

Hornsea 4

Ørsted



Hornsea Project Four: Preliminary Environmental Information Report (PEIR)

Volume 6, Annex 3.1: Ecology - Extended Phase 1 Habitat Survey Report

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Glossary

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more National Significant Infrastructure Projects (NSIP).
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement.
Environmental Statement	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations
Export Cable Corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Project Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
Landfall	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore and onshore ECC, intertidal working area and landfall compound.
Ørsted Hornsea Project Four Ltd.	The Applicant for the proposed Ørsted Hornsea Project Four Ltd. offshore wind farm project,
Onshore export cables	Cables connecting the landfall first to the onshore substation and then on to the NGET substation at Creyke Beck, located within the ECC..

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Term	Definition
Onshore substation (OnSS)	Located as close as practical to the NGET substation at Creyke Beck and will include all necessary electrical plant to meet the requirements of the National Grid.

Acronyms

Acronym	Definition
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
DCO	Development Consent Order
EC	European Commission
ECC	Export Cable Corridor (onshore)
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
eDNA	Environmental DNA
OEMP	Outline Ecological Management Plan
EPIHS	Extended Phase 1 Habitat Survey
HSI	Habitat Suitability Index
JNCC	Joint Nature Conservation Committee
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NEYEDC	North and East Yorkshire Ecological Data Centre
OnSS	Onshore Substation
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PMoW	Precautionary Method of Working
PRF	Potential Roost Feature
PRoW	Public Right of Way
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TN	Target Note

Units

Unit	Definition
Ha	Hectare
Km	Kilometre
m	Metre

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1 Introduction

1.1 Project Background

1.1.1.1 Ørsted Hornsea Project Four Limited (the Applicant) is proposing to develop Hornsea Project Four Offshore Wind Farm (Hornsea Four). Hornsea Four will be located approximately 65 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and connection to the electricity transmission network. The location of Hornsea Four is illustrated on (Figure 1- Figure 10). The Preliminary Environmental Information Report (PEIR) boundary combines the search areas for the onshore and offshore infrastructure.

1.1.1.2 Royal HaskoningDHV was commissioned to undertake an updated Extended Phase 1 Habitat survey (EP1HS) of Hornsea Four. To inform the Scoping stages of the project, an initial habitat assessment was conducted, comprising a desktop review of aerial photography obtained in July 2018, followed by a ground-truthing exercise. This is reported in the Hornsea Four Scoping Report (Ørsted, 2018). This updated EP1HS was undertaken to update the habitat information following the scoping stage survey and to further inform the requirement of any Phase 2 species specific surveys.

1.2 Aims and objectives

1.2.1.1 The aims of the EP1HS consists of three components, which collectively enable a preliminary understanding of the ecological value of the onshore survey area. These components include:

- A desktop review that summarises information on existing protected species records and statutory and non-statutory nature conservation designations within and around Hornsea Four;
- The recording of all habitats within the Hornsea Four EP1HS study area obtained from the field survey; and
- A data led assessment of the likelihood of the Hornsea Four EP1HS study area supporting legally protected species or species of conservation concern.

1.2.1.2 As such, the purpose of this report is to:

- Present the results of the updated EP1HS undertaken in February 2019;
- Provide an overall understanding of the existing ecological value of the Hornsea Four EP1HS study area; and
- Inform the requirements and scope of the Phase 2 species specific surveys.

1.2.1.3 This report has been prepared following the guidelines as set out in the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines on Ecological Report Writing (CIEEM, 2017).

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1.2.1.4 This technical report supports **Volume 3, Chapter 3: Ecology and Nature Conservation**, which will provide an assessment on any likely significant Hornsea Four may have on the local area's natural environment. Alongside any proposed mitigation works. It should be noted that assessments have not been undertaken where baseline data collection was incomplete at the point of preparing this technical report. This was agreed in consultation with Natural England (NE), The Yorkshire Wildlife Trust (YWT), the Royal Society for the Protection of Birds (RSPB) and the Environment Agency (EA) during the third Hornsea Four Ecology and Nature Conservation Evidence Plan meeting on 8th April 2019. Therefore, this PEIR will support the development of an Environmental Statement (ES) which will contain all assessments required to inform the Development Consent Order (DCO) application.

2 Legislation and Policy

2.1.1.1 This section summarises the relevant information regarding the legal protection afforded to the habitats and species mentioned in this report. However, it should be noted that this is for information only and is not intended to be exhaustive or to replace specialised legal advice.

2.1.1.2 **Table 1** provides a summary of the key legislation and policy relevant to Hornsea Four.

Table 1: Summary of key legislation and policy relevant to the onshore survey area.

Legislation	Relevance
Wildlife and Countryside Act 1981 (as amended) (WCA, 1981)	Codifies the European Union (EU) Directive 2009/147/EC (the Birds Directive) into UK law; provides legal protection for European designated sites (Special Protection Areas (SPA), Ramsar sites) and Sites of Special Scientific Interest (SSSI); outlines legal offences in relation to wild birds, animals, and invasive species; and provides lists of species which are protected under the Act.
The Conservation of Habitats and Species Regulations 2017 (as amended) (Conservation of Habitats and Species Regulations, 2017)	Codifies the EU Directive 92/43/EEC (The Habitats Directive) into UK law, and provides legal protection for European designated sites (Special Area of Conservation (SAC)).
Natural Environment and Rural Communities Act 2006 (NERC, 2006)	Details a list of UK habitats and species of 'principle importance,' which require protection within the UK.
Protection of Badgers Act 1992 (Protection of Badgers Act, 1992)	Outlines legal offences in relation to badgers, including taking, injuring or killing badgers, and interfering with badger setts.
The Hedgerow Regulations 1997 (Hedgerow Regulations, 1997)	Outlines the definition of 'important' hedgerows and legal offences in relation to their disturbance or removal.
UK Post-2010 Biodiversity Framework (JNCC, 2012)	Supersedes the UK Biodiversity Action Plan (UK BAP), which fulfilled a legal obligation under the Convention on Biological Diversity to identify and produce action plans for priority habitats and species.

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3 Methodology

3.1.1.1 This section presents the study area and methodology used to undertake the desk-based and field survey components of the updated EP1HS, which then informed the Phase 2 species specific surveys currently being undertaken.

3.2 Study area

3.2.1 Desktop review Study Area

3.2.1.1 A desktop review of third-party data sources was undertaken for information on existing protected species records and statutory and non-statutory nature conservation designations within and up to 2 km (see [Figure 1- Figure 10](#)) (5 km for bat species and birds) of Hornsea Four.

3.2.2 Field Survey Study Area

3.2.2.1 The updated Hornsea Four EP1HS study area included all onshore elements of Hornsea Four plus an additional 50 m buffer. A 50 m buffer has been used for any further route adjustments which may take place as part of the route planning refinement process. The updated EP1HS study area is delineated by the red dashed line on [Figure 11 - Figure 35](#), and the following Hornsea Four onshore elements:

- Landfall – including temporary logistics compound and temporary access tracks;
- Onshore Export Cable Corridor (ECC) – including temporary logistics compounds and temporary access tracks; and
- Onshore Substation (OnSS) and 400kV ECC – including the temporary and permanent working areas, temporary and permanent access tracks, and the 400kV ECC grid connection area.

3.3 Desktop review

3.3.1.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (Defra, 2013) was reviewed in January 2019 for information on statutory sites and notable habitats (e.g. ancient woodlands) of nature conservation value, within the 2 km Hornsea Four EP1HS study area (as shown on [Figure 1- Figure 10](#)).

3.3.1.2 A search for water bodies within and up to 250 m of Hornsea Four was also made using 1:25,000 Ordnance Survey (OS) maps to inform the potential for great crested newts *Triturus cristatus* to be present. A 250 m buffer is considered appropriate having considered the habitats within and around Hornsea Four. Although great crested newts can use suitable terrestrial habitat up to 500 m from a breeding pond (English Nature, 2001), research suggests that newts are likely to travel no more than 250 m from ponds where suitable habitats for foraging and hibernation exist (Cresswell and Whitworth, 2004).

3.3.1.3 The water body information derived from the OS maps was then used to identify the potential presence of (and potential for impacts on) great crested newts and other aquatic

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and semi-aquatic protected species including otters *Lutra lutra* and water voles *Arvicola amphibius*. For further details on survey and preliminary results see [Volume 6, Annex 3.4: Great Crested Newt Environmental \(eDNA\) Survey Report](#).

- 3.3.1.4 High quality 3 cm resolution imagery obtained by the project in July 2018 has been used, in combination with existing habitat mapping, to review the remaining 50% of the Hornsea Four EP1HS study area that was not able to be surveyed in 2019 due to landowner permission not being granted. These images were reviewed in February 2019. See [Section 3.4.4](#) for further information on survey limitations.
- 3.3.1.5 The UK Post-2010 Biodiversity Framework (2012) (which replaces the UK Biodiversity Action Plan (UK BAP)) and the East Riding BAP Strategy, were reviewed in February 2019 to identify habitats and species of conservation concern that may be present within the Hornsea Four EP1HS study area.
- 3.3.1.6 Biological data received from the North and East Yorkshire Ecological Data Centre (NEYEDC) as part of the previous habitat mapping was also reviewed as part of the updated EP1HS desktop review in February 2019.

3.4 Field Survey Methodology

- 3.4.1.1 The updated EP1HS was undertaken between 6th and 15th February 2019 to record the habitats within the Hornsea Four EP1HS study area and to identify the presence or likely presence of legally protected and notable species.
- 3.4.1.2 The updated EP1HS followed the 'Extended Phase 1' methodology as set out in Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment (IEMA, 1995). This method of survey enabled information on the habitats within the survey area to be provided and enabled an assessment of the potential for legally protected species to be present on or adjacent to the Hornsea Four EP1HS study area. Habitats have been recorded within the Hornsea Four EP1HS study area using the system set out within the Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 habitat survey: A technique for environmental audit (JNCC, 2010).
- 3.4.1.3 All of the habitats within the Hornsea Four EP1HS study area that were accessible at the time of the survey have been mapped and Target Notes (TN) ([Appendix A – Target Notes](#)) have been used to provide details of characteristic habitats, species composition and to highlight any features of ecological interest.
- 3.4.1.4 An assessment of hedgerows within the Hornsea Four EP1HS study area was also undertaken. The methodology followed that outlined in the Hedgerow Survey Handbook (Defra, 2007) and is in line with the Hedgerow Regulations (Hedgerow Regulations, 1997). All hedgerows were recorded in line with the JNCC habitat classifications (JNCC, 2010), as shown in [Table 2](#).

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Table 2: Hedgerow classifications.

Classification	Description	JNCC Classification	Notes
Intact hedgerow	Species-rich	J2.1.1	Hedgerow with no significant gaps that remains stock proof and contains five or more woody species per 30m length.
	Species-poor	J2.1.2	Hedgerow with no significant gaps that remains stock proof and contains less than five woody species per 30m length.
Defunct hedgerow	Species-rich	J2.2.1	Hedgerow with significant gaps that is not stock proof and contains five or more woody species per 30m length.
	Species-poor	J2.2.2	Hedgerow with significant gaps that is not stock proof and contains less than five woody species per 30m length.
Hedgerow with trees	Species-rich	J2.3.1	Hedgerow that is made of a mix of tree and shrub species, with five or more woody species per 30m length.
	Species-poor	J2.3.2	Hedgerow that is made of a mix of tree and shrub species, with less than five woody species per 30m length

3.4.1.5 Following the Guidelines for Baseline Ecological Assessment (CIEEM, 2017), the habitat survey was 'extended' to make preliminary investigations in respect to the following legally protected and/or notable species:

Birds

3.4.1.6 It should be noted that specific surveys for over-wintering have been undertaken and the findings are reported separately in [Volume 6, Annex 3.2: Onshore Ornithology – Wintering and Migratory Birds Survey Report](#). The breeding bird survey effort was undertaken between April and June 2019 (inclusive) and the findings will be reported in a separate technical annex that will accompany the Environmental Statement (ES).

3.4.1.7 As part of the updated EP1HS, a search for all habitats with suitability to support breeding and over-wintering birds was undertaken, with a focus on those habitats with the suitability to support birds listed on Schedule 1 of the Wildlife and Countryside Act (WCA, 1981) and IUCN 'Red' and 'Amber' List species (IUCN, 2019). Such habitats include trees, hedgerows, water bodies, grazing marsh or fen, lowland heath and agricultural land.

