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Hole Farm Woodland Creation Project

Preliminary Ecological Appraisal Survey (June 2021)

The Preliminary Ecological Appraisal Survey was produced by Sonar Ecology in June 2021 prior to the design of the Project being finalised. The findings of the survey remain valid as the principle of the proposed development has remained the same and the findings have been used to inform subsequent ecological surveys which have been undertaken on the proposed development site.

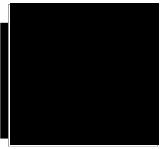



Hole Farm, Great Warley

Preliminary Ecological Appraisal Survey



June 2021

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Signature			
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1 Executive Summary

Instruction: In April 2021 Forestry England commissioned Dr Liat Wicks CEcol MCIEEM of Sonar Ecology to undertake a Preliminary Ecological Appraisal of a site at Great Warley. The survey was requested to inform future proposals for a large-scale tree planting scheme creating new woodland for timber, wildlife, and people.

Habitats: The survey was undertaken on the 10th April 2021. The dominant habitat on site was a network of arable fields of generally low ecological value. Other habitats on site or immediately off site include broadleaved deciduous woodland, wet woodland, mature treelines, hedgerows, arable field margins, waterbodies and watercourses and small isolated areas of improved grassland.

Proposals: Approximately 70% of the site is to be planted with trees (approximately 90ha of planting), resulting in the loss of 100% of the arable habitat. Substantial alternative arable habitat is available nearby. Given that this habitat type is common and widespread in the surrounding landscape, its removal and replacement with predominantly native tree plantation is not considered to negatively impact associated species such as farmland bird populations. Indeed, the scheme aims to replace a habitat of low ecological value with a more high-quality, structurally diverse habitat, with enhancements for wildlife, resulting in large overall biodiversity net gains.

International and National Sites

- European Protected Sites: No European protected sites were recorded within 10km of the site.
- Nationally Designated Sites: There was one statutory Site of Special Scientific Interest (SSSI) within a 3km search radius, located approximately 2.2km northeast of the site. There was one Local Nature Reserve (LNR) within the 3km search radius of the site, located approximately 1.9km south of the site. Recommendations including good construction practice are provided.

Local Sites

- There are 14 Local Wildlife Sites (LoWS) Sites of Importance for Nature Conservation (SINC) within the 2km search radius. The nearest non-statutory sites to Hole Farm are Parker's Shaw, which is a lowland mixed deciduous woodland located within the site boundary to the southwest; and Coombe Wood, which is a lowland mixed deciduous woodland located directly on the northeast boundary of the site. Coombe wood is also the closest area of ancient woodland to the site. Recommendations including liaison with the local Natural England team and good construction practice are provided.

Conclusions and Recommendations:

The arable habitat which comprises the majority of the site is to be lost to the planting scheme, this habitat is considered of low ecological value (its value might be raised should the presence of notable farmland birds be present), other habitats on site include mature trees, tree lines, hedgerows and waterbodies which are considered of moderate-high ecological value. The improved grass margins of the arable fields are considered low ecological value due to their predominantly managed nature. Evidence of owl and badger were found on site, and numerous trees on site and the farm buildings have suitable features to support roosting bats.

Further Surveys: Additional surveys are recommended for badger, breeding and wintering birds and great crested newt to inform future concept design plans for the planting scheme, as well as any mitigation requirements (please refer to Table 3 for full Recommendations).

It is recommended that the mature trees, tree lines and hedgerows along the periphery of the site, around the field boundaries, and woodland copses on site are retained and enhanced. The edge of the retained habitat is considered an important wildlife corridor for multiple species. This edge habitat will naturally change over time through the planting scheme, but it is recommended that the existing edge habitat grades into the new woodland plantation in a sensitive way through habitat enhancements.

Enhancements: The tree planting scheme will naturally add biodiversity gain once the plantation starts to mature by providing additional foraging and nesting resources for local wildlife. Additional opportunities for biodiversity gain should be considered. Enhancements could include:

- creation of new habitat (wildlife corridor habitat, wildflower margins, rough grassland areas and enhancement of existing waterbodies and maintaining connectivity within the site and into the surrounding landscape);
- use of predominantly native and pollinator plant and shrub species within areas of retained habitat to fill in gaps in existing hedgerows and to grade the edge habitat into the new woodland plantation sensitively;
- installation of log piles for amphibians and reptile populations, bird and bat boxes; and
- creation of stag beetle loggeries within areas of retained habitat.

If the recommendations of this report, and any subsequent species-specific surveys are undertaken at the appropriate stage, there will be no undue constraints with respect to ecology in relation to the proposed tree planting scheme.



1.1 Conditions of Use

Sonar Ecology has prepared this report in accordance with instructions of their client Forestry England for their sole and specific use to support planning requirements. Sonar Ecology accepts no responsibility for any consequences of the release of this report to third parties.

This report has been prepared for the exclusive use of Forestry England by Sonar Ecology. The purpose of the report is explicitly stated in the text. It is not to be used for any other purposes unless agreed with Sonar Ecology. The copyright for the report rests with Sonar Ecology unless otherwise agreed.

According to the purpose of the report, survey information supplied reflects the findings of the surveyor at the time of the visit. Species and habitats are subject to change over time, some species may not be apparent at certain times (for example subject to seasonal variation) and some species may colonise a site after a survey has been completed. These matters should be considered when using this report. Sonar Ecology takes no responsibility for ecological features present after the date of the most recent survey.

In line with our Professional Code of Conduct as a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), Sonar Ecology reserves the right to release information regarding protected species to the biological records centre where appropriate.



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3 Introduction

3.1 Background

Sonar Ecology was commissioned by Forestry England in January 2021 to undertake a Preliminary Ecological Appraisal of the above site. The survey was requested to support decision making in relation to a tree planting scheme for the site. No planning consent is required for such a scheme (categorised as Permitted Development), and the hope is that long term biodiversity gain will be achieved for local biodiversity.

3.2 Proposals

The site is to be subject to a tree planting scheme. Approximately 70% of the site equating to approximately 67 hectares is proposed for planting. The planting will be predominantly of native species, within some non-natives and a small proportion of conifers. The planting scheme design will be informed by this report and any subsequent surveys that are recommended.

The overall aim is to create a productive woodland to primarily maximise carbon sequestration as well as meet objectives for biodiversity net gain whilst creating a site for the recreation for local communities.

3.3 Aims of Study

The aims of the study and survey work were to:

- Undertake a desk study consulting the local biological records centre and online resources to obtain an ecological baseline for the site;
- Undertake a Preliminary Ecological Appraisal via the form of an extended Phase1 Habitat Survey of the site to determine extent of habitats and highlight the potential for protected species to be present, identifying any ecological constraints;
- Undertake a preliminary evaluation based on survey findings;
- Produce a technical report detailing the methodologies, results and conclusions of the survey and discussing the likely impacts of the proposals on ecology;
- Outline any further survey effort considered necessary to inform future planting scheme proposals.

3.4 Site Description

The site is approximately 95 ha in area and is centred at Ordnance Survey (OS) grid reference at TQ584897, postcode CM13 3JD.

The site comprises arable fields, woodland copses, grass field margins, hedgerows, treelines, waterbodies and farm buildings. The surrounding landscape comprises residential development, agricultural land and roads including the M25 to the west. Figure 1 shows the site location, and Figure 2 shows an expanded view of the land area surveyed at Hole Farm.

