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Project No: 312040

# Leaford Solar Farm: Ecological Appraisal
# Confidential

Prepared for:

## RES

Beaufort Court
Egg Farm Lane
Kings Langley
WD4 8LR

**Contents Amendment Record**

This report has been issued and amended as follows:

| Revision | Description | Date | Signed |
|---|---|---|---|
| 0.1 | Draft | 16 May 2023 | R. Campbell |
| 1.0 | Final | 20 June 2024 | Alistair Blackshaw |
| 2.0 | Update following extension to site boundary | 26 October 2023 | B. McNicol |
| 3.0 | Update to new redline boundary | 12th December 2023 | B. McNicol |

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# Acknowledgement

This report has been prepared for the sole and exclusive use of RES in accordance with the scope of work presented in Mabbett & Associates Ltd (Mabbett) Letter Agreement (312040/LA/SB/PB), dated 13 December 2022. This report is based on information and data collected by Mabbett. Should any of the information be incorrect, incomplete, or subject to change, Mabbett may wish to revise the report accordingly.

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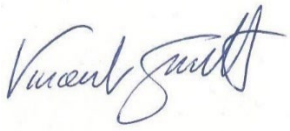

Vince Smith, MSc, MCIEEM
Director, Ecology

# Executive Summary

| Contents | Summary |
|---|---|
| **Site Location** | The site is located approximately 0.5 km north-east of Fulford, Staffordshire and comprises of approximately 69.21 ha of woodland, extensive hedgerows, arable fields, and improved grassland used for grazing livestock.<br>It is centred on Ordnance Survey (OS) Grid Reference: SJ 95651 39248. |
| **Proposals** | It is understood that current proposals comprise the development of a solar farm and associated infrastructure. |
| **Results** | **Statutory designated sites:** Two designated sites are located within 5 km of the site: Barlaston and Rough Common LNR and Coyney Woods LNR. The closest to site being Barlaston and Rough Common LNR which is 2.7 km west of the site.<br>A further five designated sites are located within 10 km of the site boundary: Hulme Quarry NNR and SSSI, Churnet Valley SSSI, Wetley Moor SSSI, King's and Hargreaves Wood SSSI and Dimmings Dale and the Ranger SSSI.<br>**Non-statutory designated sites:** Two Local Wildlife Sites (LWS) and three Biodiversity Action Sites (BAS) are present within 2 km of the site. The closest site, New Inn BAS, is 0.5 km east.<br>**Habitats:** The site comprises *Lolium - Cynosurus* neutral grassland, modified grassland, hedgerows, mixed scrub, lowland beech and yew woodland, other lowland mixed deciduous woodland, and lines of trees.<br>**Protected and/or notable species:** The site potentially provides habitat for fungi, invertebrates, great crested newt, breeding birds, roosting bats, commuting, and foraging bats, badger, and otter. |
| **Discussion & Recommendations** | **Statutory designated sites:** Barlaston and Rough Close Common LNR & Coyney Woods LNR are ecologically separated from the site by the villages of Meirheath and Blythe Bridge respectively, as well as the outskirts of the city of Stoke-on-Trent; no adverse impacts are anticipated. No adverse impacts are anticipated on any other designated sites due to their distance from the site boundary (>5 km).<br>**Non-statutory designated Sites:** No adverse impacts are anticipated on any non-statutory designated sites within 5 km of the site or their respective ecological networks.<br>**Habitats:** The grassland habitats are of little ecological value due to the regular application of fertilisers and the impact of extensive grazing and are therefore not a significant constraint to the development. All areas of hedgerow, woodland and scrub are of potential ecological value to a range of species and should be retained and enhanced where possible; approximately 90 m of hedgerow will be removed for access.<br>**Invertebrates:** Woodland, scrub and hedgerow habitats are considered to have value for invertebrates; habitats to be retained and enhanced wherever possible.<br>**Great crested newt:** All ponds along with higher quality terrestrial habitat (hedgerows, woodland, scrub) are to be retained as part of the proposed works and only the improved grasslands are to be developed. A District Level Licensing (DLL) scheme for GCN is operated in Staffordshire by NatureSpace Partnership and covers the site and was applied for November 2023. It is currently considered likely that GCN mitigation will be achieved through DLL as opposed to carrying |

| Contents | Summary |
|---|---|
| | out detailed surveys and, if required, applying for a mitigation licence through the 'traditional' licensing route. |
| **Discussion & Recommendations**<br>[Cont'd] | **Breeding birds:** Woodland bird species are considered likely to nest within the areas of woodland, scrub and hedgerow found throughout the site; all areas of woodland, scrub and hedgerow will be retained in order to avoid adverse impacts on breeding birds. Approximately 90 m of hedgerow will be removed for access; It is recommended that these works are scheduled outside of breeding bird season (March – August inclusive) in order to prevent disturbance to nesting birds. If not possible, all hedgerows to be removed should be checked for nesting birds by an Ecological Clerk of Works (ECoW) ahead of any vegetation clearance works and if any nest are identified a suitable exclusion zone shall be implemented by the ECoW and remain in place until the chicks have fully fledged.<br><br>Grassland habitats on site were considered broadly unsuitable for ground-nesting birds but lapwing were recorded displaying above a field 16 which was being prepared for reseeding to the south-west. Works here also to be scheduled outside of breeding bird season. If not possible, all areas should be checked for nesting birds by an ECoW ahead of any vegetation clearance works and appropriate exclusion zones implemented if nests are found.<br><br>**Roosting bats:** Numerous mature and some likely veteran trees recorded throughout the site. No tree felling is anticipated as a result of the proposed development and appropriate 30 m buffers have been put in place for all bat roost potential trees identified from the field survey. Should the proposed works change to include the felling or pruning of any of the highlighted bat roost potential trees, further survey effort would be required after review from a competent ecologist.<br><br>**Commuting and foraging bats:** No tree felling and only a limited amount of hedgerow removal is anticipated as a result of the proposed development. The key bat commuting and foraging corridors would therefore be maintained. Permanent lighting should be kept to an absolute minimum and be designed to be 'bat friendly' and where possible should not illuminate bat commuting, foraging and roosting habitats including woodland, hedgerows, scrub, lines of trees and ponds. Floodlights to be used for infrequent maintenance and operational activities only and will be manually controlled to prevent unnecessary activation.<br><br>**Badger**: **See Appendix C for Confidential Report**<br><br>**Otter:** Unnamed burn to the north of the site has the potential to support temporary resting places for otter but is considered unlikely to support breeding or foraging otter. General mitigation measures, as listed in Section 4.5, are recommended in order to prevent disturbance to individual otter should they be encountered during construction works. |

# Table of Contents

# Section 1.0: Introduction

## 1.1 Introduction

Mabbett Ltd (Mabbett) was commissioned by RES in December 2022 to carry out an Ecological Appraisal of the site known as land at Fulford, Stoke-on-Trent, centred on Ordnance Survey (OS) Grid Reference: SJ 95651 39248and hereafter referred to as 'the site'.

This report has been prepared by Mabbett Ecologist Becca Campbell MSc, BSc (Hons) and Blair McNicol BSc (Hons).

**Please note: This report contains confidential records of protected species and should not be made available to the public without redaction or removal of this information.**

## 1.2 Site Location

The site is located approximately 0.5 km north-east of Fulford, Staffordshire and comprises of approximately 69.21 ha of woodland, extensive hedgerows, arable fields and improved grassland used for grazing livestock.

The 'site' is defined as the area included within the red line boundary shown in Figure 1 within this report. The 'survey area' constitutes the area of the 'site' plus any appropriate buffers as detailed in Section 2 of this report.

Habitats adjacent to the site are largely similar to the site itself and consist of agricultural fields, hedgerows and farm buildings as well as Fulford itself to the south-west.

## 1.3 Proposals

It is understood that current proposals comprise of the development of ground-mounted solar photovoltaic modules across a 69.21 ha area, equating to approximately 30MW of output.

'*Construction and Operation of a solar farm with all associated works, equipment, necessary infrastructure and biodiversity net gains'*

## 1.4 Scope of the Report

The aim of this Ecological Appraisal is to establish the ecological baseline conditions of the site, in terms of the habitats present and any evidence of and/or suitable habitats for protected and priority species, which may be affected by the proposed development of the site. The main objectives of the survey were as follows:

- Carry out a desk study, to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/priority species within the site and its zone of influence;
- Identify and map the habitat types present on the site using the UK Habitat Classification Methodology (UKHab Ltd, 2023);
- Search for suitable habitats or field evidence of a range of protected or priority fauna within the site and appropriate buffers;
- Identify any additional surveys that may be required to provide a full assessment of the potential impact of the proposals and/or inform protected species licensing;
- Identify whether there is the need for Ecological Impact Assessment (EcIA) to support a planning application;
- Identify any mitigation measures that maybe required to offset any potential effects of the development proposals, and
- Identify the opportunities offered by the proposed development to deliver biodiversity gain.

The structure of the report and survey objectives have been designed with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines for Preliminary Ecological Appraisal Second Edition (CIEEM, 2017).

# Section 2.0: Methods

## 2.1 Desk Study

### 2.1.1 Local Ecological Records Centre

Information was requested from Staffordshire Ecological Record (SER) on the following:

- Non-statutory nature conservation sites i.e. Local Wildlife Sites (LWS);
- Legally protected plant and animal species;
- Notable species e.g. Species of Principal Importance (SPI); and
- Priority habitats and species as listed within the Staffordshire Biodiversity Action Plan (SBAP)

### 2.1.2 Online Resources

The following web-based databases were also accessed:

- Department for Environment Food and Rural Affairs (DEFRA) MAGIC, for information on statutory designated sites and Habitats of Principal Importance (HPI).
- National Biodiversity Network Atlas (NBN Atlas) for information on protected species

## 2.2 Field Survey

The field survey was undertaken on the 17th, 18th and 19th of April 2023 by Mabbett Ecologist Rob Mansbridge ACIEEM and Mabbett Ecologist Becca Campbell MSc, BSc (Hons). Weather conditions ranged between 13 - 15°C with cloud cover ranging from fully overcast (8 okta) to sunnier spells (3 okta) with scattered rain showers across the three days.

After completion of the first site visit a targeted badger survey was recommended and site boundary was extended. A PEA was carried out on the additional area and a target badger survey was completed for the full site. These works were carried out by approved subcontractor, ecologist Richard Millington.
The surveys were undertaken on 3rd and 4th August 2023, with the weather conditions recorded as 13°C, light winds and passing showers.

### 2.2.1 Habitats and Flora

UK Habitat Classification (UKHab) is a comprehensive habitat classification system for the UK that has been developed to benefit from changes in habitat categorisation, recording and analysis in recent decades, and its principal aim is to provide a rapid system for recording and classifying habitats. Each of the main habitats within the survey area was described using version 1.1 of the guidance (Butcher, et al., 2020), including details on component plant species abundances (recorded using the DAFOR[1] scale).

### 2.2.2 Invasive Plant Species

The site was searched for invasive plant species, primarily those included on Schedule 9 Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhodendron ponticum.*

### 2.2.3 Protected and Notable Species

The site was assessed for the possible presence of, and the likely importance of its habitats for, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations 2017, Schedule 5 of the Wildlife and Countryside Act 1981 (W&CA), the Countryside and Rights of Way (CRoW) Act 2000, those given extra protection under the Natural Environment and Rural Communities Act 2006, and species included in the Staffordshire LBAP.

[1]D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

#### 2.2.3.1 Great Crested Newt

The site was appraised for its suitability to support great crested newt (GCN). The assessment was based on Guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003) and the Great Crested Newt Conservation Handbook (Langton, et al., 2001). Where ponds were present within the site, these were assessed for their suitability to support breeding GCN according to the Habitat Suitability Index (HSI), as outlined in Amphibian and Reptile Groups (ARG) UK Advice Note 5: Great Crested Newt Habitat Suitability Index (Amphibian and Reptile Groups UK, 2010).

The HSI calculation incorporates data from 10 different biological and physical features of each pond to provide a 'score' between 1 and 0. The score assigned to each pond describes its suitability for great crested newt.

*Table 1: HSI Interpretation.*

| HIS | **HSI** (Buxton & Griffiths, 2022) | Pond Suitability |
|---|---|---|
| < 0.5 | <0.49 | Poor |
| 0.5 - 0.59 | 0.49 < 0.63 | Below average |
| 0.6 - 0.69 | 0.63 <0.77 | Average |
| 0.7 - 0.79 | 0.77 < 0.85 | Good |
| > 0.8 | >0.85 | Excellent |

#### 2.2.3.2 Otter

The site was surveyed for its suitability for otter, based on guidance outlined in *Monitoring the otter* (Chanin, 2003).

#### 2.2.3.3 Bats

**Roosting Bats**

Buildings, structures and trees on site were assessed from the ground for their suitability to support breeding, resting and hibernating bats, with reference to the methods outlined in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed, 2016) (Collins, 2016) hereafter referred to as the 'BCT Guidelines'. The following system has therefore been used to categorise the bat roost suitability of any features found (Table 2):

*Table 2: Bat roost suitability categories.*

| Suitability | Description of Potential Roosting Habitats |
|---|---|
| Negligible | Negligible habitat features on site likely to be used by roosting bats. |
| Low | 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. |
| Moderate | A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). |
| High | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions & surrounding habitat. |

**Foraging/commuting bats**

In accordance with the BCT Guidelines, the following criteria have been used to categorise the potential value of site habitats and features for use by foraging and commuting bats (Table 3).

*Table 3: Bat foraging habitat categories.*

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

#### 2.2.3.4 Red Squirrel

The site was appraised for its suitability to support red squirrel, based on best practice guidance (Gurnell, et al., 2009) which involves a search of suitable habitat (primarily coniferous woodland) for evidence of squirrel activity.

- Squirrel dreys within trees;
- Feeding remains (e.g. chewed cones, split nuts); and
- Sightings of red squirrels.

It should be noted that dreys and feeding remains cannot be accurately distinguished between red or grey squirrels.

#### 2.2.3.5 Water Vole

The water vole survey was undertaken in conjunction with the otter survey and covered the same area. The survey consisted of a search for field evidence following standard survey guidelines, (Dean, et al., 2016) in addition to an assessment of the habitat suitability of the site (Strachan, et al., 2011).