Badgers

3.4.1.8 A search for signs of badgers *Meles meles* activity within the Hornsea Four EP1HS study area was undertaken. Signs such as setts, tracks, hairs, bedding and spoil heaps, snuffle holes and latrines, were checked for. Due to the sensitivity of this species, these results are reported separately in [Volume 6, Annex 3.10: Badger Survey Report \(confidential\)](#).

3.4.1.9 Where active setts were found, they were classified using the following categories:

- **Main sett** - Several holes with large spoil heaps and obvious paths leading from and between sett entrances;
- **Annexe sett** - Normally less than 150 m from main setts, comprising several holes. May not be in use all the time, even if main sett is very active;

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- **Subsidiary sett** - Usually at least 50 m from main sett with no obvious paths connecting to other setts. May only be used intermittently; and
- **Outlier sett** - Little spoil outside holes, with no obvious paths connecting to other setts. Only used sporadically, and may be used by foxes and rabbits.

Bats

3.4.1.10 All trees, buildings and structures (e.g. bridges and farm buildings) were assessed for their potential to support roosting bats from the ground and using binoculars. Each feature was assigned a classification of either negligible, low, moderate or high suitability for supporting roosting bats following the guidelines set out in Table 4.1 of the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 2016).

3.4.1.11 All trees, water bodies and hedgerows were also assessed for their potential to provide commuting and foraging habitat for bats, in accordance with BCT guidelines (BCT, 2016).

Water voles and otters

3.4.1.12 All standing and running water bodies within the Hornsea Four EP1HS study area were recorded and will be subject to further presence/absence surveys during the appropriate season (between March and September) in 2019. Assessments of a water body's suitability for water voles and otters was made in line with the Mammal Society guidance (Dean et al. 2016) and standing advice from Natural England (Natural England, 2015). Only water bodies that were dry at the time of the updated EP1HS have been scoped out of any further survey effort.

Great crested newts

3.4.1.13 All standing water bodies within 250 m of the Hornsea Four EP1HS study area have been mapped and will be subject to a Habitat Suitability Index (HSI) assessment (following Oldham et al. 2000) and an Environmental DNA (eDNA) survey within the appropriate survey window (between mid-April and the end of June) during 2019 (see [Section 5.2](#)). For further details on the survey methodology and result for GCN see [Volume 6, Annex 3.4: Great Crested Newt Environmental DNA \(eDNA\) Survey Report](#).

Reptiles

3.4.1.14 Areas of potential reptile habitat were identified during the updated EP1HS. Habitat mosaics were noted, such as where a collection of suitable habitats for reptile hibernation, basking, and foraging occur together. These habitats include habitat transitions (ecotones), rank grassland, lowland heath, piles of debris (hibernacula), or bare ground (Edgar et al. 2010).

Invasive non-native species

3.4.1.15 Where present, the location and extent of invasive non-native species was recorded. Due to the large number of invasive non-native species present in the UK, the updated EP1HS focussed on the species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA, 1981).

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3.4.2 Surveyors

3.4.2.1 The updated EP1HS was conducted by two Royal HaskoningDHV ecologists. The survey was led by Charlotte Clements, BSc Hons, Associate Member of CIEEM (ACIEEM) and assisted by Maria Walentek BSc. MSc (ACIEEM). Charlotte and Maria both have over 6 years of experience in Extended Phase 1 Habitat surveying.

3.4.3 Weather conditions

3.4.3.1 **Table 3** summarises the weather conditions encountered during the updated EP1HS.

Table 3: Weather conditions during the updated EP1HS.

Date (2019)	Weather conditions
6th February	Dry, fine, moderate breeze, approximately 7°C.
7th February	Rain, wind, approximately 4°C.
8th February	Showers, strong wind (40mph gusts), approximately 5°C.
12th February	Dry, fine, approximately 6°C.
13th February	Dry, fine, approximately 7°C.
14th February	Dry, fine, approximately 8°C.
15th February	Dry, fine, moderate breeze, approximately 4°C.

3.4.4 Survey limitations

3.4.4.1 The survey team covered all land for which landowner access permission was granted at the time that the updated EP1HS was undertaken. Approximately 50% of the Hornsea Four EP1HS study area was surveyed during the February 2019 field survey, and the remaining 50% was surveyed using aerial photography.

3.4.4.2 The remaining areas that were inaccessible at the time of conducting the survey, and will be surveyed (subject to landowner access agreement) prior to the submission of the Hornsea Four ES. Survey coverage of the updated EP1HS is shown on **Figure 11 - Figure 35**.

3.4.4.3 Some habitats could not be fully accessed during the updated EP1HS as in a small number of locations physical barriers, such as dense scrub, prevented entry. However, generally these areas were small and discrete (such as dense bramble covering ditches) and were encountered infrequently. In the few locations where they were encountered, they were recorded as potentially providing field signs which could not be picked up during the field survey.

3.4.4.4 The updated EP1HS was undertaken in February 2019. Although this is outside the optimal survey period for identifying ground flora species and habitat communities, sufficient evidence of key indicator species were found enabling the successful identification of habitat

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communities. Additionally, the majority of habitats encountered during the updated EP1HS was consistent with those expected of agricultural landscapes and colonised by identifiable species, for example scrub dominated by bramble and hawthorn. Therefore, it is considered that the survey was robust and suitable to characterise the site for the purposes of an EIA.

3.4.4.5 Additionally, although the survey team made the utmost effort to cover every habitat and pick up all field signs present during the updated EP1HS, on occasion some field signs can be missed. Despite this, the data presented in this report is considered to provide an accurate description of the habitats within the Hornsea Four EP1HS study area .

4 Results

4.1 Desktop review results

4.1.1 Statutory and Non-statutory designated sites

4.1.1.1 Designated sites identified during the desk-based review are listed in [Table 4](#) below and shown on [Figure 1- Figure 10](#). The designated sites are listed in order from the landfall through to the onshore substation.

Table 4: Statutory and non-statutory designated sites within 2 km of the onshore survey area.

Designated site (ordered from landfall to OnSS)	Present within survey area (Yes / No)
Statutory designated sites	
Greater Wash (SPA)	No
River Hull Headwaters (SSSI)	Yes
Bryan Mills Field (SSSI)	No
Burton Bushes (SSSI)	No
Non-statutory designated sites	
Hamilton Hill, Barmston (candidate LWS)	No
Gembling Common (LWS)	No
Foston Fox Covert Heronry (LWS)	No
Copper Hall Wood (candidate LWS)	No
Gravel Pit, North Frodingham (candidate LWS)	No
Frodingham Pits / Coneygarth (candidate LWS)	No
Emmotland Soak Drain (LWS)	No
Cranswick Common (candidate LWS)	No
Corpslanding Road (LWS)	No
Sheepman Lane (LWS)	No
Easingwold Farm (historic LWS)	No
Watton Carr (LWS)	No
Barff Hill Causeway (LWS)	No

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Designated site (ordered from landfall to OnSS)	Present within survey area (Yes / No)
Mill Dam Beswick (LWS)	No
Lockington (candidate LWS)	No
Bryan Mills Beck (LWS)	Yes
Lake's Wood (LWS)	No
Bealey's Beck, Lockington (candidate LWS)	Yes
Scorborough Lane (LWS)	No
Old Lane, Leconsfield (LWS)	No
Bealey's Lane (LWS)	No
Leman Road Corner – Moorbeck Road a (LWS)	No
Leman Road Corner – Moorbeck Road b (LWS)	No
Leman Wood (LWS)	No
Bygot Wood Lane, Leconfield (LWS)	No
Raventhorpe Embankment (LWS)	Yes
Driffield Road (LWS)	No
Lambfold Wood (historic LWS)	No
Burton Bushes Veteran Trees (candidate LWS)	No
Low Balk Road, Bishops Burton (LWS)	No
Newbald Road (LWS)	Yes
Newbald Road, Beverley (LWS)	No
Shorthill Hag (candidate LWS)	No
Swadgery Mere Wood (historic LWS)	No
Beverley Limekilns (LWS)	No
Moor Lane (LWS)	Yes
Risby Park (LWS)	No
Fishpond Wood, Risby Estate (LWS)	No
Birkhill Wood (LWS)	No
Jillywood Lane (LWS)	Yes
Drove Road (candidate LWS)	No
Woodhill Path, Cottingham (LWS)	No
Mill Beck and Fields (candidate LWS)	No
Barf Hill Wood (historic LWS)	No
Bentley Moor Wood (LWS)	No
Beverley Westwood Waxcaps (LWS)	No
Wilsthorpe Dunes (LWS)	No

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4.1.2 UK Habitats of Principal Importance

4.1.2.1 The following UK Habitats of Principal Importance are present within the Hornsea Four EP1HS study area, and are shown on [Figure 1- Figure 10](#):

- Coastal and Floodplain Grazing Marsh;
- Deciduous Woodland;
- Maritime Cliff and Slope;
- Reedbeds; and
- Traditional Orchard.

4.1.2.2 [Figure 1- Figure 10](#) also include the habitat data collated from the National Forestry Commission dataset. Key woodland habitat types that are present within the Hornsea Four EP1HS study area are:

- Assumed Woodland;
- Broadleaved;
- Conifer;
- Mixed Woodland – predominantly Broadleaved;
- Mixed Woodland – predominantly Conifer; and
- Young trees.

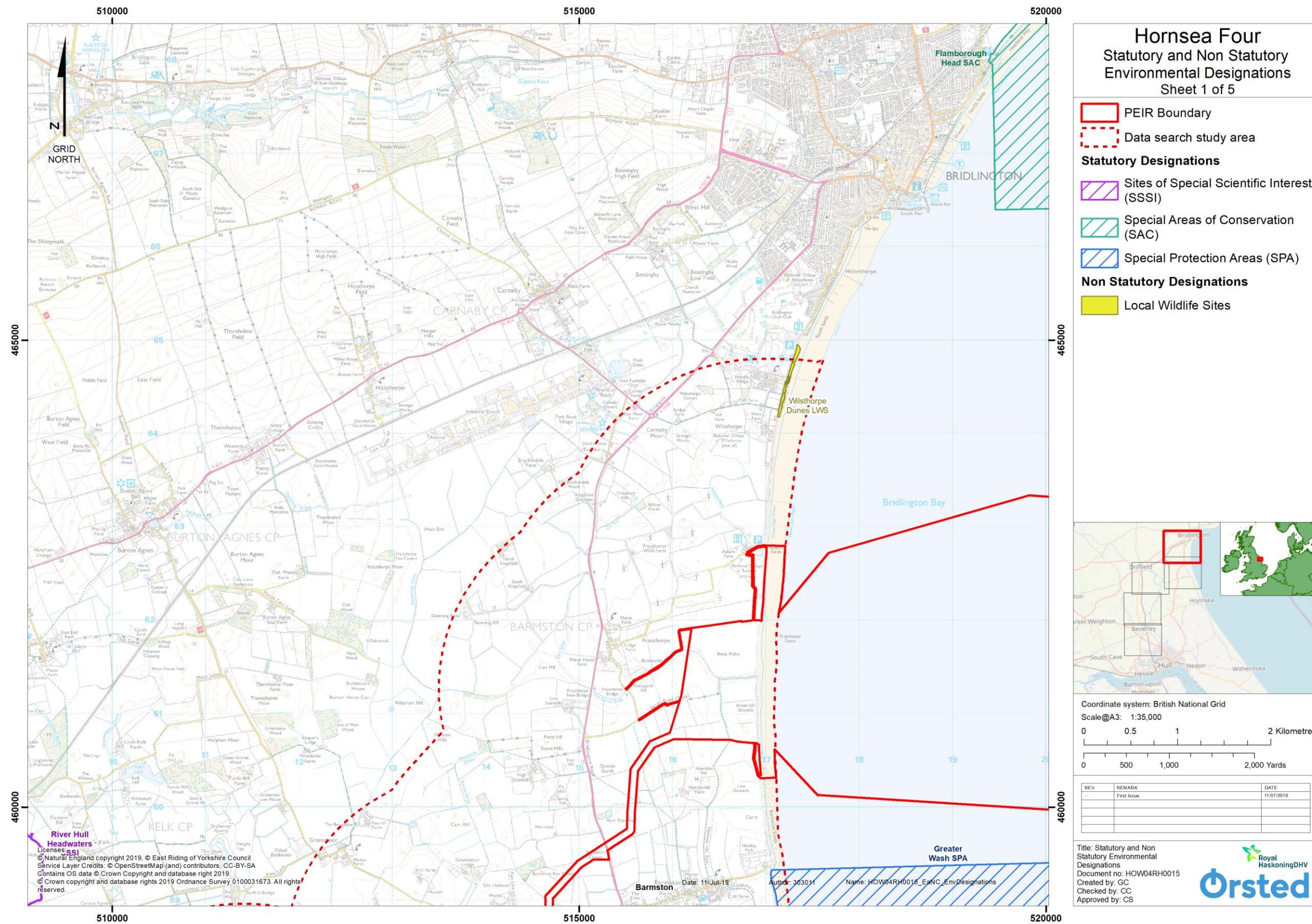


Figure 1: Statutory and Non-Statutory Designated Sites – Landfall (1) (Not to Scale).

