macrophyte cover	0.95
HSI Score		***0.53***
Pond suitability		Below average

Pond Number	Description	Photo	HSI Results
P12	Small, very shallow pond within an area of woodland. Dominated by algae.	No photo available.	

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.1
3	Pond permanence	0.1
4	Water quality	0.33
5	Shade	1
6	Waterfowl effect	0.67
7	Fish presence	1
8	Pond Density	0.7
9	Terrestrial habitat	0.67
10	Macrophyte cover	1
HSI Score		***0.50***
Pond suitability		Below average

Pond Number	Description	Photo	HSI Results
P13	Small, shallow pond within a small area of woodland. Dominated by algae.		

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.2
3	Pond permanence	0.1
4	Water quality	0.33
5	Shade	1
6	Waterfowl effect	1
7	Fish presence	1
8	Pond Density	0.5
9	Terrestrial habitat	1
10	Macrophyte cover	1
HSI Score		***0.56***
Pond suitability		Below average

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