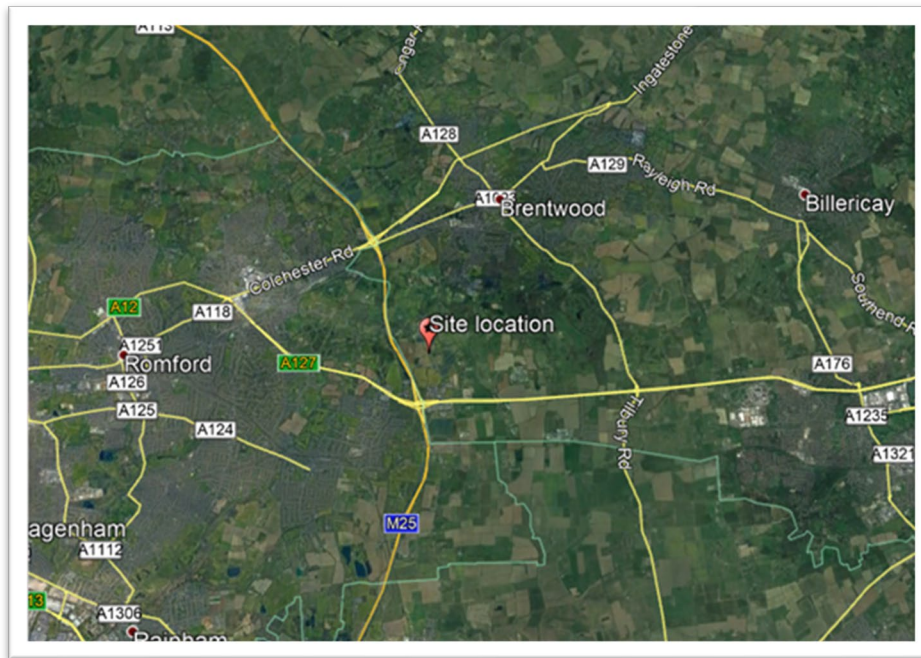


Figure 1. Hole Farm site location © Google Earth Pro 2021

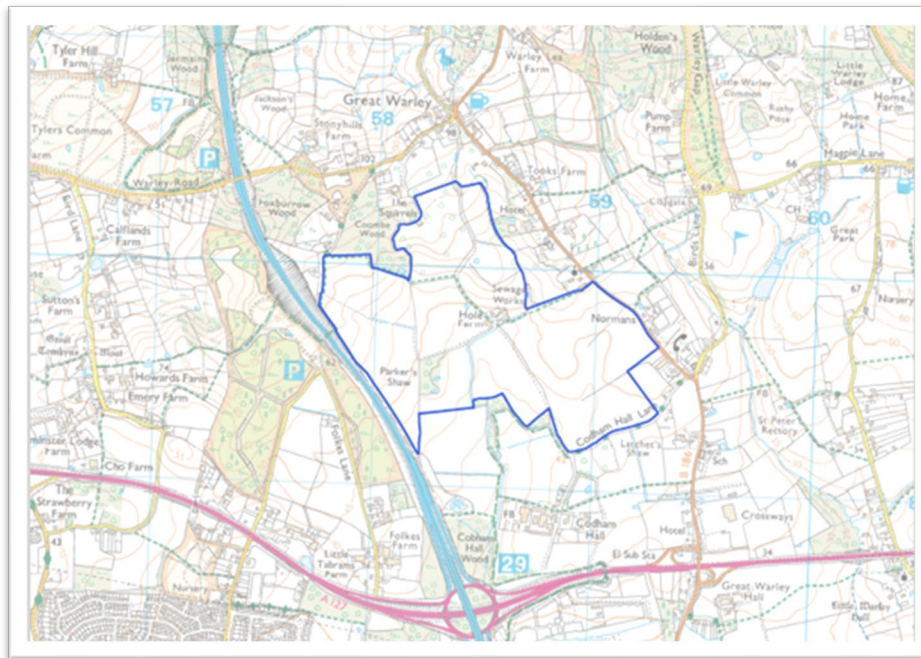


Figure 2. The extent of the survey area.

4 Methodology

4.1 Introduction

A desk study for the site was obtained from Essex Field Club (EFC), and Essex Wildlife Trust Biological Records Centre (EWTBRC) with a 2km search radius around the site to include data on protected species, designated sites and notable habitats. This data was provided to inform this report.

Assessment of the desk top study was followed by an extended Phase 1 Habitat Survey (JNCC 2010¹). By combining these two elements, it is possible to identify and evaluate the ecological value of the site in order to determine the potential effects of future planting schemes on sensitive ecological receptors. The Phase 1 Habitat Plan is provided in Appendix A, the Constraints Plan in Appendix B, Photographs at Appendix C and Appendix D outlines standard limitations to biological surveys.

4.2 Desk Study

4.2.1 Sources of Ecological Information

The following sources of information were reviewed as part of the Site desktop study:

- Local Records Centre Data (Essex Recorders Partnership (ERP) and Essex Wildlife Trust Biological Records Centre (EWTBRC));
- Ordnance Survey (OS) Online Mapping and Google Earth 2021;
- MAGIC (Multi-Agency Geographic Information for the Countryside) - this is a web-based interactive mapping service that provides information on key environmental schemes and designations; and
- Natural England's Local Nature Reserves Database².

4.2.2 Local Records Centre Data

Sonar Ecology obtained the following information from ERP and EWTBRC with a 2 km search radius of the OS Grid Reference (TQ584897):

- Statutory and Non-statutory Site designations (including Ancient Woodland);
- Protected and Notable Species records; and
- Notable / NERC Act, Section 41 Priority Habitats.

4.2.3 MAGIC Data Search

This web-based data set was interrogated for the following designated Sites:

- National Statutory Sites (Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNR)) and Local Nature Reserves (LNR) within a 2km radius of OS Grid Reference: TQ584897; and
- International Designated Sites: Special Areas of Conservation (SAC), Special Protection Areas (SPA) & Ramsar Sites within a 10km radius of OS Grid Reference: TQ584897.

The information gathered has been used to put the site into an ecological context.

¹ JNCC (2016) Handbook for Phase 1 Habitat Survey: A technique for environmental audit

² Natural England. 2017. Local Nature Reserves. [ONLINE] Available at: http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp. [Accessed 29 April 2021].

4.2.4 Ponds

The identification of ponds within 500m of OS Grid Reference: TQ584897 was facilitated by the interrogation of the following information:

- OS Online Mapping and Google Earth;
- Identification (via MAGIC) of ponds / great crested newt records submitted as part of the 'Great Crested Newt Natural England Class Survey Licence Returns (England)'³; and
- Interrogation (via MAGIC) for ponds subject to the 'Great Crested Newt eDNA Habitat Suitability Index Pond Surveys for District Level Licensing 2017, 2018, 2019'⁴.

4.2.5 Protected Species Licences

Magic was used to search for granted European Protected Species Licence Applications relating to the following taxa: amphibians, bats, invertebrates, other mammals, plants and reptiles within 2km of the Site.

4.3 Field Surveys

The extended Phase 1 Habitat Survey was conducted on the 10th May by Dr Liat Wicks CEcol MCIEEM of Sonar Ecology. The dominant plant species were recorded, and habitats classified according to their vegetation types and presented in the standard Phase 1 Habitat Survey format. Habitats were identified and are plotted on a Phase 1 Habitat map (Appendix A, Figure 4); botanical species were recorded and are noted in the text using nomenclature in accordance with (Stace, 2010)⁵ and (Stace, 2010)⁶. Features on the Site suitable for, or indicating evidence of, protected species and species of nature conservation significance were recorded using a Global Positioning System (GPS) application (Petosoft, 2010)⁷.

Target notes (TNs) were taken to:

- describe the vegetation in areas that were too small to map;
- denote species and habitats of conservation interest; and
- record any unusual or urban features not currently covered in the Phase 1 habitat categories.

Equipment used included:

- LED Lenser hand torch;
- High powered close focusing binoculars; and
- Iphone 12 pro max running GPS software (Petosoft 2010).

³ Natural England - GCN - Class Survey Licence Returns (England) <https://data.gov.uk/dataset/5e3d32c2-200a-4ed2-982c-be0c5ea3bc0f/gcn-class-survey-licence-returns-england> [Accessed 30 April 2021].

⁴ Natural England - Great Crested Newt eDNA Habitat Suitability Index Pond Surveys for District Level Licensing 2017, 2018, 2019. <https://data.gov.uk/dataset/8643f1b9-b419-4ee8-8e9c-18200e0edc31/great-crested-newt-edna-habitat-suitability-index-pond-surveys-for-district-level-licensing-2017-2018-2019> [Accessed 30th April 2021].

⁵ Stace, C., 2010. *New Flora of the British Isles* 3rd Edition. Cambridge: Cambridge University Press

⁶ Stace, C.A., van der Meijden, R. and de Kort, I. (2010) *Mobile Interactive Flora of the British Isles - A Digital Encyclopaedia*.

⁷ Petosoft, 2010. *GPS Version 1.3*, Petosoft.

4.4 Survey Personnel

The survey was undertaken by an experienced and suitably qualified ecologist.

Dr Liat Wicks BSc (Hons) MSc CEcol MCIEEM: Liat is the Director of Sonar Ecology and a Chartered Ecologist and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). She has over 16 years' experience as a practising ecologist, specialising in bats and has undertaken, commissioned and reviewed numerous Extended Phase 1 Habitat Survey and Protected Species Surveys all over the UK. She is a Natural England licenced bat surveyor (Class 2) and holds additional Natural England survey licences for barn owl and great crested newt. Dr Wicks has held the position of County Ecologist for a district council and was previously Head of Biodiversity for the Bat Conservation Trust.