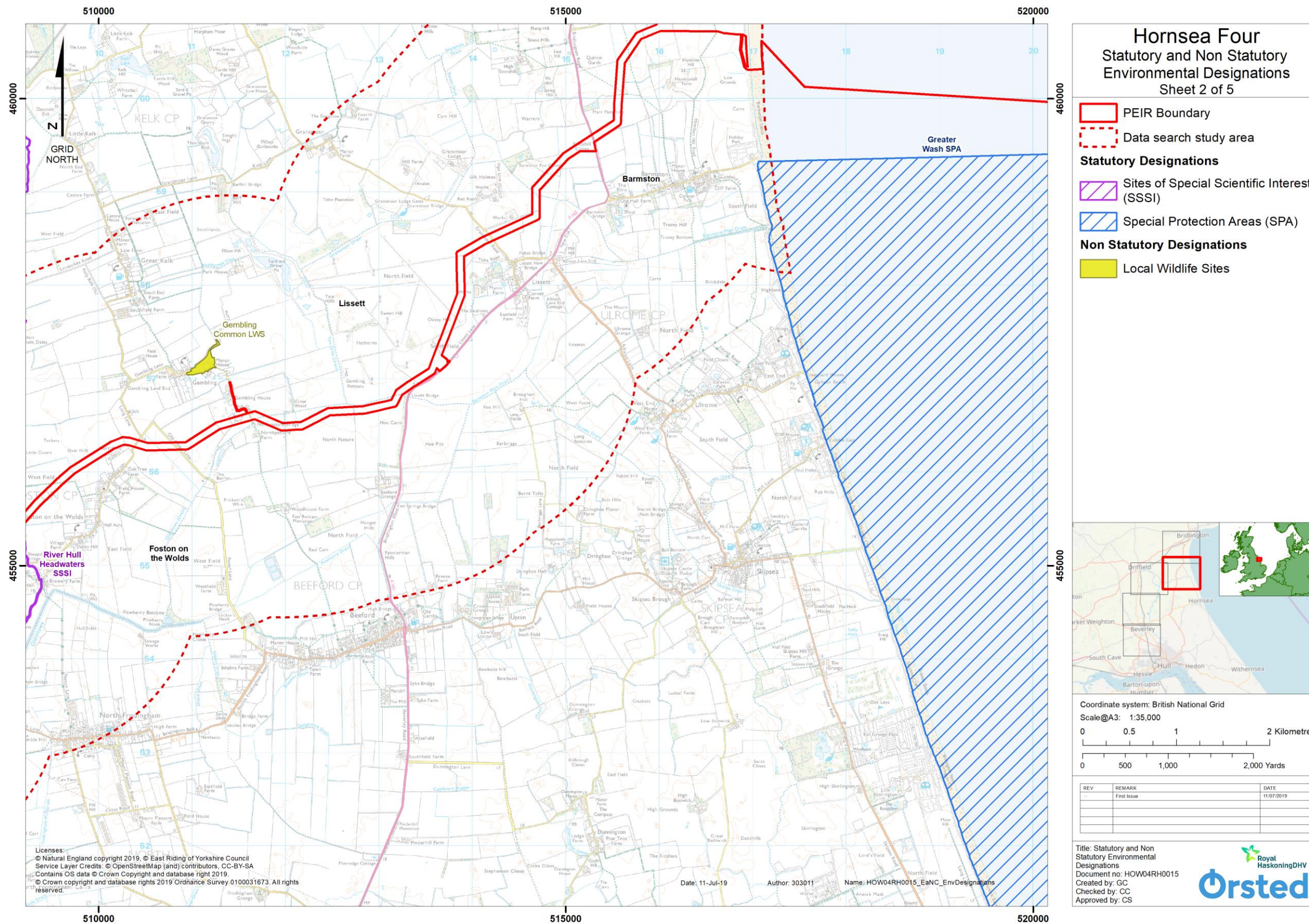


Figure 2: Statutory and Non-Statutory Designated Sites – Landfall (2) (Not to Scale).

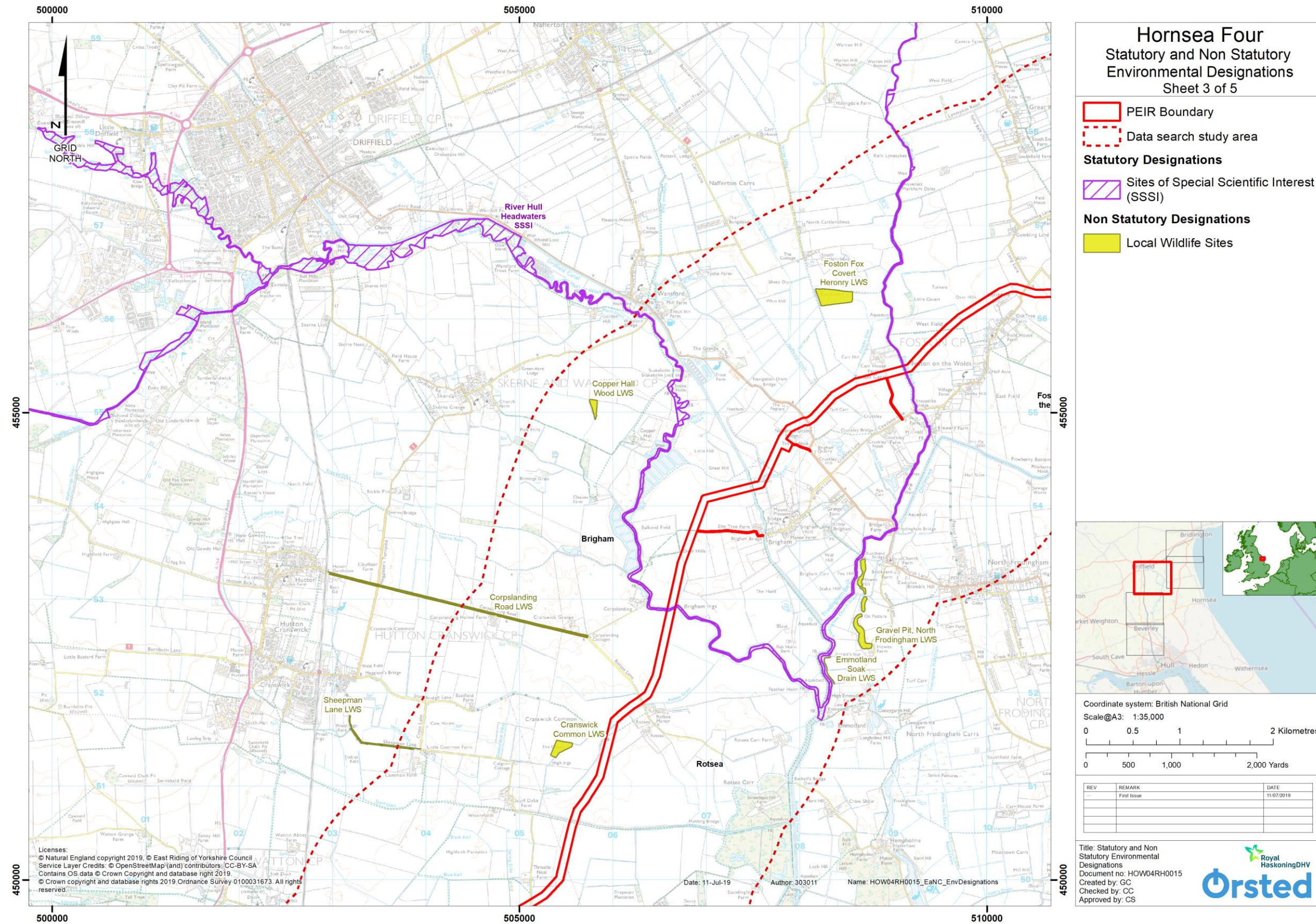


Figure 3: Statutory and Non-Statutory Designated Sites – ECC (1) (Not to Scale).

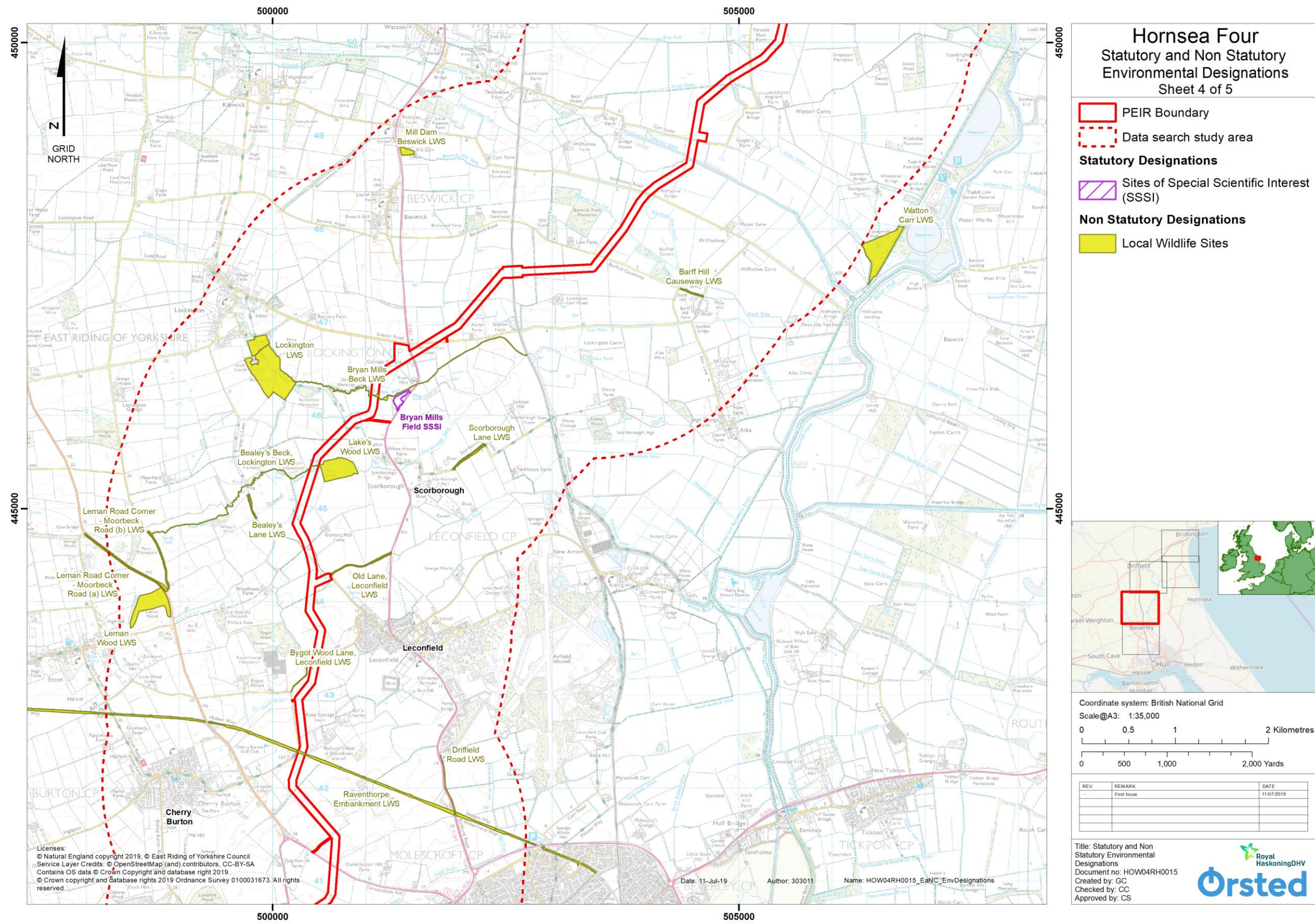


Figure 4: Statutory and Non-Statutory Designated Sites – ECC (2) (Not to Scale).