Field evidence includes:

- Droppings: 8-12 mm long, 4-5 mm wide;
- Latrine sites: piles of droppings of mixed aged categories, often stamped into the ground;
- Runways: often 5-9 cm broad and multi-branched; usually within 2m of water's edge and often forming tunnels through vegetation; leading to water's edge or burrows;
- Burrows: 4-8 cm diameter, wider than high; can be up to 3m from the waters edge;
- Nests: size and shape of a rugby ball, often in base of rushes, sedges or reeds;

- Feeding stations: located along water's edge; usually a pile of cut/chewed vegetation in sections approximately 10cm long; vegetation ends show marks of two large incisors. Piles of chopped grass, sedge or rush stems, rush pith and leaves;
- Lawns: short, grazed vegetation around land entrances of burrows;
- Footprints; and
- Sound: characteristic 'plop' when a vole enters the water.

Emphasis was placed on locating latrine sites, as they are the most useful sign for recording purposes. They indicate whether there is definite presence of water voles at a site.

Factors that influence the suitability of habitat for water voles include:

- Positive: The presence of riparian vegetation along the banks and in the water.
- Positive: A steep bank on a watercourse reducing the risk of burrow inundation.
- Positive: Slow-flowing, relatively deep (over 1m) watercourses.
- Negative: The presence of rocky or otherwise impenetrable substrates.
- Negative: Over-shading by trees.
- Negative: Fast flowing or shallow water, and flashy watercourses.
- Negative: The presence of American mink.

#### 2.2.3.6 Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Any setts recorded were classified according to the criteria outlined in *Surveying for badgers* (Scottish Badgers, 2018).

#### 2.2.3.7 Reptiles

The site was appraised for its suitability to support reptiles, including common lizard *Zootoca vivipara* and slow worm *Anguis fragilis*. The assessment was based on Guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003).

#### 2.2.3.8 Birds

Habitats on the site were appraised for their suitability to support breeding, migratory and wintering birds, with particular emphasis on species listed on Schedule 1 of the W&CA, SPI and bird species of conservation concern, as defined by Stanbury et al (2021).

#### 2.2.3.9 Dormice

Habitats on site were appraised for their suitability to support hazel dormice *Muscardinus avellanarius* based on Guidance outlined in the Dormouse Conservation Handbook (English Nature, 2006).

#### 2.2.3.10 Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, and invertebrates with regard to CIEEM's Guidelines for Preliminary Ecological Appraisal (Chartered Institute for Ecology and Environmental Management, 2017) and BS4 2020:2013 Biodiversity – Code of Practice for Planning and Development. Evidence of any current or historical presence of such species was recorded.

### 2.3 Limitations

The optimal period to undertake a UKHab Survey is April-September. The surveys were completed in April and August which is inside the optimal survey window.

To determine presence or likely absence of notable flora and protected species usually requires multiple visits at suitable times of the year. This survey focuses on assessing the potential of the site to support such ecological features, particularly those given protection under European or UK wildlife legislation or which are considered to be of principal importance for the conservation of biodiversity. Where there are significant limitations to the assessment in respect of any ecological features then further ecological survey work is recommended.

The details of this report are considered to valid for a period of **two years** from the date of the survey. After two years, the assessment should be reviewed to determine whether any further updates are necessary. The recommendations within this report should also be reviewed (and reassessed if necessary) should there be any changes to the development proposals available at the time of writing.

# Section 3.0: Baseline Conditions

All relevant ecological data provided by the consultees was reviewed and the results from these investigations are summarised below. The original desk study data is available upon request. A summary of planning policy and legislation relating to the species highlighted by the desk study and field survey is presented in Appendix A.

## 3.1 Statutory Designated Sites

Two statutory designated sites are located within 5 km of the site boundary, both Local Nature Reserves (LNRs): Barlaston and Rough Close Common and Coyney Woods. Hulme Quarry SSSI is also designated as a National Nature Reserve (NNR), Table 4, Figure 2.

*Table 4: Statutory Designated sites within 5 km of the site.*

| Site Name and Designation | Proximity and Direction to the proposed planting area | Designated Features |
|---|---|---|
| Barlaston and Rough Close Common LNR | 2.7 km west | Two areas of lowland heathland with diverse vegetation; dry heath and dry acid grassland to the east and acidic marshy grassland to the west. Some woodland and scrub on the fringes. |
| Coyney Woods LNR | 4.1 km north-west | Three areas of woodland; semi-natural woodland with oak, blackthorn, ivy and bluebells, mature broad-leaved woodland with silver birch, rowan, oak, holly and bluebells and birch and oak woodland. A stream along the western boundary has created a series of ponds of benefit to local amphibians. |
| Hulme Quarry NNR and SSSI | 5.2 km north-west | Designated for geological exposures as well as grassland, heathland and woodland habitats. |

## 3.2 Non-statutory Designated Sites

Six non-statutory designated sites are located within 2 km of the site boundary; this included three Biodiversity Alert Sites (BAS) and two Local Wildlife Sites (LWS), Table 5, Figure 2.

*Table 5: Non-statutory designated sites within 2 km of the site.*

| Site Name and Designation | Proximity and Direction to the Site | Designated Features |
|---|---|---|
| New Inn BAS | 0.5 km east | A complex of small fields of semi-improved grassland crossed by a wet ditch and bounded by species-poor hedges with mature hedgerows trees. |
| Mount Pleasant LWS | 0.6 km south | Two fields of semi-improved neutral grassland; smaller field to the north-west contains a pond with diverse marginal and some aquatic vegetation. |
| Blythe Bridge Woods BAS | 1.4 km north | Small area of oak and ash woodland with young sycamore, occasional common lime, silver birch, yew, Scot's pine, wych elm and rowan. North-west of the site is planted oak with alder, horse chestnut and occasional crack willow. |
| Stallington Heath LWS | 1.7 km south-west | A small area of woodland. |
| Blacklake Plantation BAS | 1.8 km west | Part of former Meir Heath that was replanted years ago; remnants of heathland origins evident in acidic ground flora e.g. bilberry, wavy hair grass |

| Site Name and Designation | Proximity and Direction to the Site | Designated Features |
|---|---|---|
| | | and purple moor grass. Canopy consists of oak and birch. |

### 3.3 Ancient Woodland Inventory

Hose Wood, part of the Ancient Woodland Inventory, is located 1.1 km to the south-east of the site (Figure 2). It consists of remnants of ancient semi-natural woodland scattered among arable land. Much of woodland has been cleared through reclamation schemes in order to provide grazing land for nearby farms.

### 3.4 Habitats

The full results of the UK Habitat Survey and target notes (TNs) are presented in Figure 2. Habitats too small to be mapped have been mentioned in target notes which are presented in Appendix B. The main habitats recorded during the field survey include:

- *Lolium - Cynosurus* neutral grassland (g3c6)
- Modified grassland (g4)
- Hedgerows (h2a, h2b)
- Mixed scrub (h3h)
- Lowland beech and yew woodland (w1c5)
- Other lowland mixed deciduous woodland (w1f7)
- Line of trees (w1g6)

*Table 6: Habitats found within the site boundary and their respective areas (ha).*

| Primary Habitat | Level 4 Habitats | Level 5 Habitats | UK Hab Code | Area (ha) |
|---|---|---|---|---|
| Neutral grassland | Other neutral grassland | Lolium – Cynosurus neutral grassland | g3c6 | 12.4 |
| Modified grassland | Modified grassland | - | g4 | 54.21 |
| Dense scrub | Mixed scrub | - | h3h | 0.2 |
| Broadleaved mixed and yew woodland | Lowland beech and yew woodland | Beech forests on acid soils | w1c5 | 0.5 |
| | Lowland mixed deciduous woodland | Other lowland mixed deciduous woodland | w1f7 | 1.9 |
| | | | | **Total: 69.21 ha** |

#### 3.4.1 Lolium - Cynosurus Neutral Grassland

*Lolium - Cynosurus* neutral grassland was recorded to the south-west of the site only. The key difference between *Lolium-Cynosurus* neutral grassland and the modified grassland habitat which dominates site is that *Lolium-Cynosurus* grassland is marginally more species-rich than the modified grassland habitats.

Grasses recorded in these habitats included crested dog's-tail *Cynosurus cristatus,* annual meadow grass *Poa annua,* and meadow foxtail *Alopecurus pratensis.* Other species found in this habitat included daisy *Bellis perennis*, creeping buttercup *Ranunculus repens,* white clover *Trifolium repens*, red clover *Trifolium pratense*, chickweed *Stellaria media*, lesser stitchwort *Stellaria graminea*, cuckoo flower *Cardamine pratensis* and hairy bittercress *Cardamine hirsuta* on field edges. Soft rush *Juncus effusus* and hard rush *Juncus inflexus* often occurred in the field margins but at low density.

#### 3.4.2 Modified Grassland

Modified grassland was the dominant habitat type found throughout the site, particularly to the east (Photo 1). These habitats were invariably species poor and dominated by perennial rye grass *Lolium perenne*, annual rye grass *Lolium multiflorum*, Yorkshire fog *Holcus lanatus*, curled dock *Rumex crispus*, broad-

leaved dock *Rumex obtusifolius,* creeping buttercup, dandelion *Taraxacum officinalis*, white clover, chickweed and occasional creeping thistle *Cirsium arvense*.

*Photo 1: Example of modified grassland habitat from the north of the site.*

### 3.4.3 Hedgerows

The species composition of hedgerows was generally consistent throughout the site; the main hedgerow shrubs were hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, frequently with holly *Ilex aquifolium*, dog rose *Rosa canina agg.* and occasionally elder *Sambucus nigra* and gorse *Ulex europaeus*. Species in the field layer included dominant bramble *Rubus fruticosus agg.* and ivy *Hedera helix*, abundant nettles *Urtica dioca*, cleavers *Galium aparine*, hogweed *Heracleum sphondylium*, red campion *Silene dioica*, hedge woundwort *Stachys sylvatica* and occasional foxglove *Digitalis purpurea*. In some rare instances, bluebells *Hyacinthoides non-scripta*, honeysuckle *Lonicera dioica* and gooseberry *Ribes uva-crispa* were found within the field layer.

Mature and immature trees were frequently found within hedgerows; dominant species included English oak *Quercus robur*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus* and silver birch *Betula pendula*. Species such as beech *Fagus sylvatica*, hornbeam *Carpinus betulus*, alder *Alnus glutinosa*, crab apple *Malus sylvestris,* grey willow *Salix cinerea*, crack willow *Salix fragilis*, horse chestnut *Aesculus hippocastanum*, common lime *Tilia x europaea* and large-leaved lime *Tilia platyphyllos* were also recorded but were generally less frequent.

Hedgerows assessed as being in ‘Good’ condition using the DEFRA Biodiversity Metric 4.0 (Natural England, 2023) were considered to be priority habitat hedgerows (Photo 2) whereas hedges assessed to be in ‘Moderate’ or ‘Poor’ condition (usually due to heavy flailing or gaps) were not considered priority habitat (Photo 3).

*Photo 2: Uncut hedge to the south of the site with blackthorn and holly.*

*Photo 3: Hawthorn hedge to the north of the site; heavily flailed.*

#### 3.4.3.1 Ditches

Field ditches and drains were recorded across the site bordering hedgerows and field edges and either lacked water or had low water levels. Ditches were consistently species poor with the most abundantly recorded plants being nettles, cleavers, and hogweed. Species such as lesser celandine *Ficaria verna*, garlic mustard *Alliaria petiolata,* meadowsweet *Filipendula ulmaria,* soft rush, rosebay willowherb *Chamaenerion angustifolium*, great willowherb *Epilobium hirsutum* and foxgloves were frequently found in and around ditches where vegetation was present if vegetation occurred at all.

### 3.4.4 Mixed Scrub

A small area of mixed scrub (Photo 4) was recorded on the western site boundary, bordering a pond; species recorded included grey willow, bramble, hawthorn, blackthorn, elder and rowan *Sorbus aucuparia*. Mature ash and sycamore trees were recorded within the hedgerow behind to the west.

A further narrow strip of mixed scrub (scattered scrub) was also recorded along the south-western edge of a field to the south of the site; woody vegetation in this area was too young to be classified as a line of

trees and did not constitute as a hedge. Species recorded within this area included hawthorn, grey willow, brambles, young English oak and silver birch.

*Photo 4: Small area of scrub bordering a pond to the west.*

### 3.4.5 Lowland Beech and Yew Woodland

A small area of lowland beech and yew woodland (Photo 5) was recorded to the south-west of the site. It differed from the lowland mixed deciduous woodland found elsewhere on site (Section 3.3.6) as it was dominated by mature beech trees as opposed to oak trees. Mature ash trees were also recorded within this area of woodland, with holly in the understory. Species in the field layer included nettles, dandelion, ragwort *Jacobaea vulgaris*, creeping buttercup, curled dock, and ribwort plantain *Plantago lanceolata*. The woodland was unenclosed and within an area of open grassland and is considered likely to have been influenced by grazing and fertiliser application based on the plant assemblage within the field layer. Despite these external influences, bluebells were also recorded in this habitat.

*Photo 5: Lowland beech and yew woodland to the south-west of the site, encircling a large pond.*

### 3.4.6 Lowland Mixed Deciduous Woodland

Lowland mixed deciduous woodland was recorded in three areas to the south-west of the site. Stallington Sprink (Photo 6) was the largest area of woodland; the dominant tree species within this woodland were English oak *Quercus robur* with rowan, holly, silver birch, dog rose and holly in the understory and a field layer dominated by bramble with honeysuckle, creeping buttercup, cleavers, soft rush in damp places and bluebells. Bush vetch *Vicia sepium* was recorded in woodland fringes.

A further small area of woodland was recorded to the west of Stallington Sprink, encircling the pond recorded in this area. The dominant tree species were a mix of both English oak and sessile oak *Quercus peraea,* with bird cherry *Prunus padus*, hawthorn, holly and hazel in the understory and bramble, lesser celandine, bluebells and foxgloves in the field layer. Gorse was recorded within the woodland fringes.

A third area of woodland was recorded south of Stallington Sprink surrounding a pond. The dominant tree species were English oak and sycamore; large numbers of sycamore seedlings were recorded in this area, suggesting a mast year for sycamore in 2022. Other trees and shrubs encircling the pond included grey willow, hawthorn and holly. The understory layer and ground layer were both much more species-poor within this area of woodland, possibly due to grazing pressure.