4.5 Relevant Legislation

Certain habitats and species are protected under legislation. The applicable pieces of legislation are:

- The Wildlife and Countryside Act 1981 (as amended) (WCA).
- The Protection of Badgers Act 1992 (The Badgers Act).
- The Conservation of Habitats and Species Regulations 2017 (as amended).
- The Natural Environment & Rural Communities Act 2006 (NERC).
- The Countryside & Rights of Way Act 2000 (CROW).
- The Hedgerow Regulations 1997.

4.6 Constraints and Limitations to the Survey

- An Extended Preliminary Ecological Appraisal Survey only provides a snapshot of the broad habitats and species present in an area at the time the survey is undertaken.
- Species are mobile and can move in to and out of an area quickly. The survey relies on evidence such as tracks and droppings to provide evidence that a species is present.
- The locations of all features and target notes within the report and the figures are indicative and approximate only.
- The data provided from consultees and meta-databases is based on existing records but does not necessarily constitute a comprehensive list of protected and notable species records. These records are not exhaustive as there is currently no national or regional policy for systematic data gathering. Therefore, absence of data does not constitute evidence of absence (i.e. it may be that the Site has not previously been surveyed). It is also possible that other data exist within this area that has not been made available to Sonar Ecology.
- Whilst any incidental sightings of non-native invasive species are recorded, a full invasive species survey is not within the scope of the survey.
- Access to the pond at TN3, Figure 4 on Site was not possible due to the density of the surrounding scrub vegetation.

5 Results: Desktop Study

5.1 Desk Study

The desktop study ecological records report requested from the Essex Recorders Partnership was received on the 29th April 2021⁸, and the data report from Essex Wildlife Trust Biological Records Centre on the 5th May 2021⁹. The following sections summarise the findings from the records centre and MAGIC.

5.1.1 Statutory Designated Sites

No European designated Sites were found within 10km of the site. There was one statutory Site of Special Scientific Interest (SSSI) within a 3km search radius, located approximately 2.2km northeast of the site. There was one Local Nature Reserve (LNR) within the 3km search radius of the site. Details below in Table 1 below.

Table 1: Statutory Sites within the Desktop Search Area

Site Name	Location	Approx. Distance to the Nearest Site	Reason for Citation
Sites of Special Scientific Interest (SSSI)			
Thorndon Park SSSI	TQ 611 911	2.2km NE	Thorndon Park is an area of semi-natural broad-leaved woodland and ancient parkland with lowland birch-sessile oak and pedunculate oak-hornbeam woodland types. The site supports an 'outstanding' assemblage of beetles (Coleoptera).
Local Nature Reserves			
Cranham Brickfields	TQ 580 875	1.9km S	This site comprises a variety of habitats including semi-improved grassland, a pond, scrub and woodland. Species observed include great-crested newts, slow worms and common lizard as well as green hairstreak butterfly.

5.1.2 Non-Statutory Designated Sites

Sites which are not of national significance but may contain features important for wildlife may be designated and given some protection under the planning system. In Essex these are

⁸ Essex Recorders Partnership (April 2021) Bio and Geodiversity data regarding Project Hole Farm (2km search radius) on behalf of Sonar Ecology. Prepared on 29th April 2021.

⁹ Essex Wildlife Trust Biological Records Centre (May 2021) Data Search for Hole Farm, Great Warley; TQ584897, 2km standard search.

typically known as Local Wildlife Sites (LoWS), and they are coordinated by Essex Wildlife Trust through the Essex Wildlife Sites Project (EWSP).

A total 14 LoWS are present within the 2km search areas (Table 2). The nearest non-statutory sites to Hole Farm are:

- Bre54 Parker's Shaw, which is a lowland mixed deciduous woodland located within the site boundary; and
- Bre50 Coombe Wood, which is a lowland mixed deciduous woodland located directly on the northeast boundary of the site.

Table 2: Non-statutory Sites within 2km of the Site

Site Ref	Site Name	Location	Summary
Bre46	Jackson's Wood/Tyler's Shaw	TQ 57443 90955	A lowland deciduous woodland which exhibits the structure and flora characteristic of ancient woodland.
Bre48	Foxburrow Wood	TQ 57573 90253	Ancient woodland. Large parts comprise young birch growth with occasional oaks.
Bre50	Coombe Wood	TQ 57982 90135	Much of this woodland is considered ancient woodland with a diverse habitat structure supporting ancient woodland species.
Bre54	Parker's Shaw	TQ 58252 89509	Lowland mixed deciduous woodland, possibly ancient woodland or hedgerows with variety of tree species and ground flora.
Bre55	Warley Place	TQ 58347 90968	Comprises the Essex Wildlife Trust's Warley Place nature reserve and two adjacent meadows and a diverse range of habitats providing the opportunity to promote wildlife in a garden environment.
Bre56	Batchelor's Walk Woods	TQ 58242 91680	A small lowland mixed deciduous woodland, possibly of ancient origin, lying either side of a stream. Holds ancient woodland indicator species.
Bre59	Codham Hall Woods	TQ 58514 88901	Mainly ancient, lowland mixed deciduous woodland dominated by dense hornbeam coppice. A thick hedgerow alongside the stream provides valuable connective habitat.
Bre66	Hobbs Hole	TQ 58727 88150	Woodland and scrub habitat with a small section indicative of ancient woodland.
Bre68	St Mary the Virgin Churchyard, Great Warley	TQ 58862 89980	A churchyard site with a mix of typical neutral and acid grassland species, predominantly neutral grassland.

Bre73	Holden's Wood	TQ 59076 90948	Much of this lowland mixed deciduous woodland is included within the Essex Ancient Woodland Inventory. Areas of more recent woodland form a contiguous habitat.
Bre77	Little Warley Common/Warley Gap Woods	TQ 59458 90767	An area of former wood-pasture which is now a more typical broadleaved woodland with flora typical of that on sandy, acid soils.
Bre79	Woodlands School Meadow	TQ 59650 89304	Mainly dry grassland with a marshy grassland component next to a small stream and hedgerows.
Bre80	Ellen's Wood	TQ 59851 91075	Historic references to the site indicate most is ancient lowland mixed deciduous woodland with a variety of tree and ground cover species.
Bre85	Warley Hall Wood	TQ 60096 88890	A lowland mixed deciduous woodland with a typical ancient woodland structure and a rich and diverse ground flora throughout.

Given the nature of the proposals of a large-scale tree planting scheme comprising predominantly of broadleaf species with some non-native and conifer species, the likely impacts to nearby designated sites are considered negligible.

5.2 Habitats

Six ancient woodland areas were found within the 2km radius of the site. Two of these, Codham Hall wood and Foxburrow wood, are bisected by the M25 motorway. The closest area of ancient woodland is Coombe wood which directly abuts the site on the northwest boundary. Codham Hall wood, the next nearest, lies approximately 850m south of the site.

5.2.1 Ponds

There are numerous ponds and/or open water bodies within the Site and 500m from the site boundaries. The closest of which have been plotted on Figure 3 below. Ponds 1-6 are within the Site itself with ponds 16 and 7 being immediately off-site within adjacent woodland. The other waterbodies and ponds within 500m are associated with off-site woodland areas and copses, Barrack Reservoir (470m east of the Site) and residential areas to the west.

No ponds surveyed as part of the 'Great Crested Newt eDNA Habitat Suitability Index Pond Surveys for District Level Licensing 2017, 2018, 2019', were recorded within 500m of the Survey Area.



Figure 3. Closest ponds/open water bodies to the site boundaries. The pink circle denotes an approximate 500m radius from the site boundaries.

5.2.2 Protected Species Licences

Magic was used to search for granted European Protected Species Licence Applications relating to the following taxa: amphibians, bats, cetaceans, invertebrates, other mammals, plants and reptiles within 2km of the site centre. A total of one Great crested newt EPS license (2017, TQ594889) and one Bat EPS Licence (2017-29257-EPS-MIT) were recorded within the search area for species including:

- Natterer's bat
- Soprano pipistrelle

5.2.3 Species

The species records returned from the desktop survey are summarised in Table 3 below. Only records relevant to the habitats on site, scale of the site and from the last 10 years have been included.

Table 3: Desktop Study Results: *Relevant Protected Species* within 2km of the Site in the last 10 years.