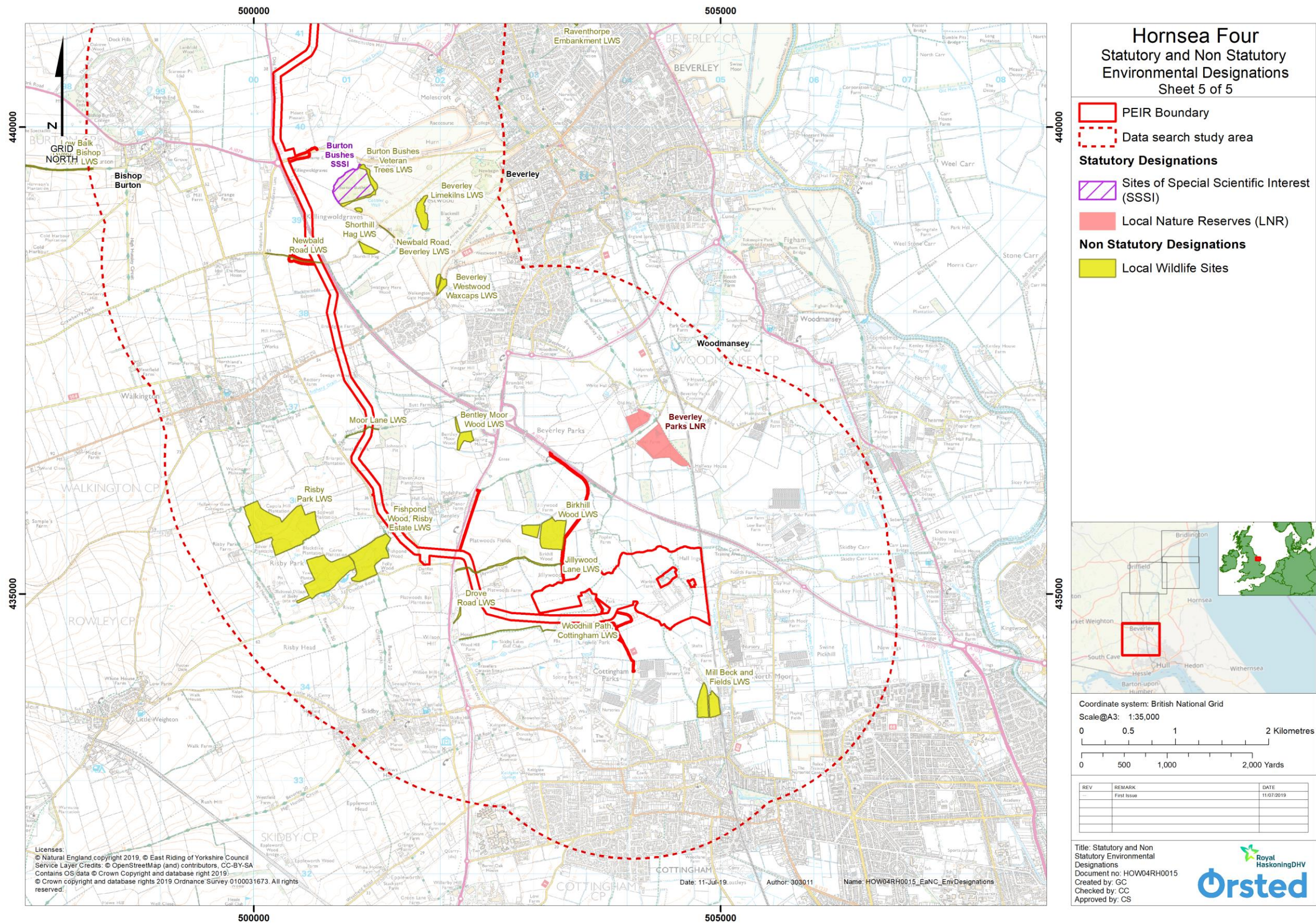


Figure 5: Statutory and Non-Statutory Designated Sites – OnSS (Not to Scale).

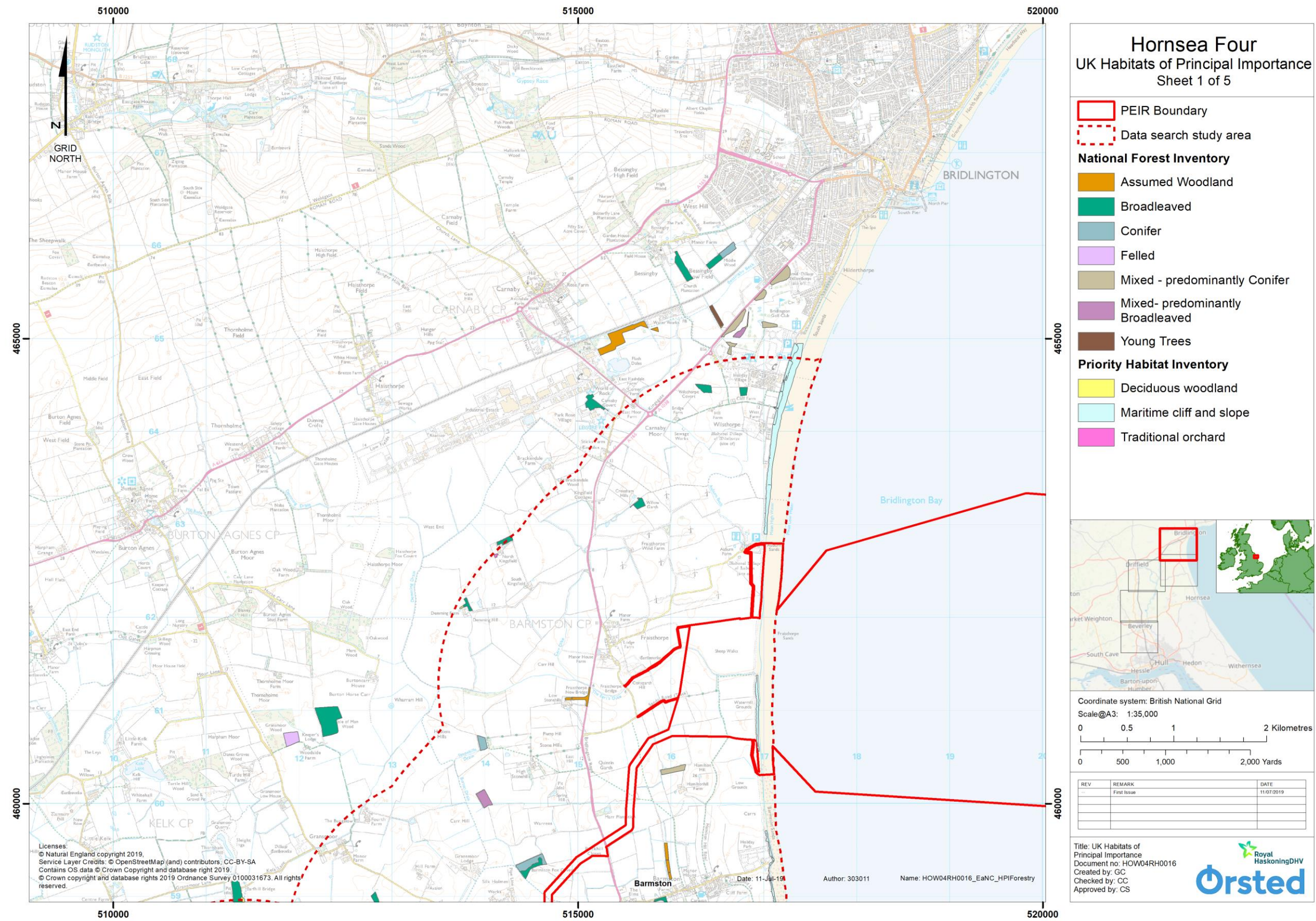


Figure 6: UK Habitats of Principal Importance (UKHPI) and Forestry – Landfall (1) (Not to Scale).

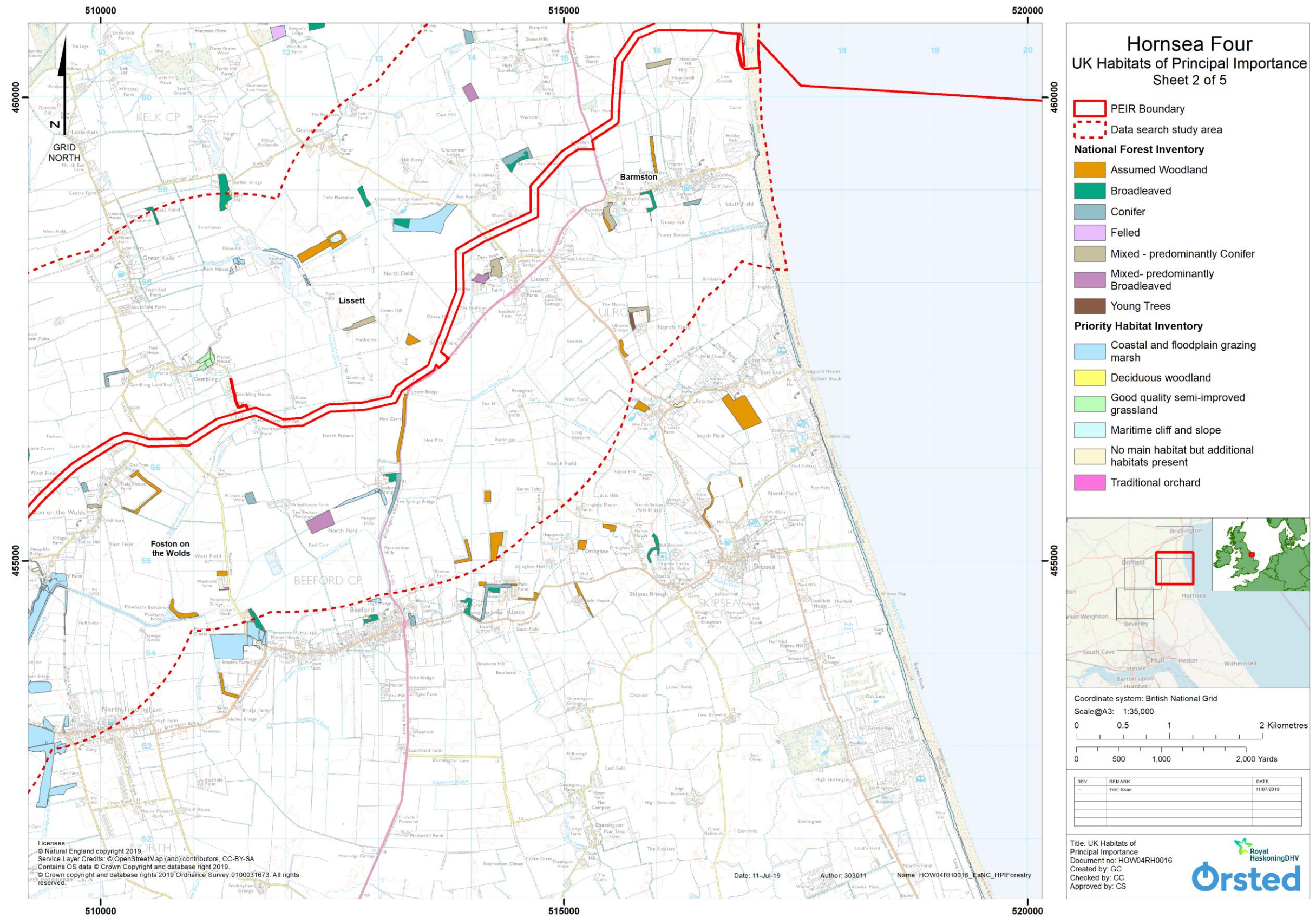


Figure 7: UK Habitats of Principal Importance (UKHPI) and Forestry – Landfall (2) (Not to Scale).