*Photo 6: Woodland dominated by English oak with bramble in the understory.*

### 3.4.7 Line of Trees

Lines of trees were most frequently found bordering field boundaries to the south of the site and were similar in species composition to the hedgerows. Tree species recorded included English oak, ash, sycamore, beech and uncut holly, blackthorn, and hawthorn. Species such as hazel *Corylus avellana*, rowan, crack willow, elder, alder, grey willow and large-leaved lime were also occasionally present.

## 3.5 Invasive Species

SER provided seven records of invasive species within 2 km of the site; these are summarised in Table 7. None of these invasive species were recorded during the field survey. Himalayan balsam *Impatiens glandulifera* was recorded bordering a ditch and the unnamed burn to the north: TN 6 and TN 18 but it may occur elsewhere on site, particularly along watercourses and ditches.

*Table 7: Invasive plant species records within 2 km of the site.*

| Species | No. of Records | Most Recent Record | Proximity of nearest record to Study Area |
|---|---|---|---|
| Rhododendron *Rhododendron ponticum* | 1 | 2013 | 1.5 km east |
| Japanese knotweed *Fallopia japonica* | 5 | 2017 | Within 2 km |
| Signal crayfish *Pacifastacus leniusculus* | 1 | 2016 | Within 2 km |

### 3.6 Protected and Notable Species

Staffordshire Ecological Record (SER) provided 67 records of 21 notable species within 2 km of the site. Records of protected species provided by SER for the past 10 years are presented in Table 8.

*Table 8: Protected and notable species records within 2 km of the site from the past 10 years.*

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| **Mammals** | | | | | |
| Brown long-eared bat *Plecotus auritus* | 4 | 2018 | 1.15 km east | ✓ | HabRegs2, WACA5 |
| Common pipistrelle *Pipistrellus pipistrellus* | 8 | 2018 | 0.8 km south | | HabRegs2, WACA5 |
| Noctule bat *Nyctalus noctula* | 2 | 2019 | 1.6 km east | ✓ | HabRegs2, WACA5 |
| Pipistrelle species | 12 | 2014 | Within site boundary | | HabRegs2, WACA5 |
| Soprano pipistrelle *Pipistrellus pygmaeus* | 1 | 2019 | 1.7 km east | ✓ | HabRegs2, WACA5 |
| Unidentified bat species | 1 | 2019 | 1.8 km east | | HabRegs2, WACA5 |
| Unidentified myotis species | 2 | 2019 | 1.7 km east | | HabRegs2, WACA5 |
| Badger *Meles meles* | 7 | 2020 | Within 2 km | | Protection of Badgers Act, 1992 |
| Brown hare *Lepus europaeus* | 1 | 2015 | Within 2 km | ✓ | |
| European hedgehog *Erinaceus europaeus* | 3 | 2020 | Within 2 km | ✓ | |
| Otter *Lutra lutra* | 5 | 2013 | 0.3 km east | ✓ | HagRegs2, WACA5 |
| **Birds** | | | | | |
| Barn owl *Tyto alba* | 6 | 2018 | 1.2 km south-west | | WACA1, BoCC5 Green |
| Black-headed gull *Chroicocephalus Ridibundus* | 2 | 2019 | 0.8 south-east | | BoCC5 Amber |

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| Brambling *Fringilla montifringilla* | 4 | 2018 | 0.75 km north-west | | WACA1, BoCC5 Green |
| Bullfinch *Pyrrhula pyrrhula* | 5 | 2019 | 0.8 south-east | | BoCC5 Amber |
| Common sandpiper *Actitis hypoleucos* | 1 | 2014 | 0.8 south-east | | BoCC5 Amber |
| Curlew *Numenius arquata* | 2 | 2014 | 0.9 km east | ✓ | BoCC5 Red, BAP |
| Dunnock *Prunella modularis* | 20 | 2019 | 0.8 south-east | | BoCC5 Amber |
| Fieldfare *Turdus pilaris* | 7 | 2018 | 0.8 km south-east | | WACA1, BoCC5 Red |
| Common sandpiper *Actitis hypoleucos* | 1 | 2014 | Within 2 km | | BoCC5 Amber |
| Cuckoo *Cuculus canorus* | 2 | 2013 | Within 2 km | ✓ | BoCC5 Red |
| Dipper *Cinclus cinclus* | 1 | 2013 | Within 2 km | | BoCC5 Amber |
| Golden plover *Pluvialis apricaria* | 2 | 2018 | 0.8 km east | | AnnexI, BoCC5 Green |
| Greenfinch *Chloris chloris* | 15 | 2019 | 0.8 km south-east | | BoCC5 Red |
| Greylag goose *Anser answer* | 1 | 2019 | 0.8 km east | | BoCC5 Amber |
| Grey wagtail *Motacilla cinerea* | 1 | 2016 | 1.9 north-west | | BoCC5 Amber |
| Herring gull *Larus argentatus* | 1 | 2013 | Within 2 km | | BoCC5 Red |
| Hobby *Falco Subbuteo* | 1 | 2017 | 2 km north-west | | WACA1, BoCC5 Green |
| House martin *Delichon urbicum* | 2 | 2019 | 0.8 km south-east | | BoCC5 Red |
| House sparrow *Passer domesticus* | 23 | 2016 | 0.8 km south-east | ✓ | BoCC5 Red |
| Kestrel *Falco tinnunculus* | 5 | 2019 | 0.4 km north-east | | BoCC5 Amber |
| Kingfisher *Alcedo atthis* | 1 | 2014 | 0.7 km east | | AnnexI, WACA1, BoCC5 Green |
| Lapwing | 9 | 2019 | Within site boundary | ✓ | BoCC5 Red |

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| *Vanellus vanellus* | | | | | |
| Lesser redpoll *Acanthis cabaret* | 1 | 2012 | Within 2 km | ✓ | BoCC5 Red |
| Lesser black-backed gull *Larus fuscus* | 13 | 2019 | 0.8 km south-east | | BoCC5 Amber |
| Linnet *Linaria cannabina* | 6 | 2020 | 0.9 km west | ✓ | BoCC5 Red |
| Little egret *Egretta garzetta* | 1 | 2014 | Within 2 km | | AnnexI, BoCC5 Green |
| Mallard *Anas platyrhynchos* | 7 | 2019 | 0.8 km south-east | | BoCC5 Amber |
| Meadow pipit *Anthus pratensis* | 16 | 2020 | 0.8 km south-east | | BoCC5 Amber |
| Mistle thrush *Turdus viscivorus* | 1 | 2019 | 0.8 km south-east | | BoCC5 Red |
| Moorhen *Gallinula chloropus* | 1 | 2019 | 0.8 km south-east | | BoCC5 Amber |
| Osprey *Pandion haliaetus* | 3 | 2016 | 0.6 km north-east | | AnnexI, WACA1, BoCC5 Green |
| Peregrine falcon *Falco peregrinus* | 3 | 2019 | 0.8 km east | | AnnexI, WACA1, BoCC5 Green |
| Pink-footed goose *Anser brachyrhynchus* | 2 | 2018 | Within 2 km | | BoCC5 Amber |
| Red kite *Milvus milvus* | 10 | 2018 | 1.3 km north-west | | AnnexI, WACA1, BoCC5 Green |
| Reed bunting *Emberiza schoeniclus* | 12 | 2020 | 1.7 km east | | BoCC5 Amber |
| Redwing *Turdus iliacus* | 8 | 2020 | Within 2 km | | WACA1, BoCC5 Amber |
| Rook *Corvus frugilegus* | 4 | 2019 | 0.8 km south-east | | BoCC5 Amber |
| Skylark *Alauda arvensis* | 23 | 2019 | Within site boundary | ✓ | BoCC5 Red |
| Snipe *Gallinago gallinago* | 11 | 2020 | 1 km east | | BoCC5 Amber |
| Song thrush *Turdus philomelos* | 14 | 2019 | 1.5 km east | ✓ | BoCC5 Red |
| Sparrowhawk *Accipiter nisus* | 2 | 2013 | 1.8 km east | | BoCC5 Amber |
| Starling *Sturnus vulgaris* | 21 | 2020 | 0.8 south-east | ✓ | BoCC5 Red |

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| Tawny owl *Strix aluco* | 1 | 2019 | Within 2 km | | BoCC5 Amber |
| Teal *Anas crecca* | 1 | 2013 | Within 2 km | | BoCC5 Amber |
| Tree pipit *Anthus trivialis* | 1 | 2019 | Within 2 km | | BoCC5 Red |
| Tree sparrow *Passer montanus* | 7 | 2018 | 0.8 km south-east | | BoCC5 Red |
| Willow tit *Poecile montanus* | 4 | 2019 | Within 2 km | | BoCC5 Red |
| Willow warbler *Phylloscopus trochilus* | 3 | 2019 | Within 2 km | | BoCC5 Amber |
| Woodcock *Scolopax rusticola* | 2 | 2019 | Within 2 km | | BoCC5 Red |
| Woodpigeon *Columba palumbus* | 11 | 2020 | 0.8 south-east | | BoCC5 Amber |
| Wren *Troglodytes troglodytes* | 11 | 2020 | Within 2 km | | BoCC5 Amber |
| Yellowhammer *Emberiza citrinella* | 11 | 2019 | 1.5 km north-east | ✓ | BoCC5 Red |
| **Invertebrates** | | | | | |
| Common yellow-face bee *Hylaeus communis* | 2 | 2019 | Within 2 km | | |
| Flavous nomad bee *Nomada flava* | 2 | 2019 | Within 2 km | | |
| Hairy-footed flower bee *Anthophora plumipes* | 2 | 2019 | Within 2 km | | |
| Ivy bee *Colletes hederae* | 1 | 2014 | Within 2 km | | |
| Red-tailed cuckoo bumblebee *Bombus rupestris* | 4 | 2019 | Within 2 km | | |
| Sandpit mining bee *Andrena barbilabris* | 2 | 2019 | Within 2 km | | |
| Spinach moth | 1 | 2018 | Within 2 km | ✓ | |

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| *Eulithis mellinata* | | | | | |
| Small ranunculus moth *Hecatera dysodea* | 1 | 2014 | Within 2 km | | |
| Shoulder-striped wainscot moth *Leucania comma* | 9 | 2018 | Within 2 km | ✓ | |
| Common Fan-foot moth *Pechipogo strigilata* | 2 | 2018 | Within 2 km | ✓ | |
| Grass rivulet moth *Perizoma albulata* | 2 | 2016 | Within 2 km | ✓ | |
| Feathered gothic moth *Tholera decimalis* | 2 | 2018 | Within 2 km | ✓ | |
| Dark-barred twin-spot carpet moth *Xanthorhoe ferrugata* | 4 | 2018 | Within 2 km | ✓ | |
| Beaded chesnut *Agrochola lychnidis* | 1 | 2017 | Within 2 km | ✓ | |
| Blood Vein *Timandra comae* | 7 | 2018 | Within 2 km | ✓ | |
| Brindled Beauty *Lycia hirtaria* | 3 | 2018 | Within 2 km | ✓ | |
| Broom moth *Melanchra pisi* | 6 | 2018 | Within 2 km | ✓ | |
| Buff ermine *Spilosoma lutea* | 31 | 2018 | Within 2 km | ✓ | |
| Centre-barred Sallow *Atethmia centrago* | 11 | 2018 | Within 2 km | ✓ | |
| Cinnabar *Tyria jacobaeae* | 2 | 2018 | Within 2 km | ✓ | |
| Dot moth *Melanchra persicariae* | 32 | 2018 | Within 2 km | ✓ | |
| Double Dart *Graphiphora augur* | 1 | 2014 | Within 2 km | ✓ | |
| Dusky brocade *Apamea remissa* | 15 | 2017 | Within 2 km | ✓ | |

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance | Legislation & Conservation Status |
|---|---|---|---|---|---|
| Dusky thorn *Ennomos fuscantaria* | 14 | 2018 | Within 2 km | ✓ | |
| Feathered Gothic *Tholera decimalis* | 2 | 2018 | Within 2 km | ✓ | |
| Ghost moth *Hepialus humuli* | 17 | 2018 | Within 2 km | ✓ | |
| Green-brindled Crescent *Allophyes oxyacanthae* | 2 | 2018 | Within 2 km | ✓ | |
| Knot grass *Acronicta rumicis* | 1 | 2013 | Within 2 km | ✓ | |
| Latticed heath *Chiasmia clathrata* | 3 | 2017 | Within 2 km | ✓ | |
| Mottled rustic *Caradrina morpheus* | 17 | 2018 | Within 2 km | ✓ | |
| Mouse moth *Amphipyra tragopoginis* | 17 | 2018 | Within 2 km | ✓ | |
| Powdered Quaker *Orthosia gracilis* | 4 | 2014 | Within 2 km | ✓ | |
| Rosy rustic *Hydraecia micacea* | 7 | 2018 | Within 2 km | ✓ | |
| September Thorn Ennomos erosaria | 2 | 2018 | Within 2 km | ✓ | |
| Shaded broad-bar *Scotopteryx chenopodiata* | 1 | 2018 | Within 2 km | ✓ | |
| Small Heath Coenonympha pamphilus | 1 | 2014 | Within 2 km | ✓ | |
| Spinach Eulithis mellinata | 1 | 2018 | Within 2 km | ✓ | |
| Swallow Cirrhia icteritia | 2 | 2017 | Within 2 km | ✓ | |
| White ermine *Spilosoma lubricipeda* | 15 | 2018 | Within 2 km | ✓ | |

### 3.6.1 Plants

SER provided two records of bluebells within 2 km of the site, but no further records of notable plant species were provided. Bluebells were recorded within all areas of lowland mixed deciduous woodland found on site. No further protected or notable plant species were recorded during the field survey. Due to the poor species diversity at site due to agricultural fertilizers and extensive grazing, and the large intervening distance between the proposed works and lowland mixed deciduous woodland, adverse effects are unlikely and further assessment is scoped out for the purpose of the report.

### 3.6.2 Fungi

No records of fungi species were provided by SER. Only turkeytail bracket fungi *Trametes versicolor* was recorded during the field survey (TN 7). Although some fungi species are visible throughout the year, April is not the optimal period for surveying fungi. Fungi are considered likely to occur within all areas of woodland recorded within the site boundary, particularly due to the amount of deadwood and mature trees. The prevalence of old semi-natural woodland, mature and likely veteran trees, particularly oak, ash, beech and birch suggest the site has the potential to support a variety of fungi species, including rare species. A buffer around trees and woodland was implemented to avoid impact from infrastructure.