Latin Name	Common Name	Most Recent Record	Record	
			Distance (m) of most recent record	Bearing of most recent record
European Protected Species (EPS)				
<i>Triturus cristatus</i>	Great crested newt	2020	1.6km	Not known
<i>Triturus cristatus</i>	Great crested newt	2018	1.06km	SE
<i>Myotis nattereri</i>	Natterer's Bat	2018	1.5km	Not known
<i>Myotis nattereri</i>	Natterer's Bat	2011	1.28km	N
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	2018	1.5km	Not known
<i>Pipistrellus</i> sp.	Pipistrelle Bat species	2011	1.28km	N
<i>Plecotus auritus</i>	Brown Long-eared Bat	2018	1.5km	Not known
<i>Myotis daubentonii</i>	Daubenton's Bat	2018	1.5km	Not known
<i>Nyctalus leisleri</i>	Leisler's Bat / Lesser Noctule Bat	2018	1.5km	Not known
<i>Nyctalus noctula</i>	Noctule Bat	2018	1.5km	Not known
<i>Eptesicus serotinus</i>	Serotine	2018	1.5km	Not known
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	2018	1.5km	Not known
Schedule 1 Birds				
<i>Cettia cetti</i>	Cetti's Warbler	2015	1.0km	Not known
<i>Milvus milvus</i>	Red Kite	2019	1.0km	Not known
<i>Falco subbuteo</i>	Hobby	2018	1.0km	Not known

<i>Turdus pilaris</i>	Fieldfare	2019	1.0km	Not known
<i>Turdus iliacus</i>	Redwing	2019	1.0km	Not known
<i>Accipiter gentilis</i>	Goshawk	2019	1.0km	Not known
Section 4.1 Species				
<i>Timandra comae</i>	Blood-vein	2013	1.7km	NW
<i>Atethmia centrugo</i>	Centre-barred Sallow	2016	1.9km	NW
<i>Tyria jacobaeae</i>	Cinnabar	2019	1.8km	Not known
<i>Cuculus canorus</i>	Cuckoo	2015	1.0km	Not known
<i>Chiasmia clathrata</i>	Latticed Heath	2019	1.8km	Not known
<i>Watsonalla binaria</i>	Oak Hook-tip	2016	1.8km	NW
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	2019	1.8m	Not known
<i>Coenonympha pamphilus</i>	Small Heath	2019	1.6km	NW
<i>Satyrium w-album</i>	White-letter Hairstreak	2015	1.9km	NW
<i>Bufo bufo</i>	Common Toad	2020	1.6km	Not known
<i>Passer domesticus</i>	House Sparrow	2019	1.0km	Not known
<i>Malacosoma neustria</i>	Lackey	2018	2.0km	Not known
<i>Vanellus vanellus</i>	Lapwing	2019	1.0km	Not known
<i>Watsonalla binaria</i>	Oak Hook-tip	2016	1.9km	Not known
<i>Turdus torquatus</i>	Ring Ouzel	2019	1.4km	Not known
<i>Muscicapa striata</i>	Spotted Flycatcher	2018	1.4km	Not known
<i>Streptopelia turtur</i>	Turtle Dove	2013	1.6km	Not known

<i>Erinaceus europaeus</i>	Western Hedgehog	2012	1.3km	Not known
<i>Emberiza citrinella</i>	Yellowhammer	2013	1.6km	Not known
<i>Satyrion w-album</i>	White-letter Hairstreak	2019	1.9km	Not known
Schedule 8 Plants				
<i>Hyacinthoides non-scripta</i>	Bluebell	2015	1.4km	Not known
Schedule 9 Invertebrates				
<i>None recorded</i>				
Schedule 5 Animals				
<i>Vipera berus</i>	Adder	2012	1.9km	NW
<i>Zootoca vivipara</i>	Common Lizard	2014	1.2km	NW

Key:

- **C-:** confidential record or information not provided;
- **European Protected Species;** these are species protected by law throughout the European Union. They are listed in Annexes II and IV of the European Habitats Directive.
- **Schedule 5 Animals:** Animals listed on Schedule 5 of the Wildlife and Countryside Act (1981) as amended;
- **Schedule 1 Birds:** Birds listed on Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) which are protected by special penalties at all times;
- **Schedule 8 Plants:** Plants listed on Schedule 8 of the Wildlife and Countryside Act (1981) as amended;
- **Section 41 Species / BAP Species;** UK Biodiversity Action Plan Priority Species, London BAP Priority species and Species “of principal importance for the purpose of conserving biodiversity” covered under section 41 (England) of The Natural Environment and Rural Communities Act (2006); and
- Please note, species may be listed in more than one category, where this is the case, species have been categorised according to the highest level of their protection.

6 Results: Preliminary Ecological Appraisal Survey

6.1 Site overview and Habitats

The total area of the site comes to approximately 95ha. The site, comprises the following broad habitat types in order of dominance:

- Arable fields
- Hedgerows with trees
- Broadleaved deciduous woodland
- Improved grass field margins with encroaching scrub
- Scattered trees
- Water bodies
- Ditch network along field boundaries
- Farm Buildings at Hole Farm

The Phase 1 habitat categories present on site are presented below (JNCC, 2010). This section should be read in conjunction with the Phase 1 Plan (Figure 4, Appendix A); which indicates the location of the target notes (TNs). Photographs of the site are provided at Appendix C.

The Phase 1 Habitat Survey was undertaken on the 10th April 2021. Access to the site was agreed in advance of the survey. All the fields on site were bounded by fence lines, or hedgerows with tree lines. Broad habitat types are described below and details on the potential for protected species provided in Section 5.5.

6.1.1.1 Arable fields

The arable fields at the time of the survey contained a sown crop (Photo 1).

6.1.1.2 Ditch System

Many of the arable fields have a ditch system along the field boundaries which in most cases were dry or not holding water at the time of the survey (TN1, Photo 2), however some were wet and had vegetation associated with aquatic habitats. An area of wet ditch holding some standing water is present at TN4 (Photo 3), with species such as Green alkanet (*Pentaglottis sempervirens*), Cow parsnip (*Heracleum sphondylium* L.), Pendulous sedge (*Carex pendula*) and water dock (*Rumex hydrolapathum*).

6.1.1.3 Improved grass field margins with encroaching scrub

The grass field boundaries of the arable fields across the site vary in width from being almost nonexistent to about 2-3m wide and are managed, with rougher areas of grassland closer to the boundary features and periphery of the site (Photos 4-5). The grass margins are adjacent to a range of habitats including broadleaved woodland copses, ditch habitat and roadside hedgerows with tree lines. Grass field margins were present along most of the field boundaries. Species here included broad leaved dock (*Rumex obtusifolius*), white dead nettle (*Lamium album*), cleavers (*Galium aparine*), spear thistle (*Cirsium vulgare*), common ragwort (*Jacobaea vulgaris*) and cow parsley (*Anthriscus sylvestris*), broad leaved dock (*Rumex obtusifolius*), Common dog violet (*Viola riviniana*), Cow parsnip (*Heracleum sphondylium* L.), Smooth hawk's beard (*Crepis capillaris*), common daisy (*Bellis perennis*), dandelion (*Taraxacum officinale*) and bramble (*Rubus fruticosus*).

Other species more patchily distributed included Scentless mayweed (*Tripleurospermum inodorum*), red campion (*Silene dioica*), Rosebay willowherb (*Epilobium angustifolium*), Common sow thistle

(*Sonchus oleraceus*), Groundsel (*Senecio vulgaris*), Common forget me not (*Myosotis servensis*), Greater stitchwort (*Stellaria holostea*), yellow suckling clover (*Trifolium dubium*), Field speedwell (*Veronica arvensis*), Rape (*Brassica napus*), curled dock (*Rumex crispus*) and isolated bluebell (*Hyacinthoides non-scripta*) a schedule 8 plant.

A footpath/bridle path is present at TN11 running between the M25 and the western site boundary in this location (Photo 6). Here the field margin is short and managed with patches of bare earth, scattered scrub and self-seeded ash and oak saplings.

Grass species within the field margins included perennial rye grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*) and cocksfoot (*Dactylis glomerata*).

6.1.1.4 Hedgerows with Trees

The fields are bounded in most areas by hedgerows with shrub species and semi mature to mature trees (Photo 7-8). Understorey species included hawthorn (*Crataegus monogyna*), Sloe (*Prunus spinosa*) and Snow berry (*Symphoricarpos albus*).

Semi-mature to mature tree species either within hedgerows encroaching into the field or along the field boundaries included pedunculate oak (*Quercus robur*) and field maple (*Acer campestre*), White willow (*Salix alba*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), European hornbeam (*Carpinus betulus*) and horse chestnut (*Aesculus hippocastanum*).