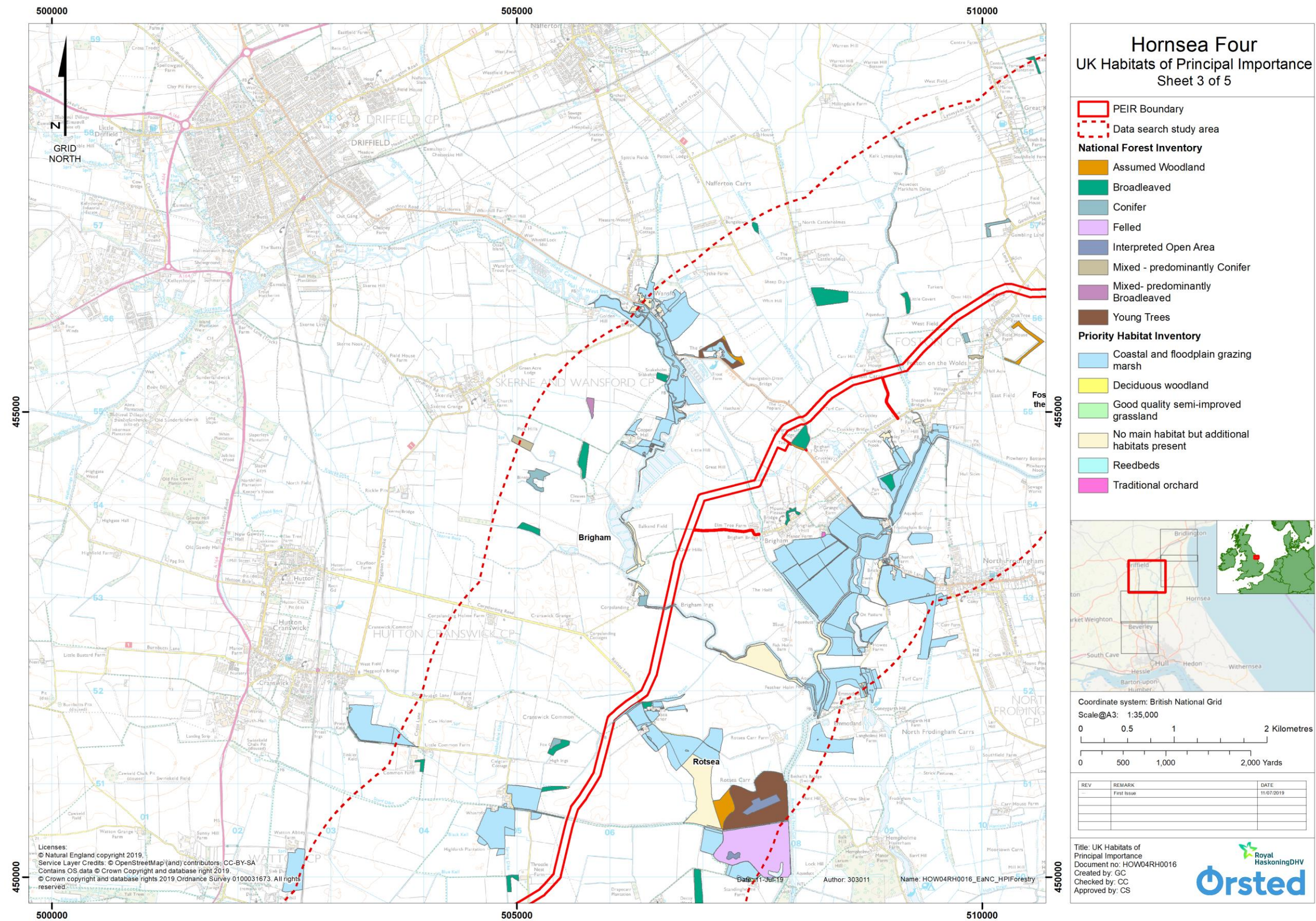


Figure 8: UK Habitats of Principal Importance (UKHPI) and Forestry – ECC (1) (Not to Scale).

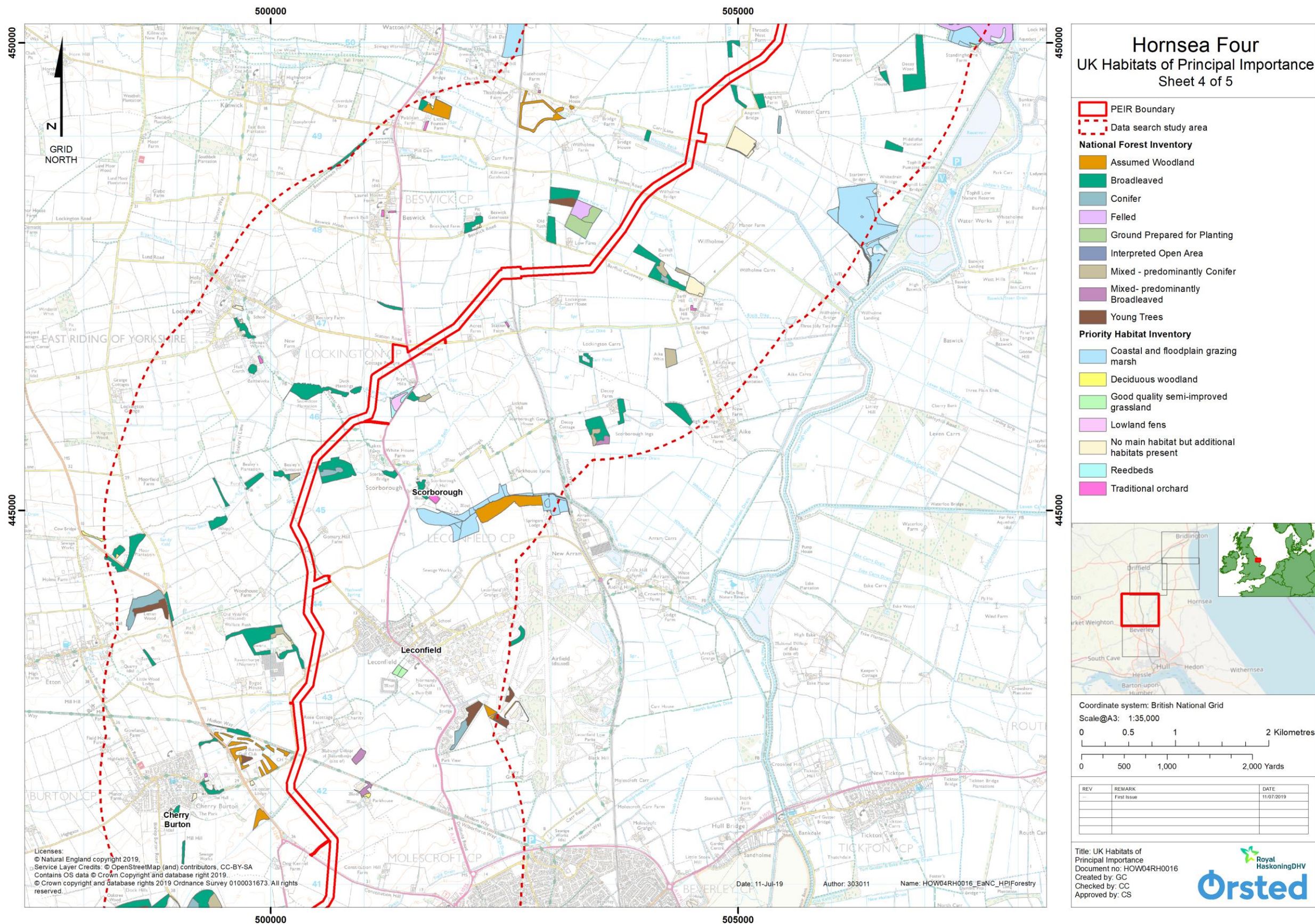


Figure 9: UK Habitats of Principal Importance (UKHPI) and Forestry – ECC (2) (Not to Scale).

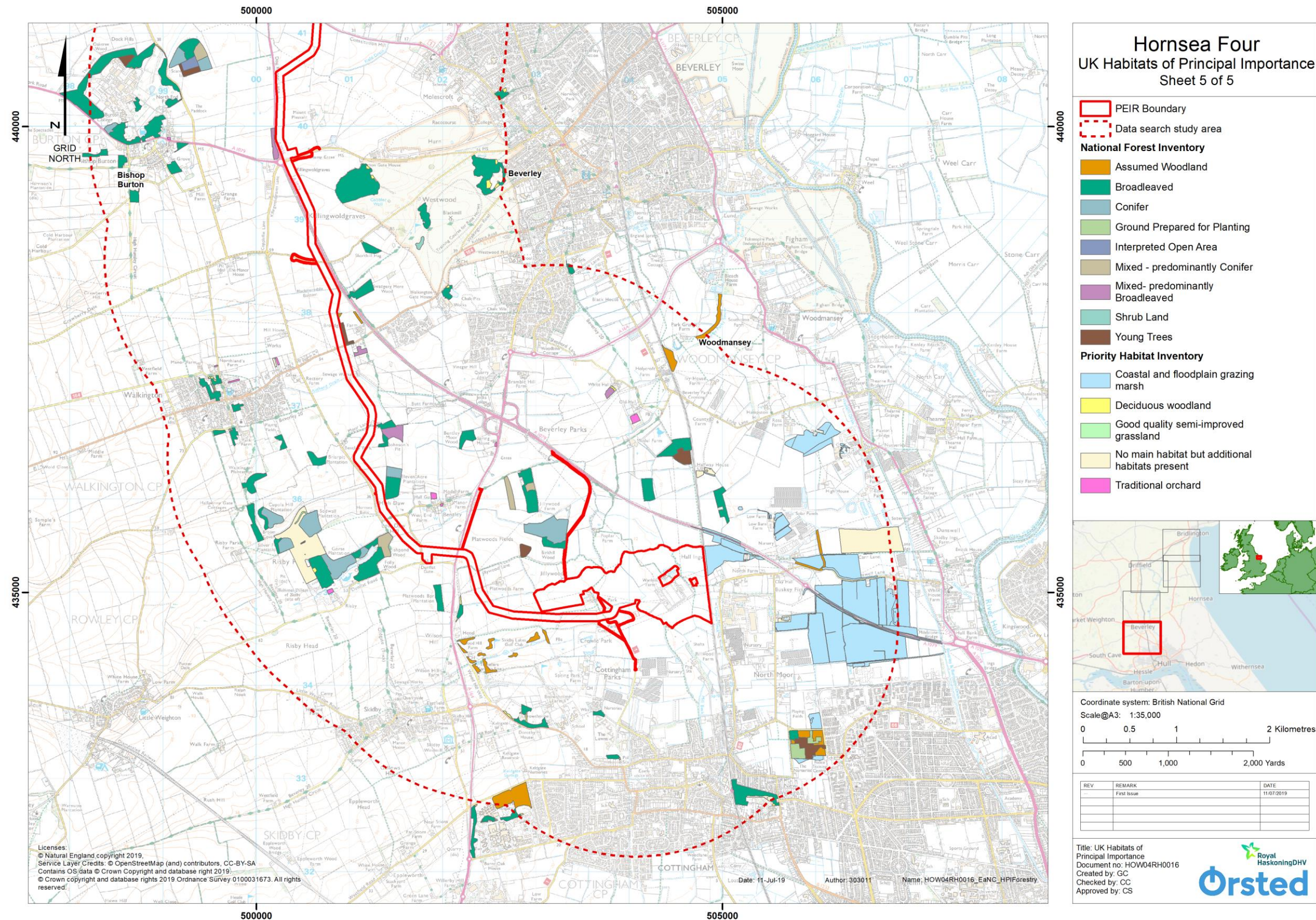


Figure 10: UK Habitats of Principal Importance (UKHPI) and Forestry - OnSS (Not to Scale).

4.1.3 Protected species

4.1.3.1 This section summarises the records of all legally protected species which have been obtained during the desk-based assessment and are within the Hornsea Four EP1HS study area.

Birds

4.1.3.2 The NEYEDC records returned data of a total of 223 bird species within a 5 km buffer of the Hornsea Four EP1HS study area. Of those records, a total of 11 were recorded within the Hornsea Four PEIR boundary. Of these 11 records, none are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA, 1981), four are listed on the Birds of Conservation Concern (BoCC) (Eaton et al. 2015) 'red list' of threatened species and one is listed on the BoCC 'amber list' of threatened species.

4.1.3.3 The following bird species have been recorded in the NEYEDC data as being present within the Hornsea Four PEIR boundary:

- yellowhammer *Emberiza citrinella* (BoCC 'red list');
- sparrowhawk *Accipiter nisus*;
- kestrel *Falco tinnunculus* (BoCC 'amber list');
- skylark *Alauda arvensis* (BoCC 'red list');
- swallow *Hirundo rustica*;
- lapwing *Vanellus vanellus* (BoCC 'red list');
- blackbird *Turdus merula*;
- swallow *Hirundo rustica*;
- herring gull *Larus argentatus* (BoCC 'red list');
- carrion crow *Corvus corone*; and
- willow warbler *Phylloscopus trochilus*.