### 3.6.3 Invertebrates

SER provided 287 records of 43 invertebrate species within 2 km of the site; six of which are Species of Principal Importance (SPI).

Invertebrates recorded during the field survey included common carder bumblebee *Bombus pascuorum,* buff-tailed bumblebee *Bombus terrestris*, white-tailed bumblebee *Bombus lucorum*, red-tailed bumblebee *Bombus lapidaries,* early mining bee *Andrena haemorrhoa* and small tortoiseshell butterfly *Aglais urticae*. Approximately 20 unidentified solitary bees were recorded nest prospecting on a small earth bank bordering a pond (TN 15). Bee banks have been added to the Application Site as shown in LEMP, figure 19.

### 3.6.4 Great Crested Newt

SER identified six records of GCN within 2 km of the site. A total of 23 ponds are present within site and the 250 m buffer zone. Nine suitable standing waterbodies for GCN were identified within the site and a further three immediately adjacent to the site boundary. Habitat Suitability Index (HSI) assessments were conducted for these twelve ponds during the field survey. The results of the HSI assessments are summarised in Table 9.

*Table 9: Great Crested Newt Habitat Suitability Index Assessments.*

| Pond No. | Central Grid Reference | HSI Score | Pond Suitability |
|---|---|---|---|
| 1 | SJ 95519 39202 | 0.78 (0.77 < 0.85) | Good |
| 2 | SJ 95673 39163 | 0.66 (0.63 <0.77) | Average |
| 3 | SJ 95639 39128 | 0.5 (0.49 < 0.63) | Below average |
| 4 | SJ 95793 39058 | 0.48 (<0.49) | Poor |
| 5 | SJ 95596 38999 | 0.53 (0.49 < 0.63) | Below average |
| 6 | SJ 95488 38969 | 0.82 (0.77 < 0.85) | Good |
| 7 | SJ 95331 39154 | 0.59 (0.49 < 0.63) | Below average |
| 8 | SJ 95388 39413 | 0.52 (0.49 < 0.63) | Below average |
| 9 | SJ 95940 39383 | 0.79 (0.77 < 0.85) | Good |
| 10 | SJ 95911 39362 | 0.62 (0.49 < 0.63) | Average |
| 11 | SJ 95933 39330 | 0.78 (0.77 < 0.85) | Good |
| 12 | SJ 95870 38292 | 0.36 (<0.49) | Poor |

On land, GCNs are associated with rough grassland, scrub and woodland and woodland in proximity to ponds is beneficial (Gent & Gibson, 2003). Hedgerows, woodlands and ditches also act as habitat corridors for newt movement between ponds as well as opportunities for foraging and hibernation (Langton, et al., 2001).

With the exception of two ponds (Pond 3 and Pond 4), all ponds recorded on site were associated with scrub and woodland habitats and all ponds were connected to one another through hedges and ditches allowing for newt movement and foraging, suggesting that the woodland, scrub and hedgerow habitats on site are potentially of high value to GCN.

Rough grassland is the preferred grassland habitat for GCN (Langton, et al., 2001) and the improved grassland fields that comprise most of the site are considered to be sub-optimal for GCN. They may offer some potential as a refuge and a means of dispersal for GCN, but foraging opportunities are likely limited due to a potential lack of invertebrate forage.

### 3.6.5 Reptiles

No records of reptiles were provided by SER within 2 km of the site.

Reptiles prefer a mosaic of habitats with vegetation cover for foraging, open areas for basking and hibernacula (e.g. drystone walls, piles of vegetation or stones). The areas of scrub and hedgerows are considered to have moderate suitability for species such as common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* but reptiles are generally found in rough grassland and heaths with a diverse vegetation structure often in proximity to other reptile populations. The improved/modified character of the grassland habitats within the site and the wider landscape and isolation from other suitable reptile habitats suggest reptiles are unlikely to be present. Therefore, reptiles have been scoped out of any further assessment.

### 3.6.6 Breeding Birds

SER provided 240 records of 52 bird species within 2 km of the site. Birds recorded during the field survey included: lapwing *Vanellus vanellus*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, wren *Troglodytes troglodytes*, woodpigeon *Columba palumbus,* song thrush *Turdus philomelos*, Canada goose *Branta canadensis*, mallard *Anas platyrhynchos,* goldfinch *Carduelis carduelis*, long tailed tit *Aegithalos caudatus*, chaffinch *Fringilla coelebs*, buzzard *Buteo buteo*, chiffchaff *Phylloscopus collybita*, jay *Garrulus glandarius*, great spotted woodpecker *Dendrocopos major,* dunnock *Prunella modularis*, nuthatch *Sitta europaea,* carrion crow *Corvus corone,* magpie *Pica pica* and pied wagtail *Motacilla alba.*

The majority of the bird species recorded during the field survey are known to nest in woodland, hedgerow and scrub habitats and are likely nesting on site. Nests of various bird species were recorded within trees and hedgerows across the site (e.g. Target Notes 4, 5, 9, 11, 22 and 28).

Lapwing, mallard and Canada goose are ground nesting species; a Canada goose nest was recorded within an area of woodland to the south of the site (TN 21). Lapwing were recorded displaying above a field to the south of the site (TN 32), however, the field was being prepared for reseeding through herbicide application and manure application and was therefore likely to have been ploughed shortly after the survey.

### 3.6.7 Bats

**Roosting Bats**

SER provided no records of roosting bats within 2 km of the site. No buildings suitable for bats were recorded within the site boundary but numerous mature and likely veteran trees were recorded throughout the site with features considered suitable to support roosting bats; namely gaps underneath the bark, dead wood and holes. Trees noted to have high, moderate or low potential for roosting bats were generally target noted (Table 10) but due to the numerous trees within hedgerows and within the areas of woodland, it was not possible to assess the suitability of every tree to support roosting bats.

*Table 10: Target noted trees with bat roost potential.*

| Bat Roost Potential | Target Noted Trees |
|---|---|
| High | 1, 2, 13, 19, 23, 24, 26, 27, 29, 30, 31 |
| Moderate | 17, 20 |
| Low | 12, 14. |

**Commuting and Foraging Bats**

SER provided 30 records of four bat species within 2 km of the site: brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus* as well as some unidentified bat species. The site is considered to be of 'High' suitability for commuting and foraging bats due to the number of linear features, particularly hedgerows, woodland edge, scrub and lines of trees throughout the site. The ponds within, and adjacent to, the site also provide suitable foraging opportunities for bats. The prevalence of native woodland and hedgerows also provides good habitat connectivity to other suitable commuting and foraging habitat for bats within the wider landscape.

### 3.6.8 Badger

**See Appendix C for Confidential Report**

### 3.6.9 Otter

SER provided 5 records of otter within 2 km of the site with the nearest record associated with the River Blithe located 0.3 km to the east. No evidence of otter was recorded during the field survey, but the site is hydrologically connected to the River Blithe by an unnamed burn which runs west to east in the northern part of the site, north-east of Little Leacroft Farm. The unnamed burn is narrow (<1 m) and shallow and lacks banks of a sufficient height to support breeding holts and is considered unlikely to support fish; however, the burn has the potential for temporary resting places for otter. The open nature of much of the rest of the site in combination with a lack of watercourses makes it largely unsuitable for otter.

### 3.6.10 Water Vole

No records of water vole *Arvicola amphibius* were provided by SER nor was any evidence of water vole (burrows, latrines or feeding signs) found within the survey area. Although there were numerous ditches recorded throughout the site, these were considered to lack sufficient water levels for water vole (most were dry) and lacked sufficient riparian vegetation for both foraging and vegetation cover.

Although the unnamed burn to the north of the site was narrow, slow flowing and had a variety of riparian vegetation, it lacked banks of a sufficient height for burrowing water vole. Water vole have therefore been scoped out of any further assessment.

### 3.6.11 Dormice

No records of hazel dormice *Muscardinus avellanarius* were provided by SER and further searches of NBN Atlas did not find any records of hazel dormice within 10 km of the site.

Up until 2006 there were two known native dormouse populations in Staffordshire, but none were recorded in the county in 2012 and only two nests were found at a site in the west of the county in 2013 (People's

Trust for Endangered Species, 2019). A reintroduction project within Hamps Valley, approximately 20 km to the north-west of the site, introduced 35 dormice into an area of hazel and hawthorn coppice and scrub; nut evidence is still occasionally found within the woodland but no further evidence has indicated that the population persists (People's Trust for Endangered Species, 2019). The site is not ecologically connected to either of these dormouse populations.

The optimal habitats for dormice is extensive ancient semi-natural woodland and coppiced woodland with a good population of hazel and sweet chestnut trees (English Nature, 2006). Species such as hazel, oak, bramble and honeysuckle are all valuable food sources for hazel dormouse, all of which were found on site. Hazel was not prevalent, however, nor was any evidence of coppicing recorded during the field survey. Native hedgerows are also valuable habitats for dormice due to the provision of flowers, fruits, nuts and seeds respectively; flailing reduces the suitability of hedgerows for dormice, however, as it reduces both food availability and overall cover. Most of the hedgerows to the north of the site had been heavily flailed whereas many to the south of the site remained uncut.

Habitats found within the site, particularly the areas of lowland beech and yew woodland, other lowland mixed deciduous woodland, hedgerow and scrub, have the potential to support a population of dormice but they are likely sub-optimal due to many hedges being flailed on an annual basis and the comparatively isolated and small nature of the woodlands found on site. On the basis of these sub-optimal habitats and the lack of ecological connectivity to known hazel dormouse populations, it is considered unlikely that hazel dormouse occur on site. Dormouse have thus been scoped out of any further assessment.

### 3.7 Importance of Ecological Features

In accordance with the CIEEM Guidelines and based on the above baseline information, each ecological feature recorded within the study area is considered to have the following importance (Table 11):

*Table* 11*: Importance of Ecological Features.*

| Feature | Importance | Rationale |
|---|---|---|
| Barlaston and Rough Close Common LNR | National Importance | Designated for lowland heathland habitats. |
| Coyney Woods LNR | National Importance | Designated for three areas of woodland of varying species composition. |
| Hulme Quarry NNR & SSSI | National Importance | Designated for geological exposures as well as grassland, heathland and woodland habitats. |
| New Inn BAS | County Importance | Semi-improved grassland with a wet ditch and species-poor hedges with mature hedgerows trees. |
| Mount Pleasant LWS | County Importance | Semi-improved neutral grassland; smaller field to the north-west contains a pond with diverse marginal and some aquatic vegetation. |
| Blythe Bridge Woods BAS | County Importance | Small area of oak and ash woodland. North-west of the site is planted oak with alder, horse chestnut and occasional crack willow. |
| Stallington Heath LWS | County Importance | A small area of woodland. |
| Blacklake plantation BAS | County Importance | Remnants of heathland origins evident in acidic ground flora. Canopy of oak and birch. |
| Plants | Local Value | Bluebells were recorded within all areas of woodland found on site. Woodland flora has been influenced by grazing and fertiliser application. |

| Feature | Importance | Rationale |
|---|---|---|
| Fungi | Local Value | Habitats on site, particularly semi-natural woodland, mature and likely veteran trees are considered highly suitable for a range of fungi species and they have the potential to support rare species. |
| Lowland beech and yew woodland & other lowland mixed deciduous woodland | Local Value | Semi-natural woodlands with native mature trees, understory regeneration and native ground flora. |
| Hedgerows | Local Value | Native hedgerows of varying condition offering foraging opportunities for invertebrates, small mammals and birds as well as a suitable nesting habitat, protective cover from predators and a wildlife corridor for small mammals. |
| Mixed scrub | Site value | Native mixed scrub offering cover and foraging opportunities for invertebrates, small mammals and birds as well as a suitable nesting habitat. |
| Invertebrates | Local value | The variety of native species found across the site, particularly in woodland, scrub, and hedgerow habitats, provide foraging opportunities for a range of invertebrates, caterpillar and moth food plants and dead wood for Saproxylic. |
| Great crested newts | To be established through further assessment, as recommended in Section 4.4.2. | 12 ponds within the site and a further 11 and 12 ponds were identified within 250 m and 500 m respectively. Woodland, scrub and hedgerow terrestrial habitats within the site considered suitable for GCN. |
| Breeding birds | Local value | Woodland, hedgerow and scrub habitats found within the site are considered highly suitable for a range of breeding bird species. |
| Roosting bats | Likely Local value – further assessment required if potential roosts directly impacted. | Numerous mature and veteran trees found within woodlands and hedgerows throughout the site with the potential to support roosting bats. |
| Commuting and foraging bats | Local value | Numerous linear features in the form of woodland edges and hedgerows found throughout the site considered highly suitable for commuting and foraging bats. Bats considered likely to forage above ponds found across the site. |
| Badger | Likely Local value - further mitigation recommended | Badger setts noted within the site boundary. Badgers prefer a habitat that is a mix of woodland and open country; habitats within the site and wider landscape are considered suitable for foraging badger. |
| Otter | Local value | The unnamed burn to the north of the site has the capacity to support temporary resting places for otter but not foraging or breeding otter. |

# Section 4.0: Discussion & Recommendations

## 4.1 Designated Sites

Two statutory designated sites were identified within 5 km of the site boundary: Barlaston and Rough Close Common LNR, located 2.7 km to the west and Coyney Woods LNR, located 4.1 km to the north-west. Barlaston and Rough Close Common LNR is designated for its lowland heath habitats whereas Coyney Woods LNR is designated for a range of woodland habitats. Both LNRs are ecologically separated from the site by the villages of Meirheath and Blythe Bridge respectively, as well as the outer fringes of the city of Stoke-on-Trent. Based on this lack of ecological connectivity, **no adverse impacts** on the Barlaston and Rough Close Common LNR or the Coyney Woods LNR are anticipated.

Hulme Quarry NNR and SSSI, located 5.2 km to the north-west, is designated for its geology as well as its grassland, heathland and woodland habitats. Hulme Quarry is not hydrologically nor ecologically connected to the site and the village of Blythe Bridge and the outer fringes of the city of Stoke-on-Trent lie between Hulme Quarry and the site. Due to the lack of ecological connectivity distance between Hulme Quarry and the site, **no adverse impacts are anticipated** on the Hulme Quarry NNR and SSSI as a result of the proposed development.