Oak trees at TN2, TN 4, the mature ash at TN 5 (see below), mature oak at TN6, oaks along the earth bank at TN10 had features suitable to support roosting bats. Please refer to Photos 9-11.

See Appendix A, Figure 1 for the location of this area.

6.1.1.5 Broadleaved Woodland/ Copses (on-site and off-site)

A small group of trees/copse within an area of dense scrub is found at TN5 immediately off-site. Species here include a large ash, willow, field maple, sycamore and hornbeam. Scrub species include bramble, common nettle, buddlejia (*Buddleia Davidii*), ground ivy (*Glechoma hederacea*) and lords and ladies (*Arum maculatum*) with dead wood on the ground. The ash at TN5 has bat roosting potential. Maps indicate a waterbody present here and there is a shallow depression within the area, but it was dry at the time of the survey (Photos 12-13).

The group of trees at TN8 to the north of the site includes scots pines (*Pinus sylvestris*), pedunculate oak (*Quercus robur*), field maple and horse chestnut. There is a small distinct group of Silverleaf poplar (*Populus alba*) located northeast of TN17 (Photo 14).

A large extensive area of broadleaved woodland is present off-site at TN9 (Photos 15-16), mature treeline edge habitat, oak, maple, elder, sycamore, copper beech with an under storey of rhododendron (*Rhododendron arboretum*), holly (*Ilex aquifolium*), bluebell (Schedule 8 plant), brambles and common nettle. Mammal runs are present throughout this area and on and off-site.

An area of woodland on site is present at TN19, with species including oak, hornbeam, ash, elder and hawthorn with ground flora comprising bluebell (schedule 8 Plant), green alkanet and common nettle (Photos 17-18). Two ponds are present within this woodland block and a wet ditch system runs between the two arable fields, and the woodland. The ponds are described in section 6.1.1.6 below.

Woodland edge habitat (woodland off-site) at TN13 has a similar species composition to that of the other woodland areas described in the section. The wet ditch runs right through this woodland to the south (Photo 19).

6.1.1.6 Waterbodies (on and off-site)

There are 6 waterbodies/ ponds present within the site boundary, these are located at TN3, TN15, TN14, TN17 and two within the woodland at TN19 (Also refer to Figure 3). A brief description of each pond is outlined below:

- Pond 3 (Figure 3), TN3 – access to this pond was not possible due to very dense scrub obscuring both views and access.
- Pond 4 (Figure 3), TN15 – this pond held water and was surrounded by scrub and scattered trees including willow and oak (Photo 20).
- Pond 6 (Figure 3), TN14 – this pond held water at the time of the survey and not overshadowed by vegetation.
- Pond 5 (Figure 3), TN17 – drains/ culverts present which would feed this pond but dry at the time of the survey (Photo 21).
- Pond 1 (Figure 3), TN19 – holding water – limited marginal vegetation (Photo 22)
- Pond 2 (Figure 3) TN19 – holding water – very little marginal vegetation and overshadowed adjacent trees (Photo23).

6.1.1.7 Farm buildings

The farm buildings near TN14 were not subject to a detailed assessment for roosting bats or nesting birds, however the nature of the construction of some of the residential dwellings, and agricultural buildings mean that the potential for protected species to be supported within these structures is considered moderate to high (Photos 23-26). General recommendations have been made with respect to the buildings and built structure on site, should the planting scheme impact them.

6.2 Summary

The broad habitat types are classified as:

- Arable fields – low ecological value (presence of notable farmland birds may increase this to moderate)
- Woodland/ copse habitat – moderate-high ecological value (likely to support numerous protected species)
- Mature tree lines and hedgerows – moderate-high ecological value (likely to support protected species such as bats, nesting birds). May increase to high should roosting bats be found within trees.
- Arable field margins – low ecological value – (likely to support species such as low number of common reptiles where rank, badger).
- Waterbodies/ ponds– moderate-high ecological value - Potential for GCN.
- Farm buildings – moderate-high ecological value (likely to support nesting birds, and potential for roosting bats).

6.3 Protected and otherwise Notable Species

Ecological constraints and evidence of protected species found during the survey is presented in the Ecological Constraints Plan at Appendix B, this should be referred to when reading the Protected Species section. Only those protected species where suitable habitat to support them exists within the development area are discussed below:

6.3.1 Bats

The site has numerous areas of mature woodland either on-site or directly adjacent to the site, and connectivity in the form of hedgerows, tree lines and edge habitats. Bats navigate through the landscape at varying spatial scales, and linear features such as hedgerows, tree lines, and woodland edges are all used as commuting corridors for this group of animals linking roost sites to favoured foraging grounds. The woodland areas and edge habitats on site and immediately off-site are mature and established and would form a valuable foraging resource for bats, as the sheltered habitat would attract a range of invertebrates, their main source of prey. These features may also act as a vital corridor through which to commute across the landscape.

The mature trees within the woodland areas, and some of the scattered trees within the site itself may also have the potential to support roosting bats. Many of the trees had visible features suitable for supporting roosting bats, these are highlighted in Appendix B.

The site also provides good foraging grounds in the form of sheltered edge habitat and grassland field margins. The structural diversity of these habitats provides ideal conditions for the invertebrate prey of bats.

The farm buildings around TN14 are considered to have moderate-high potential to support roosting bats, although a detailed building assessment was outside the scope of this report. The open barns on site are likely to be used by bats foraging in and around these structures as they also provide shelter for insects.

Bat roosts are known in the local area and records of bats were returned by the data search for within 2km of the site, the closest being 1.28km away from *Myotis Natterei* and Pipistrelle species.

6.3.2 Nesting Birds and Schedule 1 Birds

The woodland, copses, hedgerows, tree lines, shrubs, scattered trees and the grassland habitat on site provide good habitat for nesting birds. Species observed during the survey included blackbird (*Turdus merula*), starling (*Sturnus vulgaris*) and robin (*Erithacus rubecula*). A fresh owl pellet (likely barn owl) was found near the base of a mature oak with a huge trunk cavity (Photo 27) see Constraints Plan, Appendix B).

The farm buildings around TN14, had the potential to support nesting birds including potential for the schedule 1 protected barn owl (*Tyto alba*). Nesting birds were present within the hedgerows and woodland at the time of the survey.

The desk stop study returned records for red kite, Cetti's warbler, Hobby, field fare Redwing and Goshawk approximately 1km from the site. The habitat preferences for these species include woodland, waterbodies and hedgerows, all present on site. Given the arable nature of the site, farmland birds such as yellow hammer (*Emberiza citronella*) and lapwing (*Vanellus vanellus*) are likely to frequent the site and records exist for within 2km of the site.

6.3.3 Common Reptiles

The field margin grassland habitat, where left unmown, woodland edge and areas of scrub and log piles/dead wood habitat may all support low/moderate numbers of common species of reptile such as common lizard, grass snake and slow worm.

Records of Adder and common lizard were returned from the desk study for within 2km of the site.

6.3.4 Badger

Suitable habitat for badger for both foraging (woodland, grassland, scrub) and sett building (earth banks, ditches, woodland) is present across the site. Badger evidence was found on site, including a latrine, a dung pile and numerous mammal runs (Photos 28-29, Constraints Plan Appendix B). This is presented in the Ecological Constraints Plan (Appendix B).

Records of badger from 2010 were returned from within 2km of the site, and evidence of badger on site is presented.

6.3.5 Great Crested Newt (GCN)

Suitable aquatic (ponds and open water) and terrestrial habitat (dead wood, woodland, grassland) exists for supporting great crested newt on-site and immediately off-site. GCN also navigate and commute through the landscape using hedgerow bases and treelines. The site and wider landscape are connected via these features.

Records from the desk top study returned records of GCN from within 2km of the site, the closest record being 1.06km SE of the site in 2018, and the most recent being 1.6km from the site in 2020.



7 Recommendations and Conclusions

7.1 Potential Impacts to Habitats and Recommendations

The 95ha site is to be subject to a large-scale tree planting scheme. Approximately 70% of the site equating to approximately 67 ha is proposed for planting.

Although firm details on tree species is still unknown at the time of writing this report, and will be subject to soil assessments, it is likely to be mixed broadleaf woodland (predominantly native, with some non-natives and a small proportion of conifers). The overall aim is to create a productive woodland to primarily maximise carbon sequestration as well as meet objectives for biodiversity net gain and provide a site for recreation for local communities.

Given the nature of the large-scale tree planting scheme comprising predominantly native broadleaf species, the likely impacts to nearby designated sites are considered negligible, and proximity to designated sites are not considered a constraint.