Badger

4.1.3.4 Due to the persecution of badgers, the information pertaining to this species is provided separately to this report, in a Confidential report, available upon request, [Volume 6, Annex 3.10: Badger Survey Report](#).

Bats

4.1.3.5 A total of 104 records of bats within the 5 km Hornsea Four EP1HS study area was returned from NEYEDC. Of these records, one result was recorded within the Hornsea Four PEIR boundary. Records of bats returned from NEYEDC included a total of five species of bats including daubenton's *Myotis daubentonii*, whiskered bat *Myotis mystacinus*, natterer's bat *Myotis nattereri*, noctule *Nyctalus noctule*, with the common pipistrelle *Pipistrellus pipistrellus*, being the most frequently encountered.

Water vole

4.1.3.6 A total of 126 records of water voles within the 2 km Hornsea Four EP1HS study area were returned from NEYEDC. Of those records, a total of 17 results were recorded within the Hornsea Four PEIR boundary.

Otter

- 4.1.3.7 A total of 44 records of otters within the 2 km Hornsea Four EP1HS study area were returned from NEYEDC. Of those records, none were situated within the Hornsea Four PEIR boundary.

Great crested newt

- 4.1.3.8 A total of 18 records of great crested newt within the 2 km Hornsea Four EP1HS study area were returned from NEYEDC. Of those records, none were situated within the Hornsea Four PEIR boundary.

Reptiles

- 4.1.3.9 Only one record of reptiles within the 2 km Hornsea Four EP1HS study area was returned from NEYEDC, and this record of a grass snake *Natrix natrix*, was outside of the Hornsea Four PEIR boundary.

Dormice

- 4.1.3.10 There are no records of dormice within either the 2 km Hornsea Four EP1HS study area or the Hornsea Four PEIR boundary.

Invertebrates

- 4.1.3.11 A total of 397 records of invertebrates within the 2 km Hornsea Four EP1HS study area were returned from NEYEDC. Of those records, 18 were recorded within the Hornsea Four PEIR boundary. The most recorded group consisted of moths.

Invasive non-native species

- 4.1.3.12 A total of 21 records of invasive species within the 2 km Hornsea Four EP1HS study area were returned from NEYEDC. Of those records, one (Canadian waterweed *Elodea canadensis*) was situated within the Hornsea Four PEIR boundary.

4.2 Field Survey Results

4.2.1.1 **Table 5** shows the key habitats that were recorded within the Hornsea Four EP1HS study area (as shown on **Figure 11 – Figure 35**) during the updated EP1HS.

Table 5: JNCC Phase 1 habitat areas recorded during the updated EP1HS.

JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Area (m ²)
A1.1.1	Broadleaved woodland – semi-natural	20,152.96
A1.1.2	Broadleaved woodland – plantation	7,912.94
A1.3.2	Mixed woodland – plantation	13,274.03
A2.1	Scrub – dense/continuous	49,615.76
B4	Improved grassland	56,037.46
B6	Poor semi-improved grassland	116,224.16
J1.1	Cultivated/disturbed land – arable	3,731,314.90
JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Length (m)
J2.1.1	Intact hedge – species rich	76.89
J2.1.2	Intact hedge – species poor	4,378
J2.2.2	Defunct hedge – species poor	533.82
J2.3.1	Hedge with trees – species rich	277.60
J2.3.2	Hedge with trees – species poor	1,580.15
J2.6	Dry ditch	721.09
G1	Standing water	12,429.67
G2	Running water	4,230.16

4.2.1.2 The following sections relating to the habitats recorded during the updated EP1HS should be read in conjunction with **Table 5**:

Arable land

4.2.1.3 The largest habitat by area within the Hornsea Four EP1HS study area is arable land (JNCC Phase 1 Habitat code J1.1). At the time of the survey these ranged from fields that were in crop (such as *Brassica spp.*), were ploughed, and those that continued to have winter cover.

Boundary features

4.2.1.4 Field boundaries consisted primarily of hedgerows (57 of a total of 60 boundary features recorded), of which the majority (34) are species-poor intact hedgerows (J2.1.2). However, additionally 12 species-poor hedgerows with trees (J2.3.2), five species-poor defunct hedgerows (J2.2.2), five species-rich hedgerows with trees (J2.3.1), as well as one species-rich intact hedgerows (J2.1.1.) (1) were also recorded. The remaining fields were bordered by wet ditches/rivers (G1 and G2) and dry ditches (J2.6).

4.2.1.5 Species rich hedgerows (J2.1.1, J2.2.1 and J2.3.1) typically consisted of shrub and tree species including hawthorn *Crataegus monogyna*, oak *Quercus robur*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica*, goat willow *Salix caprea*, hazel *Corylus avellana*, field maple *Acer campestre*, ivy *Hedera helix*, and holly *Ilex aquifolium*. Ground flora typically consisting of common nettle *Urtica dioica*, bramble *Rubus fruticosus*, cow parsley *Anthriscus sylvestris*, red-dead nettle *Lamium purpureum*, cleavers *Galium aparine*, common hogweed *Heracleum sphondylium*, and broad leaf dock *Rumex obtusifolius*.

4.2.1.6 Species poor hedgerows (J2.1.2, J2.2.2 and J2.3.2) were characterised by fewer than five woody species within a 30 m stretch and were typically dominated by hawthorn.

Semi-natural woodland

4.2.1.7 Areas of broadleaved semi-natural woodland (A1.1.1) were recorded in nine locations within the Hornsea Four EP1HS study area . These ranged from large areas of woodland through to small isolated pockets at field margins and along roads.

4.2.1.8 Broadleaved woodland typically consisted a mix of ash, sycamore and oak with typical understorey and ground flora species including thistle *Cirsium vulgare*, hawthorn, bramble and common nettle. Coniferous woodland species typically included Scots pine *Pinus sylvestris*.

Plantation woodland

4.2.1.9 Plantation woodland (A1.1.2 and A1.3.2) was recorded in four locations within the Hornsea Four EP1HS study area and typically included sweet chestnut *Castanea sativa*, oak, Scots pine and hazel. Understorey and ground flora species consisted mainly of bramble and common nettle.

Scrub

4.2.1.10 A total of 14 areas of scrub (A2.1) were recorded within the Hornsea Four EP1HS study area. These areas represented a range of habitat sub-types including transitional habitat between woodland and grassland, boundary features, waste ground, field margins and watercourse margins. Species present included bramble, gorse *Ulex spp.*, common nettle, common hogweed, cow parsley and cleavers.

Improved grassland

4.2.1.11 Improved grassland (B4) was recorded in four locations within the Hornsea Four EP1HS study area. This habitat was formed of short sward grasses with areas of scrub vegetation typically being used for either grazing or paddocks.

Poor semi-improved grassland

4.2.1.12 Poor semi-improved grassland (B6) was recorded in eight locations within the Hornsea Four EP1HS study area. These areas were comprised of coarse ruderal grass and herb species such as cock's foot *Dactylis glomerata*, broadleaf dock and white clover *Trifolium repens*.

Standing and running water

4.2.1.13 A total of 35 water bodies (i.e. ditches and rivers and excludes ponds) were recorded during the updated EP1HS, these included both field margin ditches and running water.

4.2.2 Protected species

Birds

4.2.2.1 BoCC4 Red List (Eaton et al. 2015) species skylark was observed in song flight over an arable field in one location during the field survey (see [TN44, Appendix A](#) – Target Notes).

4.2.2.2 All hedgerows, isolated trees, grassland, scrub and woodland habitats were identified as potentially providing suitable nesting habitat for protected, notable and common species of birds. Relic bird nests were recorded within these habitats during the field survey.

4.2.2.3 Survey results regarding bird species will be reported separately in [Volume 6, Annex 3.2: Onshore Ornithology - Wintering and Migratory Birds Survey Report](#) and [Volume 6, Annex 6.3: Breeding Bird Survey Report](#). The breeding bird baseline data was not available at the time of preparing the Hornsea Four PEIR, and therefore the latter technical report will be provided with the ES, to inform the DCO application.

Badger

4.2.2.4 Field survey results in relation to badgers are provided separately in [Volume 6, Annex 3.10: Badger Survey Report](#).

Bats

4.2.2.5 All features (i.e. trees, buildings, structures) noted during the 2019 field survey were assessed from the ground level and using binoculars for their suitability to support roosting bats. In total, 82 features were assessed for their suitability to support roosting bats. Of these, 23 were assessed as providing negligible suitability for roosting bats, 28 were found to provide low suitability, 28 as providing moderate suitability and three as having high suitability. [Table 6](#) below shows details of each feature and their assessments, and should be read in conjunction with [Figure 11 - Figure 35](#). Further information is provided and can be found using the TN numbers in [Table 6](#) and [Appendix A](#) – Target Notes.

4.2.2.6 The rows in [Table 6](#) that are greyed out correspond to features that were recorded during the updated EP1HS, but following further refinement of the Hornsea Four PEIR boundary are now located outside of the Hornsea Four EP1HS study area but have been included for completeness. These features have not been included for future surveys and/or assessment.

Table 6: Potential bat roosting features recorded.

Target Note (TN)	Description	Bat Roosting Potential
TN6	Horse chestnut with small holes visible.	low
TN7	Horse chestnut with small holes visible.	low
TN9	Large ash with multiple cracks, holes and broken limbs.	high
TN11	Large sycamore with broken limb.	moderate

Target Note (TN)	Description	Bat Roosting Potential
TN12	Large, ivy clad sycamore with limited potential roost features (PRFs) visible from ground. Opportunistic roosting potential only.	low
TN15	Large sycamore with broken limbs and visible holes.	moderate
TN16	Large sycamore with broken limbs.	moderate
TN17	Large ash tree with holes and broken limbs.	moderate
TN18	Horse chestnut situated in middle of improved grassland, used for grazing, no visible cracks or holes disconnected from wider habitat.	negligible
TN20	Large horse chestnut tree with cracks and holes.	moderate
TN21	Dead, hollowed ash tree.	negligible
TN25	Large ash tree with fallen limbs and cracks present	moderate
TN27	Large sycamore with broken limbs and cracks.	moderate
TN28	Large ash situated in hedge, with several visible holes and broken limbs.	moderate
TN30	Large ash situated in hedge with no visible holes.	negligible
TN35	Three large trees (sycamore and ash) with multiple cracks, holes and broken limbs. Bird scarer present immediately adjacent, depending on length of presence may deter roosting bats.	low
TN51	Large, mature sycamore with holes visible.	moderate
TN55	Sycamore on edge of access road, one small hole visible from ground.	low
TN56	Large mature ash with limited visible PRFs.	low
TN74	Shed made from prefabricated steel, lots of gaps but potentially too hot/cold for roosting bats.	negligible
TN81	Large mature ash tree adjacent to ditch with some small visible holes, however disconnected from wider habitat.	negligible
TN99	Large, mature oak with limited visible PRFs.	low
TN109	Group of young trees within survey buffer are mostly young with no visible PRFs.	low
TN110	Mature oak with visible holes, situated adjacent to a stream, connected to woodland and scrub habitat.	moderate
TN115	Oak with split and cracked limbs, adjacent to stream and small woodland.	moderate
TN116	Semi-natural broadleaved woodland (JNCC: A1.1.1) Small area of mostly young and semi mature oak and sycamore.	low
TN125	Semi-natural broadleaved woodland (JNCC: A1.1.1) Small patch of woodland consisting of hawthorn and sycamore, semi mature trees.	negligible
TN131	Species poor hedge with trees (JNCC: J2.3.2) consisting of alder, blackthorn and willow. Trees all semi mature, some sections of hedge newly planted.	negligible
TN132	Semi-mature oak disconnected from wider habitat with no visible PRFs.	negligible
TN135	Bridge with some ivy cover, no visible cracks or holes in the brickwork.	negligible
TN138	Mature, ivy clad sycamore with no visible PRFs situated adjacent to road.	low
TN139	Semi-natural broadleaved woodland (JNCC: A1.1.1) Scattered trees and scrub vegetation lining each side of footpath; hawthorn, sycamore, bramble and dog rose.	negligible