## 4.2 Non-Statutory Designated Sites

New Inn BAS, located 0.5 km to the east of the site, is designated for a complex of semi-improved grassland habitats with wet ditches, species-poor hedges and mature hedgerow trees and is ecologically connected to the site via hedgerows. Approximately 90 m of hedgerow will be removed as part of the proposed development, to allow for site access and access between different land ownerships. On this basis**, no adverse impacts are anticipated** on the New Inn BAS nor on the ecological networks of the local area.

Mount Pleasant LWS, located 0.6 km south, is designated for semi-improved neutral grassland and a small pond with diverse marginal and aquatic vegetation. It is ecologically connected to the site via hedgerows. It is anticipated that approximately 90 m of hedgerow is to be removed as part of the proposed development, to allow for access. On this basis, **no adverse impacts are anticipated** on the Mount Pleasant LWS nor on the ecological networks of the local area.

Hose Wood LWS and Ancient Woodland Inventory site, located 1.1 km to the south-east, is designated for its remnants of ancient semi-natural woodland, much of which has been cleared through reclamation schemes, to provide grazing land for the adjacent farms. It is ecologically connected to the site via hedgerows. Approximately 90 m of hedgerow is to be removed as part of the proposed development, to allow for access. On this basis, **no adverse impacts are anticipated** on Hose Wood LWS nor on the ecological networks of the local area.

Blythe Bridge Woods BAS, located 1.4 km to the north, is designated for oak and ash woodland. It is ecologically separated from the site by the town of Blythe Bridge to the north of the site. On this basis, **no adverse impacts are anticipated** on Blythe Bridge Woods BAS.

Stallington Heath LWS, located 1.7 km south-west, is designated for a small area of woodland. There is limited ecological connectivity to the site via hedgerows but otherwise Stallington Heath LWS is separated from the site by the village of Fulford. **No adverse impacts are anticipated** on Stallington heath LWS.

Blacklake Plantation BAS, located 1.8 km to the west, is designated for being a former Meir Heath that has been replanted with trees but retains heathland plants within the ground flora. There is limited ecological connectivity to the site via hedgerows, but no similar plant assemblages were recorded within the site boundary. **No adverse impacts are anticipated** on the Blacklake Plantation BAS.

### 4.3 Habitats

The grassland habitats found on site have been improved through the application of fertilisers and grazing which has impacted the diversity of plant species present. All grasslands recorded within the site are species-poor and of little ecological value and do not present a significant limitation to the proposed development. Potential enhancements for grassland habitats to benefit wildlife are summarised in Section 4.6 and shown in in the Landscape and Ecological Management Plan (LEMP), figure 19.

Hedgerows recorded throughout the site consisted of native species and consistently contained mature trees. Condition assessments were conducted on all hedges using DEFRA Biodiversity Metric 4.0 guidance (Natural England, 2023). Condition assessments consistently found that many hedgerows, particularly to the north of the site, had been subjected to a hard cut/flail which had reduced overall height and width to below 1.5 m, contained gaps and lacked a natural vegetation buffer between the field and the field. By comparison, many of the hedgerows in the south of the site had been completely unmanaged.

Native hedgerows are of ecological value to a variety of wildlife, acting as corridors for wildlife movement, cover from predators, nesting habitat for birds, invertebrate forage and berry and nut forage for birds and mammals. Thorny hedges in particular can protect young trees from grazing and can host a variety of plants beneficial for pollinators. Potential enhancements to hedgerow habitats to benefit wildlife are summarised in Section 4.6 and is shown in LEMP, figure 19.

All areas of woodland found on site are potentially of value for a range of wildlife, including nesting birds, bats, mammals and invertebrates. It is understood that no tree felling, or woodland clearance will take place as part of the proposed development. Nonetheless, it is recommended that all areas of woodland are retained and enhanced where possible. All areas of woodland had evidence of some degree of impact from the application of fertilisers or grazing pressure, which had influenced the ground flora as well as the understory vegetation. Potential enhancements to woodland habitats to benefit wildlife are summarised in Section 4.6 and can is shown in the LEMP, figure 19.

### 4.4 Protected and Notable Species

#### 4.4.1 Invertebrates

The hedgerows and woodlands within the site boundary have potential ecological value for invertebrates due to the variety of native flowering and fruiting species present, the presence of butterfly and moth caterpillar foodplants (nettles, brambles and grasses) and dead wood for saproxylic species. Agricultural improvements within the grassland habitats have led to a less biodiverse sward although flowering species such as clovers and buttercups persist and are beneficial for pollinators. A third of wild bee and hoverfly species are in decline across the UK due to habitat loss, pesticide use and climate change (Powney, et al., 2019) and therefore all habitats of benefit to pollinators hold ecological value.

Numerous plant species were recorded throughout the site boundary which are beneficial to pollinators and/or as caterpillar foodplants; these include bird cherry, red campion, bluebell, blackthorn, gorse, hawthorn, hedge woundwort, all willow species, cuckoo flower, rosebay willowherb and nettles.

The impact on invertebrates is anticipated to be negligible if woodland and hedgerows are retained (excluding the small areas to be removed for access). Potential enhancements, as discussed in Section 4.6, including hedgerow enhancement, wildflower meadow creation and enhancement of existing woodland would benefit local invertebrates.

### 4.4.2 Great Crested Newt

HSI assessments of the twelve ponds within the site boundary or immediately adjacent to it determined two ponds to be 'Poor', four ponds to be 'Below average', two 'Average' and four 'Good' for GCN. A further eleven and twelve ponds were identified within 250 m and 500 m of the site boundary respectively, but were not accessed due to not being granted access by landowner at time of the field survey. It is anticipated that all ponds along with better quality terrestrial habitat (hedgerows, woodland, scrub) for GCN are to be retained and only the improved grasslands are to be developed. Improved grassland habitats are considered to be sub-optimal for GCN due to regular cutting, lack of dense cover and because they likely support lower populations of prey. However, GCN may use this type of habitat for dispersal, foraging and/or refuge. Impacts on the improved grassland are anticipated to be temporary and limited to the construction phase only; the foraging habitat quality for GCN should improve post development if the potential enhancement measures, as discussed in Section 4.6, are implemented.

A District Level Licensing (DLL) scheme for GCN is operated in Staffordshire by NatureSpace Partnership and covers the site. It is currently considered likely that GCN mitigation will be achieved through DLL as opposed to carrying out detailed surveys and has been applied for in November 2023.

Further 'designed-in' avoidance measures to protect GCN includes the retention of all ponds within the site boundary together with the retention of woodland, scrub and hedgerow habitats (approximately 90 m of hedgerow will be removed). This would be combined with additional construction phase mitigation: staged vegetation clearance to allow for newt dispersal, hand-searching for newts ahead of vegetation-clearance works where appropriate and the removal of potential hibernation features (e.g. sections of the hedgerow to be removed) from the development area during active season (February – October). If works have to be complete within the active season, this can be mitigated via a watching brief by an ECoW.

The requirements of GCN and other amphibians would be factored into management of the operational development including timing of any mowing operations and provision/maintenance of additional resting places.

### 4.4.3 Breeding Birds

Woodland bird species are considered likely to nest within the areas of woodland, scrub and hedgerow found throughout the site; all areas of woodland, scrub and hedgerow will be retained in order to avoid adverse impacts on breeding birds and their chicks.

It is understood that 90 m of hedgerow will be removed for site access. It is recommended that these works are scheduled outside of breeding bird season (March – August inclusive) in order to prevent disturbance to nesting birds. If this is not possible, all hedgerows to be removed should be checked for nesting birds by an ECoW ahead of any vegetation clearance works and appropriate exclusion zones implemented if nests are found.

The grassland habitats on site are considered largely unsuitable for ground-nesting species but lapwing were recorded displaying above a field to the south of the site. The field was being prepared for reseeding through herbicide and manure application and will have likely been ploughed shortly after the survey. Lapwing prefer a short vegetation sward for nesting; ploughing and the subsequent rapid regrowth of the grass within this field may deter lapwing but they may nest in this area whilst the grass height is low. It is recommended that works are scheduled outside of breeding bird season (March – August inclusive), in order to prevent disturbance to potential ground-nesting lapwing. If not possible, all habitat areas with the potential for breeding birds should be checked for nesting birds by an ECoW ahead of any vegetation clearance works and appropriate exclusion zones implemented if nests are found.

### 4.4.4 Bats

#### 4.4.4.1 Roosting Bats

Numerous mature and some likely veteran trees with suitable features to support roosting bats were recorded throughout the site within areas of woodland or within hedgerows. Due to the frequency of trees within hedgerows and within the areas of woodland, it was not possible to assess the suitability of every tree to support roosting bats.

It is understood that the proposed development is not likely to require any tree felling and the layout plan has been adjusted to allow 30 m buffer to any bat roost potential trees highlighted from the field survey, therefore there should have a limited impact on roosting bats. Should the proposed works change to include any felling or pruning of any highlighted trees further survey effort would be required.

Permanent lighting should be kept to an absolute minimum and be designed to be 'bat friendly' and should not illuminate bat commuting, foraging and roosting habitats including woodland, hedgerows, scrub, lines of trees and ponds. There will be no artificial lighting around the site as CCTV is inward facing infra-red. However, floodlights are to be used for infrequent maintenance and operational activities only. Lighting will be manually controlled rather than PIR, in order to prevent unnecessary activation. Screening techniques and dark buffer zones are advised to reduce the impact on these habitats. Low or high pressure sodium lamps instead of mercury and metal halide lamps are preferred for their UV filtering properties, reducing light spillage and pollution (Straka, et al., 2019).

#### 4.4.4.2 Commuting and Foraging Bats

Habitats within the site boundary are considered highly suitable for commuting and foraging bats due to the prevalence of native woodland, hedgerow and open water and their connectivity to similar habitats within the wider landscape.

It is understood that no tree felling and only a limited amount of hedgerow removal is anticipated as a result of the proposed development. The key bat commuting and foraging corridors would therefore be maintained and, aside from a small amount of temporary disturbance, no overall decline in the quality of habitats for commuting or foraging bats is anticipated for bats and no further surveys are proposed provided that any temporary or permanent lighting associated with the proposed development follows the guidance referenced in Section 4.4.4.1.

The development also has the potential to enhance the site for bats by implementing some or all of the measures set out in section 4.6.

As determined from the BNG Report, the Proposed Development would result in an overall BNG of 74.2% for habitat units and a BNG of 22.04% for hedgerow units.

### 4.4.5 Badger

**See Appendix C Confidential Report.**

### 4.4.6 Otter

The unnamed burn to the north of the site has the potential to support temporary resting places for otter but is considered unlikely to support breeding or foraging otter due to a lack of suitably sized riverbanks for holts, shallow water and a lack of pools for foraging otter. General mitigation measures, as listed in Section 4.5 are recommended in order to prevent disturbance to individual otter should they be encountered during construction works.

## 4.5 Good Practice Mitigation

The following good practice measures should be adhered to in order to avoid and mitigate construction-phase impacts on individual animals on site:

- Toolbox talks provided to site personnel should cover the potential presence of otter, bats, badgers, and breeding birds;
- Access ramps (plank of roughened wood) to be installed each night within any open trench or pit to allow any animals which may accidently fall into the excavation a means of escape;
- Daily checks of any excavations to be made prior to commencing work to ensure that no mammals have become trapped in the excavations. Should a trapped animal be found, a suitably experienced ecologist should be immediately contacted for advice;
- Any pipes with a diameter of greater than 200 mm which are stored or installed on site are to be covered or capped at night to reduce the risk of animals becoming trapped inside;
- Any animals disturbed by site works should be allowed to disperse of their own accord and should not be caught or handled.

## 4.6 Proposed Enhancements

There are some proposed enhancements that, if undertaken as part of the proposed works, could help improve the site's intrinsic value and suitability for protected and/or notable species including birds, badgers, bats and invertebrates:

- **Hedge laying, replanting and management:** It is understood that 90 m of hedgerow will be removed to facilitate access to site. All other existing hedgerows should be retained and, where appropriate, enhanced through management in order to improve overall hedge condition as well as the wider ecological benefits to wildlife. Potential management options include:
    - Hedge laying or coppicing to eliminate gaps;
    - Additional planting of shrubs or trees where vegetation within the field margin is not continuous enough meet the definition of a hedgerow;
    - Cut hedges every other year (some species flower and fruit on the previous year's growth) and in late winter after berries, fruits and nuts have been eaten by wildlife. Avoid cutting hedges to same height and width each time as this makes the stems woody and less likely to regrow; and
    - Planting of flowering climbers into already established hedges e.g. honeysuckle and dog rose.
- **Existing woodland enhancement:** The following enhancement measures are suggested for woodlands within the site:
    - Exclude all livestock from woodlands to allow for natural regeneration of woodland flora;
    - Reduce or eliminate the application of fertilisers on the site following decommissioning; and
    - Leave dead wood in-situ, wherever possible, to benefit fungi and saproxylic invertebrate species. Piles of dead wood would also act as potential refugia for GCN.
- **Creation of wildflower meadow areas:** Re-establishing native wildflower meadows is difficult in a context where a field has been subjected to repeated fertiliser application. Introduction of species such as yellow rattle, considered a 'wildflower meadow-maker'; a parasitic plant which takes nutrients from grass roots, weakening the grasses present, allowing for a natural regeneration of wildflowers. This process could be enhanced further with the application of native wildflower seed mixes (local seed stocks preferable) or green hay and the adoption of a wildlife-friendly mowing regime with an annual cut.
- **Pond enhancement:** Enhancement of the local ponds with the planting of various submergent aquatic vegetation such as water forget-me-not *Myosotis scorpioides*, water crowfoot *Ranunculus aquatilis* and water mint *Mentha aquatica*.
- **Creation of bee banks:** Records of solitary mining bees were obtained during the desk study and mining bee species were recorded during the field survey. Bee banks are mounds or banks of loose soil set aside for burrowing mining bees to nest.
- **Installation of bat boxes –** Bat boxes will be installed at appropriate locations which increase and enhance the current roost opportunities for bats at site.