7.1.1 Arable Habitat

The planting proposals will replace the existing arable habitat considered of low ecological value. This habitat type is common and widespread in the local area, being set within a predominantly agricultural landscape. Although some farmland birds that utilise arable fields such as yellow hammer (records exist within 2km of the site) could be present on site, alternative suitable habitat exists in the immediate vicinity of the sites, and the loss of this habitat is not considered to negatively impact on available resources or population numbers.

The planting proposals on this site would need to consider the ecological value of the habitats. It is recommended that the edge habitats, linear hedgerows and trees forming field boundaries and boundary features of the site are retained and enhanced by sensitive planting, grading the edge into the new woodland. This will maintain and enhance the existing wildlife corridors along the edge habitats, and ensure the protection and retention of hedgerows, treelines and woodland edges.

7.1.2 Mature trees

Should any mature trees within the site boundary be subject for removal, they should be subject to a daytime bat roosting assessment and a check for nesting birds if within the birds breeding season. Further bat surveys (seasonally constrained) may be required should the trees have features suitable for roosting bats. Any trees to be retained within the site should be adequately protected from planting and digging activities.

7.2 Potential Impacts to Species and Recommendations

The tree planting scheme for the site will be focused on the arable field areas with approximately 70% of the area planted. Some protected species may be impacted by the planting proposals in the absence of any mitigation measures.

Table 4 in this chapter summarises each of the ecological constraints and potential ecological constraints (protected species), the likelihood of the ecological constraint being present, their protection status and initial recommendations for further survey / mitigation. Generic site wide recommendations and prescriptions, as well as site enhancements, are provided below.

Appropriate consideration and surveys undertaken at the optimal seasonal period must be undertaken for species within Table 4 to fully understand the impacts of the planting proposals for the site and inform any mitigation requirements.

7.3 General Recommendations

Where possible any proposed vegetation clearance works should ideally be planned to fall outside the bird nesting season (March- August). Where this is not possible a nesting bird check must be undertaken by a qualified ecologist to check for active nests prior to works commencing.

Any proposed planting activity occurring in close proximity to mature trees needs to be carefully considered. Mature tree lines and woodland edge habitats should be adequately protected during planting works to avoid root zone compaction. The existing edge habitats on site acting as a wildlife corridor, should be retained, and enhanced to ensure the impacts to protected species are minimised and continued use and movement of the site by species such as badger, reptile, amphibians and commuting, foraging, and roosting bats.

No new lighting is proposed for the planting scheme, as such lighting levels will remain as existing in the short-medium term. Overtime as planted trees mature the lighting levels across the site is likely to decrease benefitting a range of wildlife from badgers, bats and hedgehog.

7.4 Enhancement

The planting scheme has the opportunity for biodiversity gain, and these should be considered. Enhancements could include:

- creation of new habitat (wildlife corridor habitat, wildflower margins, waterbodies and rough grassland),
- planting of broadleaf native trees and shrubs,
- use of predominantly native and pollinator plant species within areas of retained habitat and habitat enhancement,
- installation of log piles, bird and bat boxes, and
- creation of a stag beetle loggery within retained habitat.

7.5 Conclusions

Further surveys in respect of badger are recommended to inform the planting proposals for the site. In the case of badger, a species that can readily dig setts forming new territories, any survey information should be no more than 6 months old prior to planting starting on site (Refer to Table 3 for full recommendations)

The edge habitats and boundary features should be retained and enhanced by sensitive planting, grading the edge into the new woodland planting. The edge habitat can be enhanced in places by native fruit shrub planting, allowing grassland to grow longer with wildflower habitat creation. This will result in increased structural diversity within the vegetation and will benefit a range of species including those likely to be using the site such as butterflies, bats, GCN and reptiles.

Should the edge habitats such as the grass field margins, hedgerows and treelines be directly affected by the planting proposals through habitat removal or modification, then further surveys/works for bats and common reptiles (mitigation through habitat management to minimise the risk of killing and injury) should be undertaken in addition to those mentioned above to inform any mitigation measures (Refer to Table 4).

7.6 Summary

If the recommendations of this report, and any subsequent species-specific surveys are undertaken at the appropriate stage, there will be no undue constraints with respect to ecology in relation to the proposed tree planting scheme.



Table 4: Ecological Constraints and Potential Ecological Constraints on Site

Ecological Constraint	Location of Confirmed/ Potential Constraint	Likelihood of Ecological Constraint Being Present on Site	Protection Status	Initial Outline Recommendations / General Mitigation Proposals /Further Survey
Bats	<p>Potential roosts in mature trees within woodland copses on site and within mature trees/ treelines.</p> <p>Moderate to High potential for roosting bats within the farm buildings Foraging and commuting habitat throughout site.</p>	<p>High: There are a number of trees within the site that offer the potential to support roosting bats.</p>	<p>Felling the trees could cause disturbance to bats in their breeding or resting places, damage, obstruction or destruction of their roosts or/ and risk of killing and injury to bats.</p> <p>These actions would constitute offences under the Wildlife and Countryside Act 1981, as amended and the Conservation of Habitats and Species Regulations 2017 (as amended).</p>	<p>Tree Bat Assessment and Bat Activity Surveys</p> <ul style="list-style-type: none"> - If any mature trees are to be directly impacted by the tree planting proposals, it is recommended that those trees on site be subject to a daylight inspection/ climbing inspection survey to categorise the trees according to the Bat Survey Guidelines (Collins, 2016). - Bat dusk and dawn surveys maybe be required, the number of surveys dependent on the categorisation of the trees during the daylight assessment. (May-October) - Should a bat(s) be found to be roosting in any of the on-site trees, works may need to be carried out under a licence issued by Natural England. Additional surveys may be required, and replacement roosts may also be needed to ensure the favourable conservation status of the species is maintained. - Should the farm buildings be affected by the proposals – a detailed assessment of their potential to support roosting bats should be undertaken. Follow up presence/ absence surveys might be required. - The retention and enhancement of the edge habitats and boundary features on site which act as a wildlife corridor will ensure the continued use of the site by commuting and foraging and roosting bats. - Bat box installation as an enhancement

Ecological Constraint	Location of Confirmed/ Potential Constraint	Likelihood of Ecological Constraint Being Present on Site	Protection Status	Initial Outline Recommendations / General Mitigation Proposals /Further Survey
Nesting Birds	Particularly woodland, woodland copses, hedgerows, treelines and edge habitats.	Assumed present	<p>Removal of mature trees, hedgerows and some areas of arable crop risks damage to and destruction of the nests and eggs of wild birds which would be an offence under the Wildlife and Countryside Act 1981, as amended.</p> <p>Nesting bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981, as amended, are also protected from disturbance.</p>	<p>Sensitive Timing of Works</p> <ul style="list-style-type: none"> - Subject to checks/licences for other protected species, vegetation removal should be undertaken outside the bird nesting season, i.e. from September to February inclusive (note that birds can nest within this period in good weather and are also protected). - If vegetation removal is not undertaken outside the bird nesting season then the vegetation must be checked by a suitability qualified Ecologist, prior to removal. - If an active nest(s) is found, a suitably qualified Ecologist should delineate a 'work exclusion buffer' around the vegetation containing the nest(s). No works are to take place within this buffer until after young have fledged. - Bird box installation as an enhancement.
Reptiles	There is a very limited amount of habitat suitable on site for 'common' reptile the majority of which is located around the field boundaries and edge habitats..	Low-Moderate	Proposed planting works could risk killing and injury to any reptiles, should they be present. This would constitute an offence under the Wildlife and Countryside Act 1981, as amended.	<p>Habitat Retention and Surveys</p> <ul style="list-style-type: none"> - The retention of edge habitats as a wildlife corridor along the periphery of the site and along boundaries within the site would negate the requirement for presence / absence reptile surveys and a habitat management approach to avoiding impacts employed instead. - Should grass field margins be directly impacted by proposals, it is recommended that prior to works commencing, these areas are maintained at a short sward height (5cm) for 1 week during the months of April-September, prior to a topsoil strip under the supervision of a suitably qualified Ecologist.