Target Note (TN)	Description	Bat Roosting Potential
TN142	Small copse of trees, some ivy clad, adjacent to road and arable field, limited PRFs visible from ground.	low
TN146	Small group of young and semi mature trees, no visible PRFs, disconnected from wider habitat.	negligible
TN157	Mature oak adjacent to busy road, limited visible PRFs.	low
TN158	Species poor hedge with trees (JNCC: J2.3.2) consisting of young trees lining public footpath and road.	negligible
TN159	Mature oak adjacent to busy road with limited PRFs.	low
TN160	Two large mature oak with limited visible PRFs.	low
TN161	Large mature oak, limited PRFs visible.	low
TN163	Large mature ivy clad oak with multiple cracks and holes, adjacent to busy road.	low
TN184	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of mostly young oak and hazel, fenced.	negligible
TN189	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of mostly semi mature and young trees.	negligible
TN195	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak, bramble, thistle, broad leaved dock, common hogweed, nettle and ivy. Fenced.	negligible
TN200	Large mature oak with no visible cracks or holes	negligible
TN203	Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting mainly of oak with scattered pine, bramble and nettle.	negligible
TN207	Mature oak in hedge with splits and cracks.	moderate
TN208	Mature oak in hedge with visible cracks and holes.	moderate
TN209	Mature oak with split limbs, in hedge connected to woodland.	moderate
TN210	Dead ash tree in hedge, limited PRFs visible from ground.	low
TN215	Two mature ivy clad oak on edge of woodland.	moderate
TN216	Mature oak with visible cracks and holes, within garden of house with no access.	moderate
TN217	Mature oak with visible cracks and holes and broken limbs.	moderate
TN224	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of sycamore with some alder, hazel, oak, ivy, field maple, hawthorn, willow, bramble and nettle.	negligible
TN226	Coniferous plantation woodland (JNCC: A1.2.2) consisting of pines with approximately 2-3 ash trees.	low
TN227	Large mature oak on edge of woodland, relic ivy branches and lots of visible cracks, holes and dead/broken limbs.	high
TN229	Large mature ivy clad oak within hedge, close to woodland.	high
TN230	Group of 4 mature, possibly veteran, oak trees within semi improved grassland. High trunk density with cracks and holes.	high
TN233	Three semi mature oak adjacent to hedge.	negligible
TN241	Oak tree with some cracks and holes however isolated and exposed.	low
TN243	Mixed plantation woodland (JNCC: A1.3.2) consisting of sycamore, sweet chestnut, oak and pine. Limited undergrowth, leaf litter, bramble and pheasant feeders present.	negligible
TN244	Mature oak, ivy clad, limited PRFs visible.	low
TN248	Two dead ash trees with large holes and crevices visible.	moderate

Target Note (TN)	Description	Bat Roosting Potential
TN249	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small woodland, fenced, sections within survey buffer are open transitional with newly planted shrubs and one mature oak.	negligible
TN251	Three mature ivy clad oak at edges of layby and major road.	low
TN256	Large mature oak in middle of arable field. Disconnected from wider habitat and close to major road.	low
TN262	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small area of woodland, mostly young trees.	negligible
TN265	Mature oak with some visible holes that look relatively shallow from the ground.	low
TN266	Dead oak tree adjacent to the Public Right of Way (PRoW), some cracks, holes and dead limbs, cavities look too shallow from ground level.	low
TN270	Mature oak with dead limbs and plenty of cracks and holes visible.	moderate
TN273	Scrub (JNCC: A2.1) - small patch of scrub with scattered semi-mature trees adjacent to arable fields and PRoW.	negligible
TN274	Group of mature and semi mature trees within scrub, one mature oak with moderate bat roost potential.	moderate
TN278	Mature oak within scrub adjacent to stream, ivy clad with broken branches.	moderate
TN280	Large mature oak with visible cracks and holes.	moderate
TN283	Large mature oak with some visible cracks and holes.	moderate
TN284	Large oak with lost limbs and visible cracks.	moderate
TN287	Oak with peeling bark, limited spaces for bat access.	low
TN291	Large mature oak with visible cracks and holes set within hedge.	moderate
TN294	Semi-natural broadleaved woodland (JNCC: A1.1.1) - mostly immature trees, sycamore, hawthorn, ash, pines, bramble, hogweed, hazel, red dead nettle.	negligible
TN297	Mature oak with visible splits and cracks.	moderate
TN300	Mature oak with visible cracks and splits.	moderate
TN301	Dead oak with split limbs and visible cracks.	moderate
TN306	Mature oak with splits and cracks.	moderate
TN308	Barn with collapsed roof, tiled with some cracks and crevices for access.	moderate
TN310	Mature, partly ivy clad, oak with splits and cracks.	moderate
TN314	Large mature oak, partially ivy clad, some cracks and holes visible.	moderate
TN315	Mature, ivy clad oak in hedge, limited view from ground however some cracks present.	moderate
TN321	Dead oak with multiple cracks, holes and dead branches.	high
TN326	Barns adjacent to house, some with tiled roofs with potentially accessible areas.	moderate
TN327	Two ivy clad field maple with limited visible PRFs. Opportunistic roosting potential only.	low
TN328	Willow tree with no visible PRFs.	negligible
TN330	Mature, ivy clad sycamore tree with limited visible PRFs. Opportunistic potential only.	low
TN333	Three mature oak with limited visible PRFs.	low

Target Note (TN)	Description	Bat Roosting Potential
TN340	Mature oak with no visible cracks and holes.	low
TN341	Several ivy clad oak and ash (approximately 10 trees) within woodland.	moderate
TN342	Three mature trees (oak and ash) in hedgerow, ivy clad, some PRFs visible.	moderate
TN343	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, crab apple and bramble, large gaps.	negligible
TN344	Group of six mature oak trees, smooth bark, limited PRFs.	low
TN350	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, ash, hawthorn, blackthorn, bramble. Some large gaps.	negligible
TN354	Two oaks with limited visible PRFs.	low
TN357	Two mature oaks which are isolated from wider habitat as situated in middle of field.	low
TN361	Oak with large holes due to broken limbs, holes look to have smaller cavities further in.	moderate
TN363	Mature oak with no visible PRFs.	low
TN364	Mature oak with no visible PRFs.	low
TN367	Mature, ivy clad oak with limited visible PRFs. However dense ivy cover present, so difficult to view from the ground.	moderate

4.2.2.7 In addition to trees and structures (e.g. bridges and farm buildings), all linear features (e.g. watercourses, hedgerows) were assessed in terms of their potential suitability for supporting commuting or foraging bats, in accordance with BCT guidelines (BCT, 2016).

4.2.2.8 In total, 97 features were assessed for their suitability. Of these, six were assessed as providing negligible suitability for supporting commuting or foraging bats, 45 as providing low suitability, 45 as providing moderate suitability and one as having high suitability. [Table 7](#) shows details and assessment of each feature. The locations are denoted by the use of TNs, the locations of which are shown on [Figure 11 - Figure 35](#). Further information on the features can be found using the TN number in the field survey target notes in [Appendix A](#).

4.2.2.9 The rows in [Table 7](#) that are greyed out correspond to features that were recorded during the updated EP1HS, but following further refinement of the Hornsea Four PEIR boundary are now located outside of the Hornsea Four EP1HS study area but have been included for completeness. These features have not been included for future surveys and/or assessment.

Table 7: Potential features suitable for commuting and/or foraging bats.

Target Note (TN)	Description	Potential for commuting and/or foraging
TN1	Wide dyke/beck with vertical grassy banks, recently trimmed. Common reed present, no in channel vegetation. Static flow, approximately 8-10m wide, silted with poor water quality.	moderate
TN4	Tree lined road.	moderate
TN5	Species poor hedge with trees (JNCC J2.3.2) consisting of hawthorn, bramble, sycamore and ash.	moderate
TN10	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, bramble, ivy, nettle, thistle and cleavers. Dry ditch present.	moderate
TN19	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble. Hedge recently cut back.	low
TN24	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, fenced, thick dense scrub vegetation in sections.	moderate
TN26	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, beech, bramble, common hogweed and nettle.	moderate
TN32	Species rich hedge with trees (JNCC: J2.3.1) consisting of ash, sycamore, hawthorn, ivy, bramble and a dry ditch.	moderate
TN34	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, recently trimmed, fenced.	low
TN37	Species poor intact hedge (JNCC: J2.1.2) consisting of blackthorn, hawthorn, ash, sycamore. Recently trimmed.	low
TN38	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.	low
TN47	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, blackthorn, holly. Mostly newly planted approximately 1-2 seasons growth.	moderate
TN49	Species poor defunct hedgerow (JNCC: J2.2.2) consisting of hawthorn with large gaps.	low
TN53	Wide ditch, slow flowing with steep grassy banks in sections, silty, common reed present, defunct hawthorn hedge on one bank. Forms good connecting habitat for commuting/foraging bats in surrounding area.	moderate
TN58	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, ash and sycamore. Hedge looks to be part removed/cut back.	low
TN62	Wide river with sloping grassy banks, common reed, glyceria, occasional hawthorn. Approximately 15m wide, slow flowing.	moderate
TN65	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, recently trimmed with large gaps.	low
TN68	Species poor defunct hedge (JNCC: J2.2.2) boundary formed of individual hawthorn.	negligible
TN73	Wide, slow flowing chalk stream/river, approximately 20m wide with reed beds on both banks. Scattered hawthorn present and grassy embankments. Anecdotal evidence of otter use	high
TN84	Ditch with steep grassy banks, approximately 3-5m wide and 0.5m deep, sandy/silty bed, slow flow, no in channel vegetation.	moderate
TN85	Species rich hedge with trees (JNCC: J2.3.1) Mainly consisting of young goat willow, ash, bramble, hogweed, trees immature, some newly planted.	low

Target Note (TN)	Description	Potential for commuting and/or foraging
TN89	Species rich hedge with trees (JNCC: J2.3.1) boundary formed of individual immature goat willow and ash with broad leaf dock, thistle and common hogweed.	low
TN91	Wide dyke, approximately 5-10m wide with steep grassy banks. Slow flowing approximately 0.5-1m deep. Grass well established, some evidence of localised erosion. Bed consists of sand and silt, no in channel vegetation, occasional hawthorn along bank, common hogweed and cow parsley also present.	moderate
TN93	Species poor defunct hedge (JNCC: J2.2.2) solely consisting of hawthorn.	negligible
TN94	Species poor defunct hedge (JNCC: J2.2.2) solely consisting of hawthorn.	negligible
TN96	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, one young ash with negligible bat roost suitability, large gaps with occasional hawthorn present.	low
TN97	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn.	low
TN102	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn with one mature oak adjacent.	low
TN103	Species poor intact hedge (JCC: J2.1.2) consisting of hawthorn, bramble and blackthorn.	moderate
TN114	Stream, approximately 3m wide, slow flowing, shallow banks in places with open tree root systems, bed consisting of sandy gravel, surrounding habitat dense scrub with scattered semi mature trees.	moderate
TN116	Semi-natural broadleaved woodland (JNCC: A1.1.1) Small area of mostly young and semi mature oak and sycamore.	moderate
TN118	Species poor intact hedge (JNCC: J2.1.2) Consisting of hawthorn and ivy, recently trimmed.	low
TN123	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, dog rose, red dead nettle, bramble and common hogweed. Recently trimmed.	low
TN126	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, some small gaps present however hedge largely intact.	low
TN129	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, elderberry, hawthorn and bramble. Recently trimmed.	low
TN133	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy. Recently trimmed.	low
TN136	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Hedge recently trimmed.	low
TN139	Semi-natural broadleaved woodland (JNCC: A1.1.1) Scattered trees and scrub vegetation lining each side of footpath; hawthorn, sycamore, bramble and dog rose.	moderate
TN145	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy. Recently trimmed.	low
TN147	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN149	Row of young cherry trees lining road.	low
TN150	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.	low
TN152	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.	low
TN153	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn. Recently trimmed.	low