# Section 5.0: References


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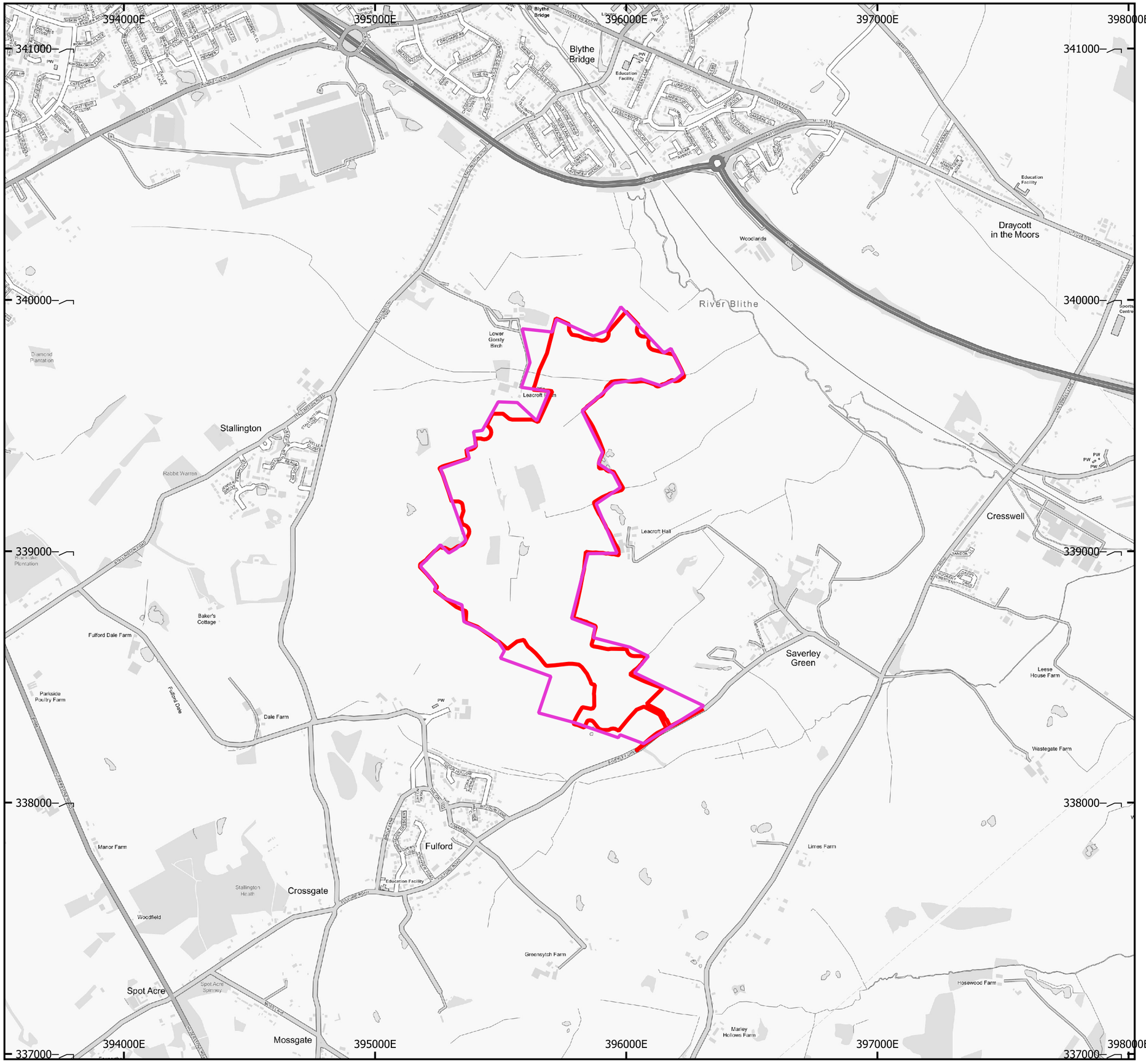
# Figures

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# LEAFORD SOLAR FARM

| RES | Figure 1 - Site Location |
|---|---|

KEY

- Site Boundary
- Survey Area

0 300 600 m

N

| Drawing Number: ECOd2013A | | Project Number: 312040 | | |
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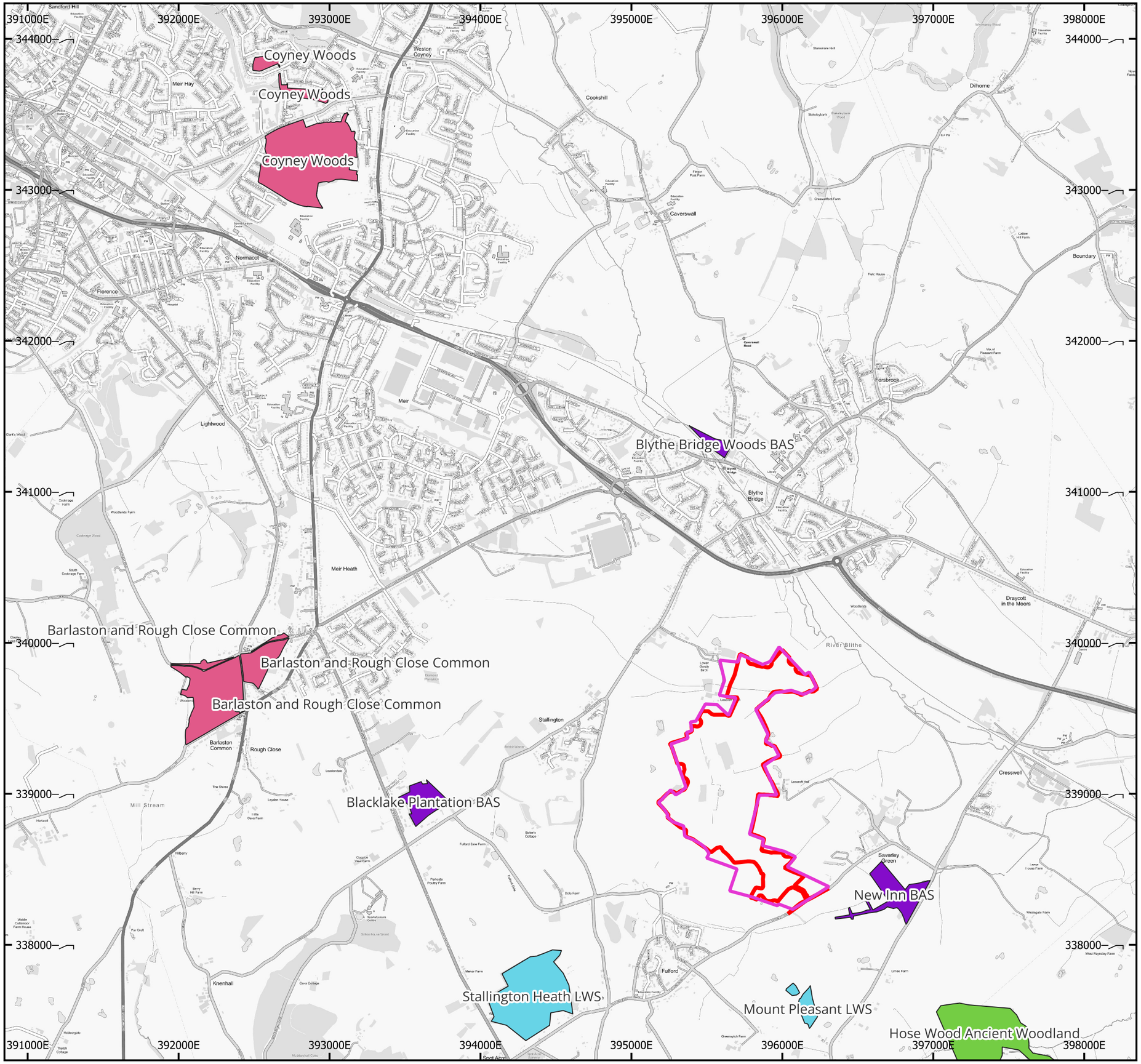




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# LEAFORD SOLAR FARM

| RES | Figure 2 - Statutory & Non-Statutory Designated Sites |
|---|---|

KEY

- Site Boundary
- Survey Area
- Barlaston & Rough Close Common LNR
- Coyney Woods LNR

Non-Statutory Designated Sites

- Ancient Woodland Inventory
- Biodiversity Alert Sites
- Local Wildlife Sites

0 500 1,000 m

N

| | | | | |
|---|---|---|---|---|
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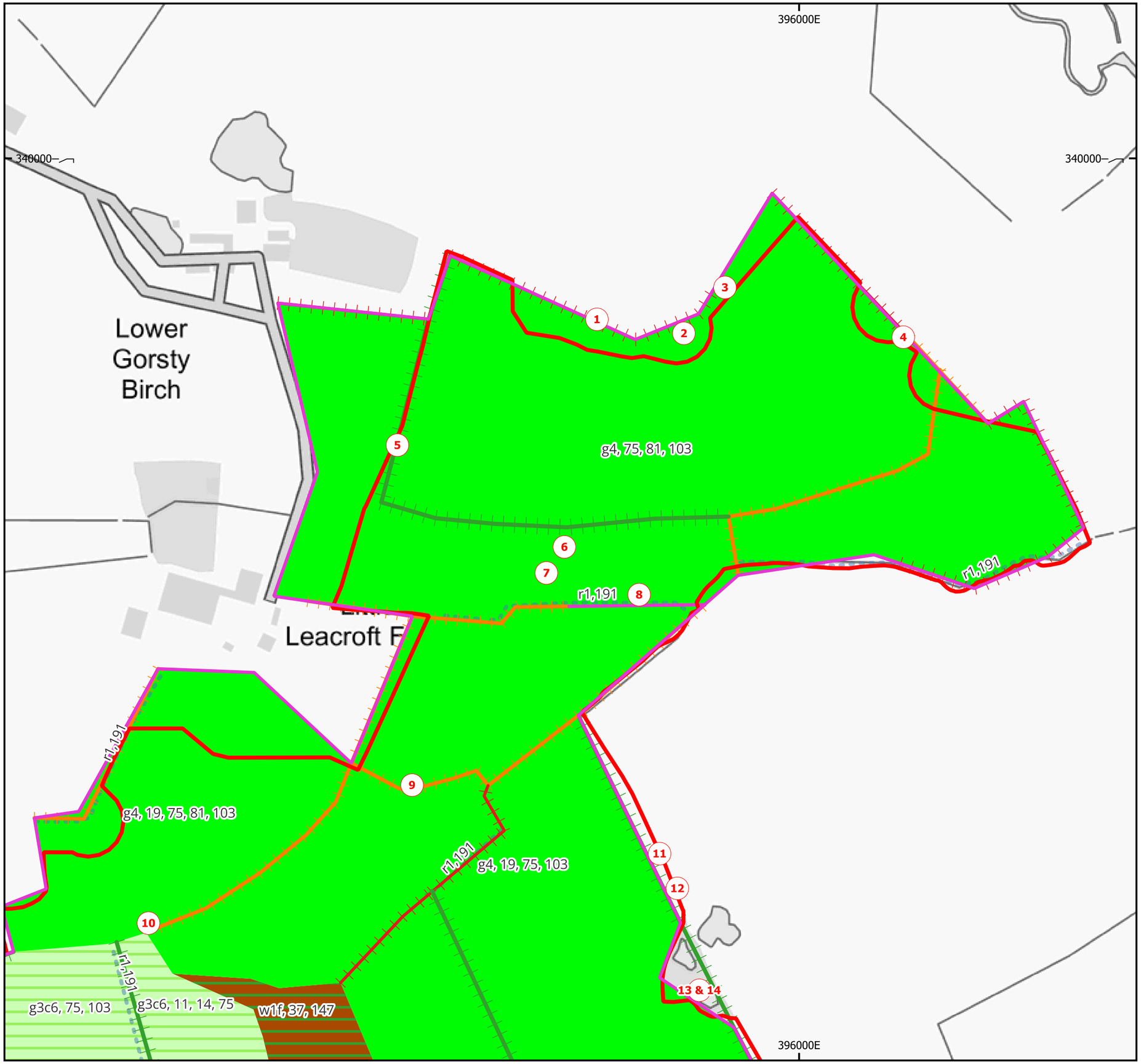




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# LEAFORD SOLAR FARM

| RES | Figure 3 - UKHab Survey Results (Map 1 of 4) |
|---|---|

KEY

- Site Boundary
- Survey Area

Habitats

- w1f Lowland mixed deciduous woodland
- g4 Modified grassland
- g3c6 Other neutral grassland
- r1 Ditches

h2a Hedgerows (Priority Habitat)

- Good Condition
- Moderate Condition

h2b Other Hedgerows

- Poor Condition
- w1g6 Line of trees

Target Notes

- Target Note

| Secondary Code | Description |
|---|---|
| 11 | Scattered Trees |
| 14 | Scattered Rushes |
| 19 | Ponds (Priority Habitat) |
| 37 | Semi-Natural Woodland |
| 49 | Veteran Trees |
| 75 | Active Management |
| 81 | Flailed Hedgerow |
| 103 | Permanent Agricultural Grassland |
| 147 | Fallen Dead Wood Abundant |
| 191 | Ditches |

0 60 120 m

N

| Drawing Number: ECOd2014A | | Project Number: 312040 | | |
|---|---|---|---|---|
| SHEET: A3 | SCALE: 1:3,000 | BY: BC | QA: RM | REV: 2.0 |
| Projection: OSGB 1936/British National Grid - EPSG 27700 | | Issue Date:22/11/2023 | | |