Ecological Constraint	Location of Confirmed/ Potential Constraint	Likelihood of Ecological Constraint Being Present on Site	Protection Status	Initial Outline Recommendations / General Mitigation Proposals /Further Survey
Badgers	Badger signs were found on site - dung - latrine	High - Confirmed on site	Site clearance could result in damage and destruction of setts, obstruction of access to setts and disturbance of any resident badgers, should they be present. These actions would constitute offences under the Protection of Badgers Act 1992.	Badger Survey <ul style="list-style-type: none"> - A badger survey should be conducted for the whole site and the area approximately 30m from the site boundary. - Should a sett be dug within the proposed works footprint, or within 30m of the works footprint boundary, any sett present may require closure under a licence issued by Natural England. Please note that sett closures can only be undertaken between July and November, inclusive.
Great Crested Newt	Suitable habitat exists in the form of water bodies/ponds hedgerows, deadwood habitat tree lines and woodland (on site and off site).	Moderate – High	The planting proposals might negatively impact GCN and may result in destruction of their habitat or/ and risk of killing and injury to GCN. These actions would constitute offences under the Wildlife and Countryside Act 1981, as amended and the Conservation of Habitats and Species Regulations 2017 (as amended).	Habitat Retention and Surveys <ul style="list-style-type: none"> - To determine if GCN are present within the 6 water bodies on site, it is recommended that Habitat Suitability assessments and eDNA surveys, where subsequently required, are undertaken. eDNA samples should be taken between 15 April and 30 June by an appropriately licenced ecologist. - All site boundary and linear features around field boundaries to be retained to maintain connectivity for this species. - Creation of a wildlife corridor around all edge and linear habitats will effectively protect the features that GCN are likely to be using on site and ensure continued movement and use for this species. - Should any grass margin habitat, waterbodies or linear features be directly affected by the scheme then an ecologist should be notified and advice in relation to GCN be provided.



Ecological Constraint	Location of Confirmed/ Potential Constraint	Likelihood of Ecological Constraint Being Present on Site	Protection Status	Initial Outline Recommendations / General Mitigation Proposals /Further Survey
Section 41 / BAP Species e.g. hedgehog, stag beetle	Various potential BAP /S.41 species in the area surrounding the site.	Moderate	Under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, local authorities should have regard to biodiversity when determining planning permission. The Section 41 / BAP lists are drawn up to assist local authorities and other bodies in their duties.	Habitat Retention and Enhancement <ul style="list-style-type: none"> - Retention of key habitats where possible, including deadwood. - Wildlife corridor incorporating the edge habitat and boundary features would ensure protection and continued use of the site by such species. - Enhancement of retained habitat with log piles, and stag beetle loggery creation



8 References

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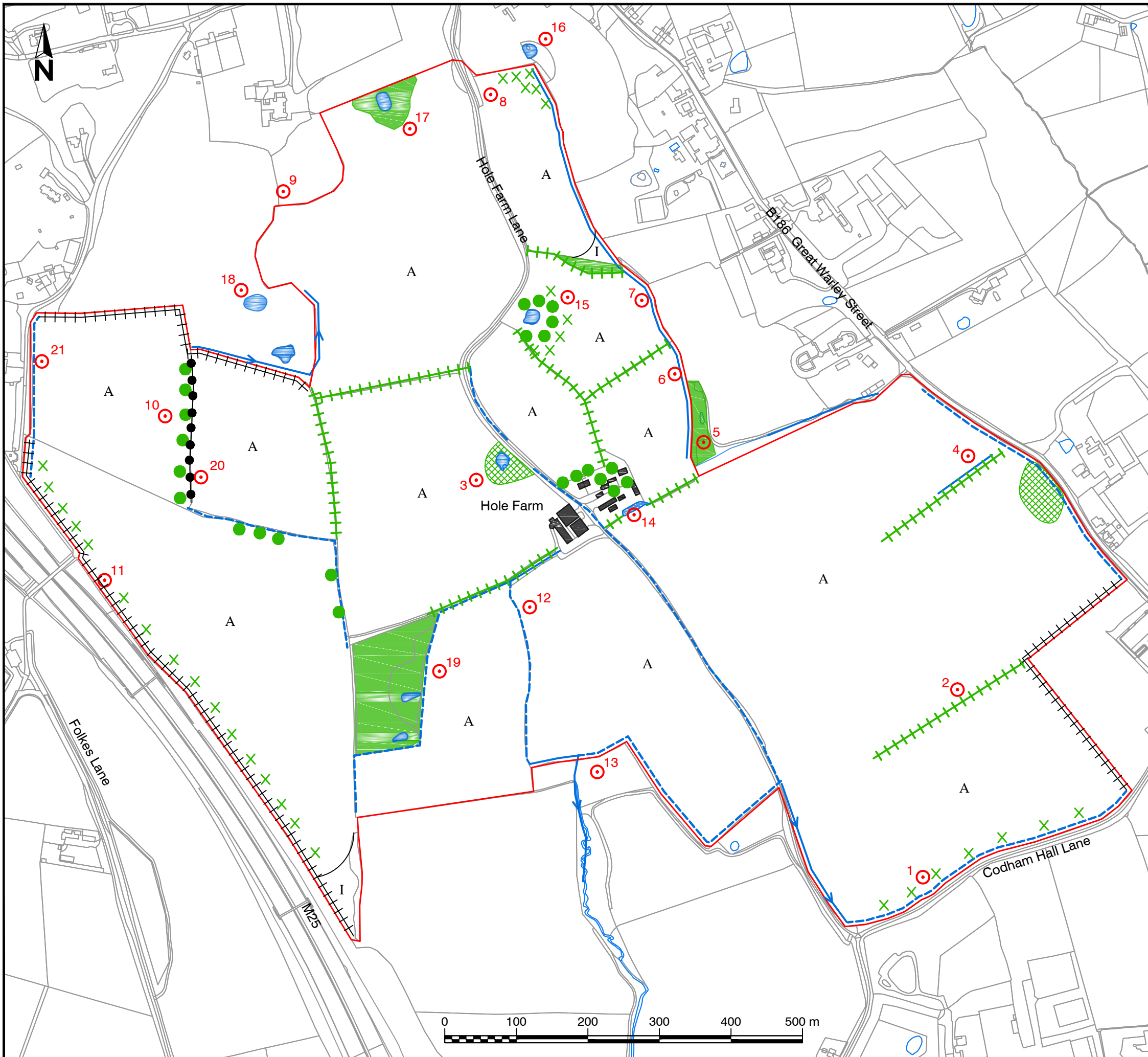
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

EWTBRC (2021) Ref: 205 Data search for Hole Farm, Great Warley; 2km standard search.

Essex Recorders Partnership (2021) Data Search Report. Bio and Geodiversity data regarding Project Hole Farm Radius 2km from TQ584897.

Appendix A. Phase 1 Habitat Plan





- Legend**
- Plot boundary
 - A1.1 Broadleaved woodland - semi-natural
 - A2.1 Scrub- dense/continuous
 - A2.2 Scrub - scattered
 - A3.1 Broadleaved parkland/scattered trees
 - B4 Improved grassland
 - G1 Standing water
 - G2 Running water
 - J1.1 Cultivated/disturbed land - arable
 - J2.3.2 Hedge with trees - species-poor
 - J2.4 Fence
 - J2.6 Dry ditch
 - J2.8 Earth bank
 - J3.6 Buildings
 - Target note

0	02/06/2021	First issue	JMG	LW	LW
Rev	Revision Date	Purpose of revision	Drawn	Check'd	App'd