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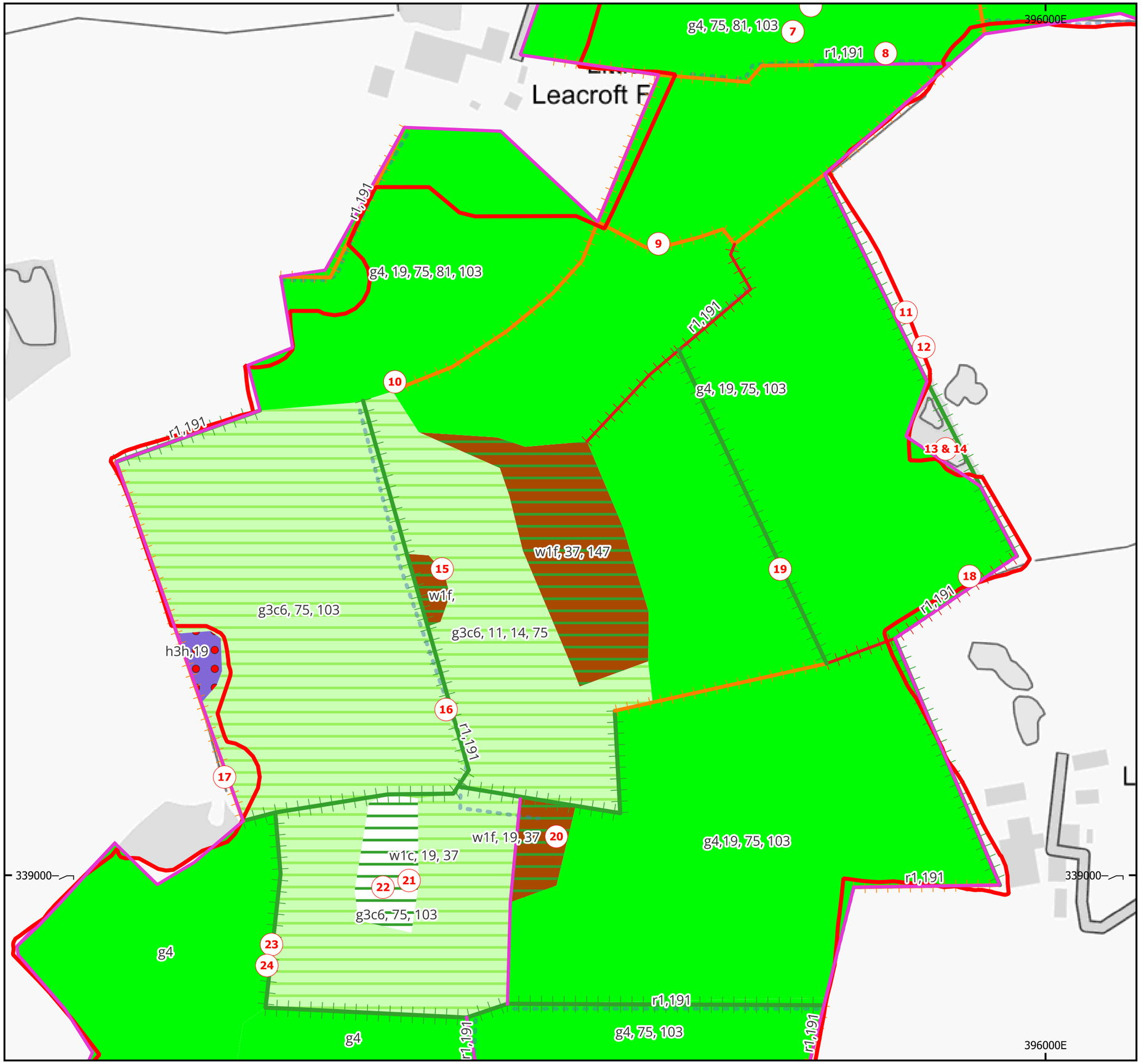
# LEAFORD SOLAR FARM

| RES | Figure 3 - UKHab Survey Results (Map 2 of 4) |
|---|---|

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KEY

- Site Boundary
- Survey Area

Habitats

- w1c Lowland beech and yew woodland
- w1f Lowland mixed deciduous woodland
- h3h Mixed scrub
- g4 Modified grassland
- g3c6 Other neutral grassland
- r1 Ditches

h2a Hedgerows (Priority Habitat)

- Good Condition
- Moderate Condition

h2b Other Hedgerows

- Poor Condition
- w1g6 Line of trees

Target Notes

- Target Note

| Secondary Code | Description |
|---|---|
| 11 | Scattered Trees |
| 14 | Scattered Rushes |
| 19 | Ponds (Priority Habitat) |
| 37 | Semi-Natural Woodland |
| 49 | Veteran Trees |
| 75 | Active Management |
| 81 | Flailed Hedgerow |
| 103 | Permanent Agricultural Grassland |
| 147 | Fallen Dead Wood Abundant |
| 191 | Ditches |

0 60 120 m

N

| Drawing Number: ECOd2014A | | Project Number: 312040 | | |
|---|---|---|---|---|
| SHEET: A3 | SCALE: 1:3,000 | BY: BC | QA: RM | REV: 2.0 |
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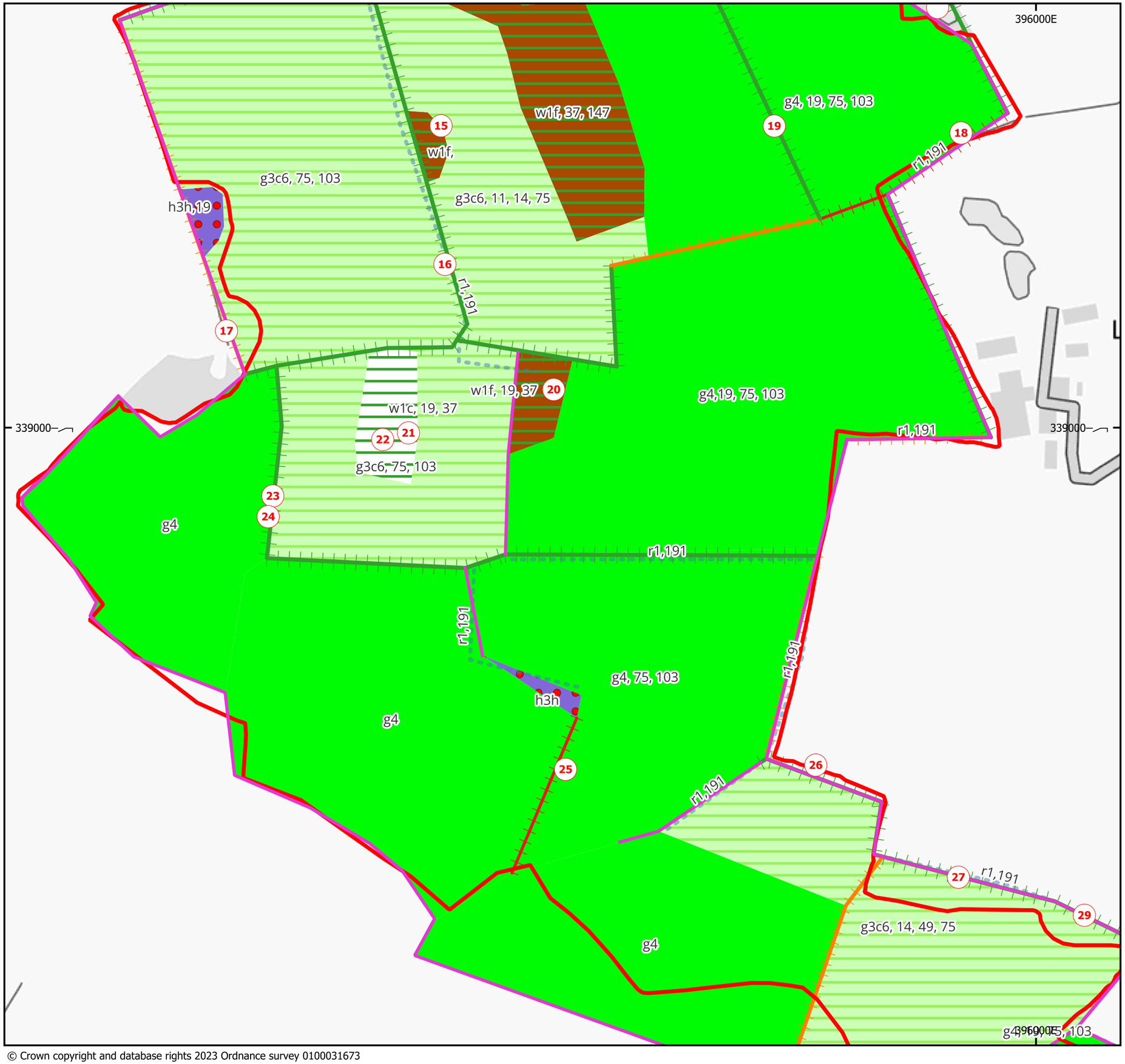




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# LEAFORD SOLAR FARM

| RES | Figure 3 - UKHab Survey Results (Map 3 of 4) |
|---|---|

KEY

- Site Boundary
- Survey Area

Habitats

- w1c Lowland beech and yew woodland
- w1f Lowland mixed deciduous woodland
- h3h Mixed scrub
- g4 Modified grassland
- g3c6 Other neutral grassland
- r1 Ditches

h2a Hedgerows (Priority Habitat)

- Good Condition
- Moderate Condition

h2b Other Hedgerows

- Poor Condition
- w1g6 Line of trees

Target Notes

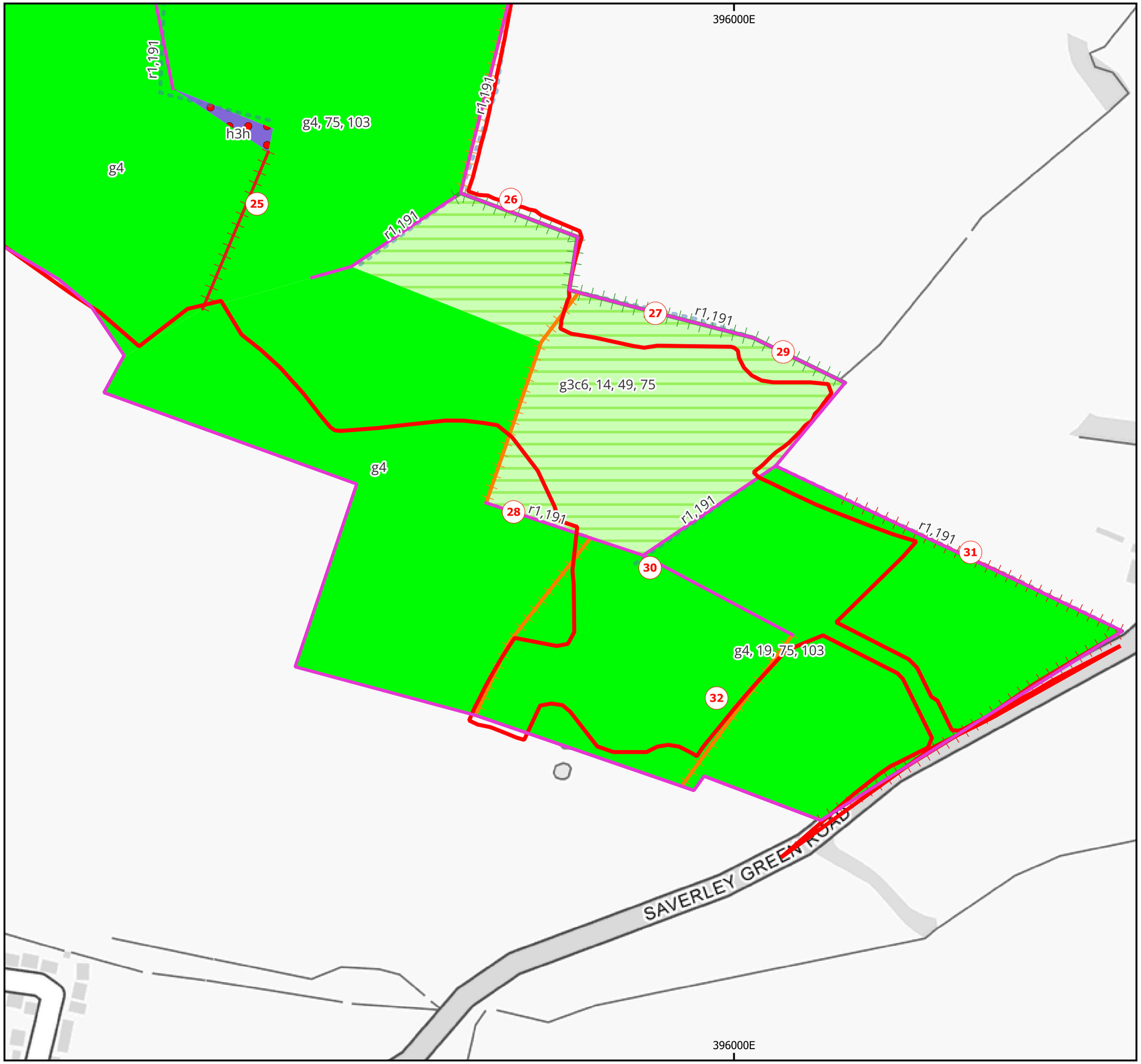
- Target Note

| Secondary Code | Description |
|---|---|
| 11 | Scattered Trees |
| 14 | Scattered Rushes |
| 19 | Ponds (Priority Habitat) |
| 37 | Semi-Natural Woodland |
| 49 | Veteran Trees |
| 75 | Active Management |
| 81 | Flailed Hedgerow |
| 103 | Permanent Agricultural Grassland |
| 147 | Fallen Dead Wood Abundant |
| 191 | Ditches |

0 60 120 m

N

| | | | | |
|---|---|---|---|---|
| Drawing Number: ECOd2014A | | Project Number: 312040 | | |
| SHEET: A3 | SCALE: 1:3,000 | BY: BC | QA: RM | REV: 2.0 |
| Projection: OSGB 1936/British National Grid - EPSG 27700 | | Issue Date:22/11/2023 | | |



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# LEAFORD SOLAR FARM

| RES | Figure 3 - UKHab Survey Results (Map 4 of 4) |
|---|---|

KEY

- Site Boundary
- Survey Area

Habitats

- h3h Mixed scrub
- g4 Modified grassland
- g3c6 Other neutral grassland
- r1 Ditches

h2a Hedgerows (Priority Habitat)

- Good Condition
- Moderate Condition

h2b Other Hedgerows

- Poor Condition
- w1g6 Line of trees

Target Notes

- Target Note

| Secondary Code | Description |
|---|---|
| 11 | Scattered Trees |
| 14 | Scattered Rushes |
| 19 | Ponds (Priority Habitat) |
| 37 | Semi-Natural Woodland |
| 49 | Veteran Trees |
| 75 | Active Management |
| 81 | Flailed Hedgerow |
| 103 | Permanent Agricultural Grassland |
| 147 | Fallen Dead Wood Abundant |
| 191 | Ditches |

0 60 120 m

N

| Drawing Number: ECOd2014A | | Project Number: 312040 | | |
|---|---|---|---|---|
| SHEET: A3 | SCALE: 1:3,000 | BY: BC | QA: RM | REV: 2.0 |
| Projection: OSGB 1936/British National Grid - EPSG 27700 | | Issue Date:22/11/2023 | | |

# Appendix A: Overview of Relevant Planning Policy and Legislation

This section provides an overview of the framework of legislation and policy which underpins nature conservation and is a material consideration in the planning process in England.

### National Planning Policy Framework

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply, however, where developments require appropriate assessment under the Birds or Habitats Directives.

Chapter 15, entitled 'Conserving and enhancing the natural environment', sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

The Ministry of Housing, Communities and Local Government has released guidance to support the National Planning Policy Framework (NPPF), known as the National Planning Practice Guidance (NPPG). This has been produced to provide guidance for planners and communities which will help deliver high quality development and sustainable growth in England. The guidance includes a section entitled 'Natural Environment: Biodiversity, geodiversity and ecosystems' which sets out information with respect to the following:

- The statutory basis for minimising impacts on biodiversity and providing net gains where possible;
- The local planning authority's requirements for planning for biodiversity;
- What local ecological networks are and how to identify and map them;
- The sources of ecological evidence;
- The legal obligations on local planning authorities and developers regarding statutory designated sites and protected species;
- The considerations for local (non-statutory) designated sites;
- Definition of green infrastructure;
- Where biodiversity should be taken into account in preparing a planning application;
- How development can enhance biodiversity;
- How policy is applied to avoid, mitigate or compensate for significant harm to biodiversity and how mitigation and compensation measures can be ensured; and,
- The consideration of ancient woodlands and veteran trees in planning decisions.

### Biodiversity 2020: A strategy for England's wildlife & ecosystem services

Biodiversity 2020 replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole. The priority species and habitats considered under Biodiversity 2020 are the species of principal importance & habitats of principal importance detailed under NERC Act (see below for further details).

### Local Biodiversity Action Plan

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

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

**Staffordshire Biodiversity Action Plan**

The Staffordshire Biodiversity Plan (SBAP) has been in place since 1998 and aims to work at a landscape level, or ecosystem approach and focuses conservation efforts on the areas within the county that will result in the greatest benefit for ecological networks, habitats and species. By replacing Habitat and Species Action Plans with 14 "Ecosystem Action Plans" (EAPs) and one Rivers Action Plan, the SBAP aims to prioritise conservation management at a landscape level and contribute to local, regional, and national conservation targets.

The site lies within the Central Heaths and Woods EAP; an area of settled plateau farmland with small, fragmented woodland. Priority Habitats within the Central Heaths and Woods EAP which are considered relevant to the site includes native woodland.

Species included within the EAP which are considered relevant to the site include:

- Barn owl
- Song thrush
- Spotted flycatcher
- Common lizard
- Pipistrelle bat
- Brown hare
- White-letter hairstreak butterfly
- Cuckoo
- Lapwing
- Noctule bat

**Local Plan**

**Stafford Borough Local Plan 2020-2040**

The Stafford Borough Local Plan was developed in 2020; policies considered relevant to the proposed development include:

- Policy 3: Development in the open countryside. Outside of settlement boundaries defined on the policies map, and outside of the Green Belt (within which development will be controlled in accordance with national policy), in order to protect the countryside from unnecessary and incongruous development only the following categories of development will be supported: … Renewable energy generation, in accordance with Policy 40.
- Policy 4: Climate Change development requirements. In order to demonstrate net zero carbon operational energy, all new major non-residential development must demonstrate through an energy statement, that the following have been achieved: 1. No on-site fossil fuel combustion; 2. Energy use is minimised appropriate to the end use; 3. On-site renewable energy generation is maximised, equivalent to the onsite energy demand.
- Policy 5: Green belt. Inappropriate development will not be permitted in the Green Belt unless very special circumstances exist. Development proposals, including those involving previously developed land and buildings, in the Green Belt will be assessed against the relevant national planning policy. The openness of the Green Belt will be protected from inappropriate development in accordance with national planning policy.
- Policy 9: North of Stafford. Existing hedgerows and tree lines to be retained and enhanced to support the provision of a network of green infrastructure including wetlands and water corridors, play areas, green corridors allowing wildlife movement and access to open space.
- Policy 44: Landscapes. Development shall conserve and enhance landscape and townscape character and their scenic and visual quality, avoiding significant adverse landscape or visual impacts. Development proposals must be located and designed to respect scenic quality and maintain an area's distinctive sense of place and reinforce local distinctiveness. C. Proposals which would have landscape and visual effects should protect, avoid detrimental effects on and, where appropriate, enhance: The elements of the landscape that contribute to the local distinctiveness of the area (including heritage assets, cultural character and biodiversity).
- Policy 47: Biodiversity. In accordance with national policy and legislation, planning permission will be refused for development that results in significant harm to biodiversity that cannot be avoided (by locating elsewhere), adequately mitigated, or (as last resort) compensated for.

Details of the entire Stafford Borough Local plan can be found here: https://www.staffordbc.gov.uk/sites/default/files/cme/DocMan1/Planning%20Policy/New%20Stafford%20Borough%20Local%20Plan%202020-2040/Preferred%20Options/New-Local-Plan-Preferred-Options.pdf

## General Legislation

The following present a summary of the legislation relevant to the site and proposals. It is recommended that the reader also refer to the original legislation for definitive interpretation.

### Conservation of Habitats and Species Regulations 2017, (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended), henceforth referred to as the Habitats Regulations 2017, consolidate and update the Conservation (Natural Habitats, &c.) Regulations 1994 and 2010 and all its various amendments. The Habitats Regulations 2017 are the principal means by which the European Union's ECC Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Habitats Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form the Natura 2000 network of sites. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Habitats Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. These are commonly referred to as European Protected Species. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

It is also an offence under the Habitats Regulations 2017 for any person to have in their possession or control, to transport, to sell or exchange, or to offer for sale, any live or dead protected species, part of a protected species or anything derived from a protected species, which has been unlawfully taken from the wild.

### The Wildlife and Countryside Act (WCA) 1981

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats) Regulations 2017 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species. All relevant species-specific legislation is detailed later in this Appendix.

### The Countryside rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA 1981. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

### The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance (HPI and SPI) to the conservation of biodiversity. These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.

### Wild Mammals Protection Act 1996

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

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

Its application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works, etc.

## Specific Legislation

### Herpetofauna (reptiles and amphibians)

All the UK's native reptiles and amphibians are protected by law, although their level of protection differs. The following species are European Protected Species and therefore have additional protection under the Habitats Regulations 2017 (as amended):

- Great crested newt *Triturus cristatus*.
- Pool frog *Pelophylax lessonae*.
- Natterjack toad *Epidalea calamita*.
- Sand lizard *Lacerta agilis*.
- Smooth snake *Coronella austriaca*.
- Sea turtles (*Caretta caretta*, *Chelonia mydas*, *Dermochelys coriacea*, *Eretmochelys imbricata*, *Lepidochelys kempii*).

The legal protection for these species is outlined in Section 43 of the Habitats Regulations 2017, and states that a person commits an offence if they:

- deliberately capture, injure or kill a protected species;
- deliberately disturb a protected species;
- deliberately take or destroy eggs of a protected species; or
- damage or destroy a protected species' breeding site or resting place.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring. Widespread reptile species are protected under part of Section 9(1) of the Wildlife & Countryside Act 1981 (as amended) against:

- intentional killing and injuring (note the provision in Section 9(1) of Wildlife & Countryside Act 1981 prohibiting "taking" does not apply to reptiles).

Both reptiles (adder, grass snake, common lizard, and slow worm) and amphibians (common frog, common toad, smooth newt, palmate newt) are protected via part of Section 9(5) of the Wildlife & Countryside Act 1981 (as amended) against:

- selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or in or selling, or intending to buy or sell, any of those things.

Six species of reptile excluding sea turtles (slow worm, smooth snake, sand lizard, grass snake, adder, and common lizard) and four species of amphibian (common toad, natterjack toad, pool frog and great crested newt) are listed as SPI in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and therefore are material consideration for Local Planning Authorities (LPAs) during the planning process.

**Birds**

The Wildlife and Countryside Act (WCA) 1981, as amended, protects all breeding birds in the UK with a few exceptions (i.e., sporting birds listed in Schedule 2 and for certain specified purposes under licence). The WCA makes it an offence to intentionally or recklessly:

- kill, injure or take a wild bird;
- take, damage, destroy or interfere with the nest of any wild bird whilst it is in use or being built (or at any time for a nest habitually used by any listed in Schedule A I);
- obstruct or prevent any wild bird from using its nest;
- take or destroy an egg of any wild bird;
- disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young, or whilst lekking; or
- disturb the dependent young of any wild bird listed on Schedule 1.

Recklessly in this context is to be understood as pursuing a course of action while consciously disregarding the fact that the action gives rise to a substantial and unjustifiable risk.

Schedule 1 is a list of rare breeding species that are specially protected in the UK. Two additional Schedules (Schedule 1A and A1) have been created to afford further protection to some species included on Schedule 1. This additional protection makes it an offence to intentionally or recklessly:

- at any time, damage, destroy or interfere with any nest habitually used by any wild bird included in Schedule A1; or
- at any time harass any wild bird included in Schedule 1A.

Forty-nine bird species are listed as SPI in England within Section 41 of the NERC Act 2006. This makes them capable of being material considerations in the planning process.

**Bats**

Bats and the places they use for shelter or protection (i.e., roosts) receive European protection the Habitats Regulations 2017. They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017 (as amended), states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to 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 to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 (as amended) for any person to have in their possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to intentionally kill, injure or take any protected species;
- Section 9(4)(a) of the WCA makes it an offence to intentionally or recklessly damage or destroy, or obstruct access to, any structure or place which a protected species uses for shelter or protection; and
- Section 9(4)(b) of the WCA makes it an offence to intentionally or recklessly disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

Seven bat species are listed as 'SPI' in England under Section 41 of the NERC Act 2006. These are:

- Barbastelle bat *Barbastella barbastellus*.
- Bechstein's bat *Myotis bechsteinii*.
- Noctule *Nyctalus noctula*.
- Soprano pipistrelle *Pipistrellus pygmaeus*.
- Brown long-eared bat *Plecotus auritus*.
- Greater horseshoe bat *Rhinolophus ferrumequinum*.
- Lesser horseshoe bat *Rhinolophus hipposideros*.

**Badger**

Badgers are protected in Britain by the Protection of Badgers Act 1992. The purpose of this Act is to protect the animals from deliberate cruelty and from the incidental effects of lawful activities which could cause them harm. Under this legislation it is an offence to:

- wilfully kill, injure or take a badger (or attempt to do so);
- cruelly ill-treat a badger;
- dig for a badger;
- intentionally or recklessly damage or destroy a badger sett, or obstruct access to it;
- cause a dog to enter a badger sett;
- disturb a badger when it is occupying a sett;
- have in their possession, or under their control, any dead badger or any part of, or anything derived from, a dead badger;
- use, for the purpose of killing or taking a badger, badger tongs or any firearm (see legislation for exceptions);
  sell a live badger or offers one for sale or has a live badger in their possession or under their control; or
- mark, or attaches any ring, tag or other marking device to, a badger (other than one which is lawfully in their possession by virtue of such a licence).

If any of the offences listed above resulted from a person being reckless, even if they had no intention, their action would still be considered an offence.

**Otter**

Otters are protected under sections 9 and 11 of the Wildlife and Countryside Act 1981 and also under the Habitats Regulations 2017, making then a European protected species. Under this legislation, it's an offence to:

- capture, kill, disturb or injure otters (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (deliberately or by not taking enough care);
- obstruct access to their resting or sheltering places (deliberately or by not taking enough care); or
- possess, sell, control or transport live or dead otters, or parts of otters.

Otter are listed as SPI in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and therefore are material consideration for Local Planning Authorities (LPAs) during the planning process.

**Water Vole**

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. Under this legislation, it's an offence to:

- intentionally capture, kill or injure water voles;
- damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- disturb them in a place of shelter or protection (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity).

Water vole are listed as SPI in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and therefore are material consideration for Local Planning Authorities (LPAs) during the planning process.

**Hazel Dormice**

Dormice are protected under section 5 of the Wildlife and Countryside Act 1981 and also under the Habitats Regulations 2017, making then a European protected species. Under this legislation, it's an offence to:

- deliberately kill, injure, disturb or capture them;
- damage or destroy their breeding sites and resting places;
- possess, control, transport (alive or dead);
- disturb hazel dormice while they occupy a structure or place used for shelter or protection; or
- obstruct access to a place of shelter or protection.

Hazel dormice are listed as an SPI in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and therefore are material consideration for Local Planning Authorities (LPAs) during the planning process.

# Appendix B: Target Notes and Location Plan

## Target Notes (Figure 3)

| Target Note no. | Feature |
|---|---|
| 1 | Mature ash and beech. High bat potential within beech; lots of wounds for bats and nesting birds. |
| 2 | Five mature oak trees just outside site boundary; high bat potential as plenty of wounds for bats. One tree is completely dead and extensively used by woodpeckers. Ecological value for birds, bats, invertebrates and fungi. |
| 3 | Sparrowhawk kill; dead woodpigeon. |
| 4 | Alder tree with corvid nest. |
| 5 | Chaffinch nest. |
| 6 | Prolific Himalayan balsam. |
| 7 | Turkeytail bracket fungi on oak stump. |
| 8 | Bluebells within line of trees. |
| 9 | Bird nest in tree; likely woodpigeon. |
| 10 | Ash tree with dieback; notable as many ash trees seen and most mature trees do not have evident dieback. |
| 11 | Corvid nest in tree. |
| 12 | English oak with low bat potential. |
| 13 | English oak with high bat potential. |
| 14 | Silver birch with low bat potential. |
| 15 | Earth bank bordering pond being used by solitary mining bees for nesting; approximately 20 individuals seen. |
| 16 | Large-leaved lime tree. |
| 17 | Several mature ash trees within hedge line. No dieback apparent. Moderate bat potential. |
| 18 | Himalayan balsam in ditch. |
| 19 | Mature English oak with high bat potential. |
| 20 | Moderate bat roost potential. |
| 21 | Canada goose nest with eggs. |
| 22 | Nest in beech tree. Likely corvid but possibly buzzard. |
| 23 | Mature ash tree – high bat potential. |
| 24 | Mature oak tree with high bat potential. |
| 25 | Two buzzards flying overhead. |
| 26 | Veteran English oak with high bat roost potential. |
| 27 | Veteran English oak with high bat roost potential. |
| 28 | Corvid nest in tree. |
| 29 | Veteran English oak with high bat potential. |
| 30 | Mature/veteran oak tree with high bat potential and opportunities for nesting birds. |
| 31 | English oak with high bat potential. |
| 32 | Pair of displaying lapwing. |