Client



Project
Hole Farm

Drawing title
Phase 1 Habitat Survey

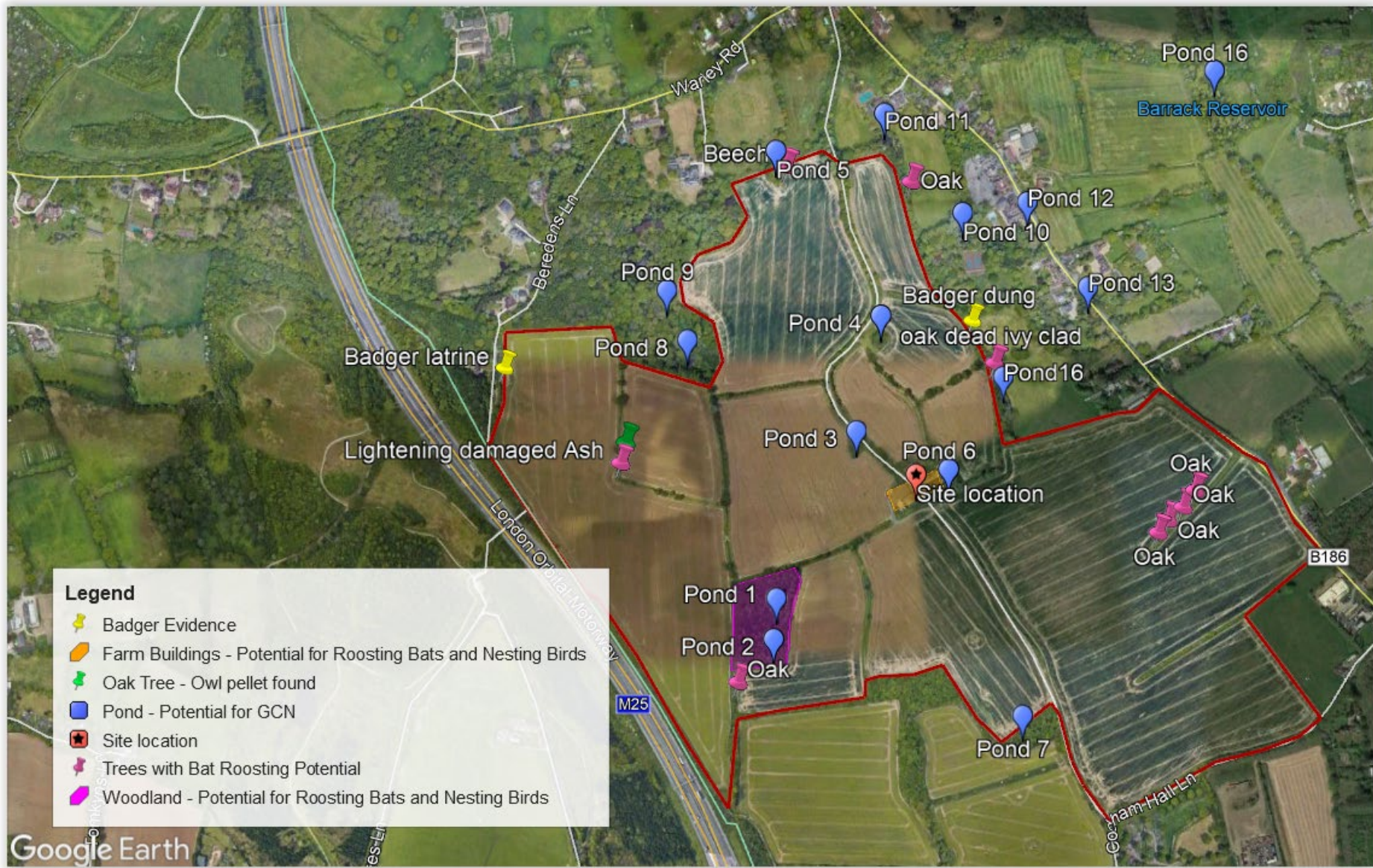
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This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

Appendix B. Ecological Constraints Plan





Google Earth

Appendix C. Photographic Record

Photo 1: Arable crops	Photo 2: Dry Ditch TN1
	
Photo 3: Wet ditch at TN4	Photo 4: Grass field margins
	
Photo 5: Grass field margins	Photo 6: Bridle Path at TN11
	

Photo 7: Hedgerows and Treelines



Photo 8: Hedgerows and Treelines



Photo 9: Trees at TN4



Photo 10: Ash at TN5

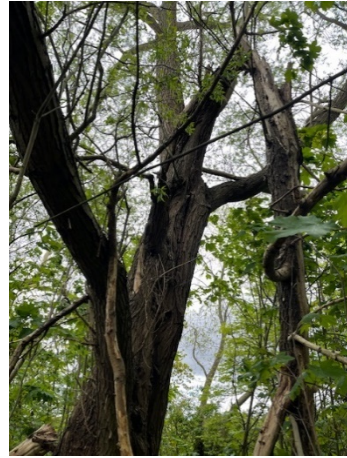


Photo 11: Trees at TN10



Photo 12: Off-site TN5 area



Photo 13: Off-site TN5



Photo 14: Silverleaf poplar trees NE of TN17



Photo 15: Off-site woodland TN9



Photo 16: Off-site woodland TN9

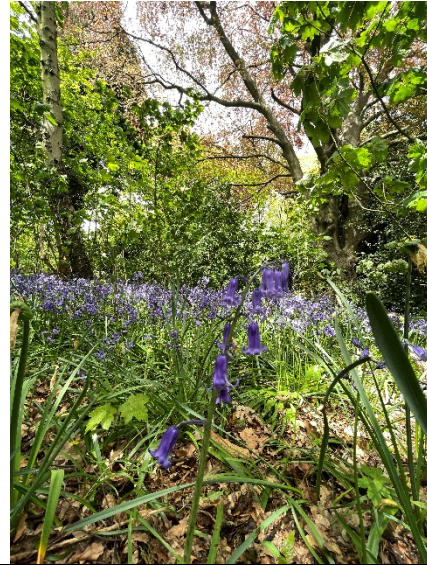


Photo 17: On-site Woodland TN19

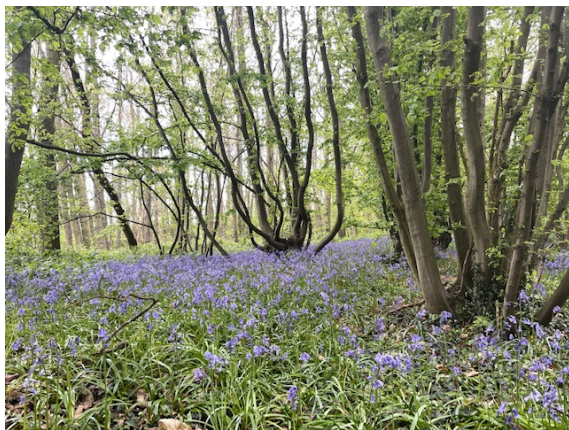


Photo 18: On-site woodland TN19



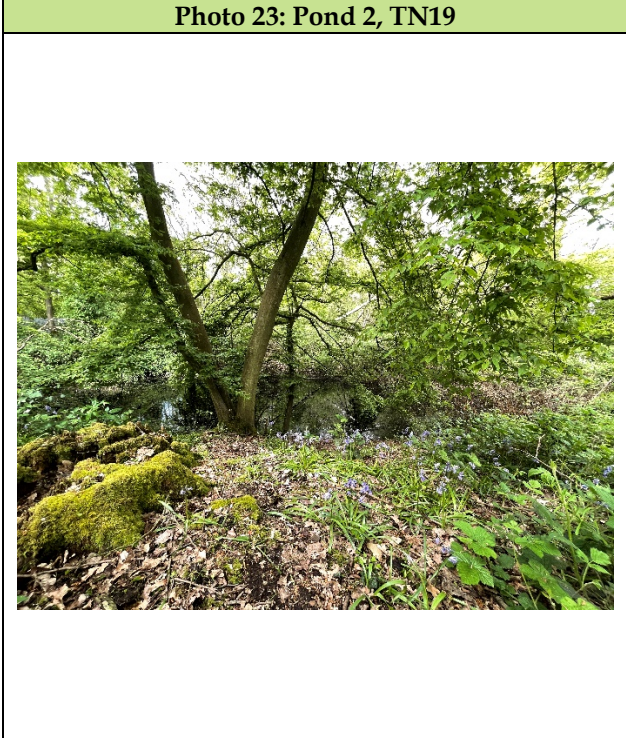


Photo 25: Farm Buildings

Photo 26: Farm Buildings





Photo 27: Owl pellet and tree TN20



Photo 28: Badger dung (Appendix B)



Photo 29: Badger latrine (Appendix B)



Appendix D. Notes and Limitations to Ecological Surveys

These Notes and Limitations cover ecological work undertaken by Sonar Ecology Ltd and its sub-contractors. They are additional and complimentary to Sonar Ecology's Standard Terms and Conditions and should be read in association with them.

1. Sonar Ecology staff and their sub-consultants have endeavored to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.
2. Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility can be accepted where these methodologies fail to identify all species on site. Sonar Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.
3. The results of the survey and assessment work undertaken by Sonar Ecology are representative at the time of surveying.
4. Sonar Ecology will advise on the optimum survey season for a particular habitat/species prior to undertaking the survey work. However, Sonar Ecology cannot accept responsibility for the accuracy of surveys undertaken outside this period.
5. Sonar Ecology cannot accept responsibility for data collected from third parties.
6. Optimum conditions for alien species surveys i.e. Japanese knotweed, Giant hogweed and Himalayan balsam, are between the months of April and September inclusive. Sonar Ecology will advise on the presence of the species, although strategies to deal with their eradication are subject to a separate scope of works.
7. The findings of this ecological report can be considered valid for 2 years from the date of the survey as long as no major deviation in habitat management has occurred on site in the interim period.