Target Note (TN)	Description	Potential for commuting and/or foraging
TN156	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.	low
TN158	Species poor hedge with trees (JNCC: J2.3.2) consisting of young trees lining public footpath and road.	negligible
TN162	Species poor intact hedge (JNCC: J2.1.2) consisting of sections of newly planted hawthorn, blackthorn and bird cherry.	low
TN164	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced, recently trimmed.	low
TN168	Species poor defunct hedge (JNCC: J2.2.2) consisting of isolated hawthorn with large gaps, woody debris, common hogweed and nettle.	negligible
TN170	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, connected to small woodland.	moderate
TN172	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, adjacent to tree lined, steep scrub embankment.	low
TN174	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced, recently trimmed.	low
TN176	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN177	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN180	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN182	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN185	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	low
TN187	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, blackthorn and willow. Ivy, nettle and bramble also present, situated adjacent to plantation woodland. Fenced.	moderate
TN190	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy, recently trimmed.	low
TN191	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, bramble and dog rose, fenced.	low
TN192	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak and ivy, fenced.	low
TN195	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak, bramble, thistle, broad leaved dock, common hogweed, nettle and ivy. Fenced.	moderate
TN197	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, some sections newly planted, recently trimmed.	moderate
TN201	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, hazel, bramble, nettle and broadleaved dock.	moderate
TN202	Species poor intact hedge (JNCC: J2.1.2) consisting of mainly hawthorn with bramble and nettle, some sections newly planted.	moderate
TN206	Species rich hedge with trees (JNCC: J2.3.1) consisting of hawthorn, willow, hazel, ash and oak. Connected to woodland.	moderate
TN213	Species rich hedge with trees (JNCC: J2.3.1) consisting of hazel, bramble, blackthorn, ivy and elm.	moderate

Target Note (TN)	Description	Potential for commuting and/or foraging
TN214	Species poor intact hedge (JNCC: J2.1.2) consisting of mainly hawthorn with some hazel, recently trimmed, connected to woodland.	moderate
TN218	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, sycamore and ash, connecting two areas of woodland and grassland.	moderate
TN221	Species rich hedge with trees (JNCC: J2.3.1) consisting of hazel, hawthorn, willow, ivy, bramble and field maple. Rubbish present in sections with road layby.	moderate
TN224	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of sycamore with some alder, hazel, oak, ivy, field maple, hawthorn, willow, bramble and nettle.	moderate
TN226	Coniferous plantation woodland (JNCC: A1.2.2) consisting of pines with approximately 2-3 ash trees.	moderate
TN234	Species rich hedge with trees (JNCC: J2.3.1) consisting of bramble, hawthorn, willow, elderberry, alder, ivy and blackthorn.	moderate
TN236	Species poor intact hedge (JNCC: J2.1.2) consisting of mostly hawthorn, large sections newly planted (approximately 1-2 seasons growth).	low
TN237	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy, recently trimmed.	low
TN240	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, adjacent to busy road.	low
TN243	Mixed plantation woodland (JNCC: A1.3.2) consisting of sycamore, sweet chestnut, oak and pine. Limited undergrowth, leaf litter, bramble and pheasant feeders present.	moderate
TN247	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and 1 mature oak. Hedge recently trimmed.	low
TN260	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, ash, ivy, bramble, large gaps in places.	low
TN261	Species rich intact hedge (JNCC: J2.1.1) consisting of hawthorn, bramble, hazel, blackthorn, holly and gorse.	low
TN262	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small area of woodland, mostly young trees.	moderate
TN263	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, situated adjacent to major road.	negligible
TN267	Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of hawthorn, field maple, oak, ash, bramble and ivy. Public footpath runs through the middle.	moderate
TN271	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, ivy and bramble.	moderate
TN273	Scrub (JNCC: A2.1) - small patch of scrub with scattered semi-mature trees adjacent to arable fields and PRoW.	moderate
TN281	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	moderate
TN282	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn and oak. Fenced in places with some gaps and sections of just bramble.	moderate
TN285	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, recently trimmed.	moderate
TN289	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, ash, oak and bramble.	moderate
TN295	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn and oak.	moderate

Target Note (TN)	Description	Potential for commuting and/or foraging
TN296	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	moderate
TN298	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	moderate
TN303	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak, bramble and willow.	moderate
TN307	Species poor hedge with trees (JNCC: J2.3.2) consisting of elderberry, blackthorn, ivy, oak, bramble, hogweed, nettle and cow parsley.	moderate
TN309	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy.	moderate
TN318	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn with some ivy, recently trimmed.	moderate
TN319	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, nettle, bramble, common hogweed and thistle. Fenced, rabbit holes present.	moderate
TN320	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	moderate
TN323	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced.	moderate
TN329	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.	moderate
TN335	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, some small gaps present.	low
TN337	Species poor hedge with trees (JNCC: J2.3.2) consisting of blackthorn, hawthorn, holly and oak, defunct in places.	low
TN338	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced.	low
TN343	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, crab apple and bramble, large gaps.	moderate
TN350	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, ash, hawthorn, blackthorn, bramble. Some large gaps.	moderate
TN351	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, holly, ivy, elderberry and bramble.	moderate
TN360	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak and bramble with some small gaps.	moderate
TN369	Species rich hedge with trees (JNCC: J2.3.1) consisting of hawthorn, ash, ivy, willow, hazel, bramble, nettle and holly.	moderate

Water vole and otter

4.2.2.10 A total of 37 water bodies (ditches, and not ponds) were recorded during the updated EP1HS. These 37 water bodies will be surveyed for the presence/absence of water voles during the appropriate season during 2019 (which is typically between March and September).

4.2.2.11 Of the 37 ditches recorded, 11 were assessed as being suitable to support otters, therefore all 11 ditches will be surveyed for otters concurrently with the water vole surveys.

4.2.2.12 The remaining 26 water bodies were assessed as sub-optimal habitat for otters, primarily as the water bodies were field drains of insufficient size and depth to support otters.

Additionally, these water bodies were not functionally connected to the wider river network.

4.2.2.13 These 37 water bodies are shown on [Figure 11 - Figure 35](#), which should be read in conjunction with the TN records in [Appendix A – Target Notes](#).

Great crested newt

4.2.2.14 A total of 85 water bodies (ponds) have been identified within the 250 m Hornsea Four EP1HS study area, and all these ponds will be subject to a Habitat Suitability Index (HSI) assessment and subsequent eDNA survey (subject to agreed survey access) within the appropriate survey window in 2019 (between mid-April to the end of June 2019). The location of these ponds is shown on [Figure 11 - Figure 35](#).

Reptiles

4.2.2.15 A total of 32 areas of suitable reptile habitat were recorded. These areas comprise habitat mosaics and potential refugia locations which could potentially support common reptile species. [Table 8](#) contains the details of these areas with further information provided in the table of Target Notes in [Appendix A – Target Notes](#), and should be read in conjunction with [Figure 11 - Figure 35](#).

4.2.2.16 The rows in [Table 8](#) that are greyed out correspond to features that were recorded during the updated EP1HS, but following further refinement of the Hornsea Four PEIR boundary, these are now located outside of the Hornsea Four EP1HS study area but have been included for completeness. These features have not been included for future surveys and/or assessment.

Table 8: Areas of suitable reptile habitat or potential refugia recorded during the updated EP1HS.

Target Note (TN)	Description
TN8	Small patch of semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of horse chestnut, sycamore, hawthorn, bramble, ivy. Fallen branches and dead roots present.
TN13	Poor semi-improved grassland (JNCC: B6) Habitat consisting of ridge and furrow features throughout, large mature trees, fallen branches and dense scrub sections with gorse and bramble. Optimal reptile mosaic habitat with features for basking, foraging and hibernating.
TN22	Poor semi-improved grassland (JNCC: B6).
TN23	Fallen tree offering potential reptile hibernation options.
TN24	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, fenced, thick dense scrub vegetation in sections.
TN29	Scrub (JNCC: A2.1) consisting of gorse, bramble, nettle and hawthorn.
TN39	Improved grassland (JNCC: B4) potentially used for grazing.
TN48	Improved grassland (JNCC: B4) Horses grazing, electric fencing present.
TN50	Scrub (JNCC: A2.1) consisting of scattered trees, mostly semi mature, hawthorn and sycamore.
TN59	Arable (JNCC: J1.1) – part cropped, part winter cover with wide grassy margins.
TN64	Dry ditch with scattered hawthorn present.

Target Note (TN)	Description
TN71	Poor semi-improved grassland (JNCC: B6) grassland strip between river and arable fields, longer sward on river embankments with scrub vegetation present such as bramble, nettle and broad-leaved dock.
TN75	Poor semi-improved grassland (JNCC: B6) mostly short sward, sections of scrub with teasel, thistle, hawthorn and bramble
TN77	Scrub (JNCC: A2.1) Small area of scrub with hawthorn, bramble and common hogweed.
TN79	Scrub (JNCC: A2.1) Small area of scrub with hawthorn, bramble and common hogweed.
TN98	Poor semi-improved grassland (JNCC: B6) consisting of short sward grasses potentially used for grazing. White and red clover, thistle and dandelion also present.
TN100	Scrub (JNCC: A2.1) small area of scrub, grasses and bramble adjacent to turbine and dyke.
TN112	Scrub (JNCC: A2.1) consisting of dense bramble and hawthorn along stream banks with scattered trees.
TN113	Poor semi-improved grassland (JNCC: B6) Small area of grassland adjacent to woodland and arable field. Relatively short sward, broad leaved dock and nettle present and small wet patches with juncus spp.
TN141	Scrub (JNCC: A2.1) Patch of scrub adjacent to footpath and arable field, dense bramble throughout.
TN166	Large pile of vegetated woody debris, within hedge with wide grassy margins. Reptile hibernation feature connected to commuting/foraging habitat.
TN167	Scrub (JNCC: A2.1) - dense scrub with hawthorn, bramble, nettle and common hogweed.
TN169	Large pile of vegetated woody debris, within hedge with wide grassy margins. Reptile hibernation feature connected to foraging habitat.
TN186	Poor semi-improved grassland (JNCC: B6) consisting of short sward grasses and limited herb species, potentially used for grazing, fenced.
TN225	Poor semi-improved grassland (JNCC: B6) consisting of relatively short sward, limited herbs present.
TN231	Area of hardstanding and gravel with soil heaps and rubbish, offering potential reptile hibernacula.
TN250	Poor semi-improved grassland (JNCC: B6) - small area of grassland within arable field, with section of tall ruderal vegetation adjacent to PRow, broadleaved dock dominant.
TN257	Semi open area of woodland with potential hibernacula, woodland edges with mosaic habitat for reptiles.
TN273	Scrub (JNCC: A2.1) - small patch of scrub with scattered semi-mature trees adjacent to arable fields and PRow.
TN277	Scrub (JNCC: A2.1) - area of scrub between arable fields, mainly bramble, common hogweed, nettle, cleavers and several ivy clad trees.
TN305	Semi-natural broadleaved woodland (JNCC: A1.1.1) – small patch of woodland, mostly open scrub with scattered mature trees, one dead, adjacent to ditch and arable fields. Thistle, broad leaved dock, bramble, hawthorn, nettle and oak present.
TN312	Scrub (JNCC: A2.1) consisting of dense bramble with some scattered trees around edges.
TN325	Scrub (JNCC: A2.1) – small area of scrub between hedge, arable field and substation, includes access road for existing substation.
TN331	Improved grassland (JNCC: B4) - house, gardens and paddocks, used for grazing, electric fences and livestock shelters present.
TN336	Scrub (JNCC: A2.1) – consisting of hawthorn and blackthorn, dense bramble, nettle, broad leaved dock and thistle. Fenced.

Target Note (TN)	Description
TN345	Small section of scrub with tree stumps present for potential reptile hibernacula and pond (pond A72).
TN346	Scrub (JNCC: A2.1) – scrub with scattered trees, negligible bat roost throughout, several passerine bird calls heard (carrion crow).
TN368	Soil heaps, woody debris and domestic waste piles.

4.2.2.17 The locations of these habitat mosaics and potential refugia are shown on [Figure 11 - Figure 35](#), and can be found using the TN reference specified in [Table 8](#). Please also refer [Appendix A – Target Notes](#) for further details. These mosaics contain a range of habitats including scrub, woodland edges and grassland.

Dormice

4.2.2.18 No records of dormice were returned during the desk study. Furthermore, no suitable habitats were recorded within the Hornsea Four EP1HS study area during the updated EP1HS. Consequently, this species is considered to be absent and no further surveys will be required. As such this species has not been considered further in this report.

Invertebrates

4.2.2.19 No evidence of suitable habitat to support significant populations of notable species of invertebrates was noted during the updated EP1HS. Consequently, no further surveys will be required and as such these species have not been considered further.

Invasive non-native species

4.2.2.20 No invasive non-native species were recorded during the updated EP1HS.

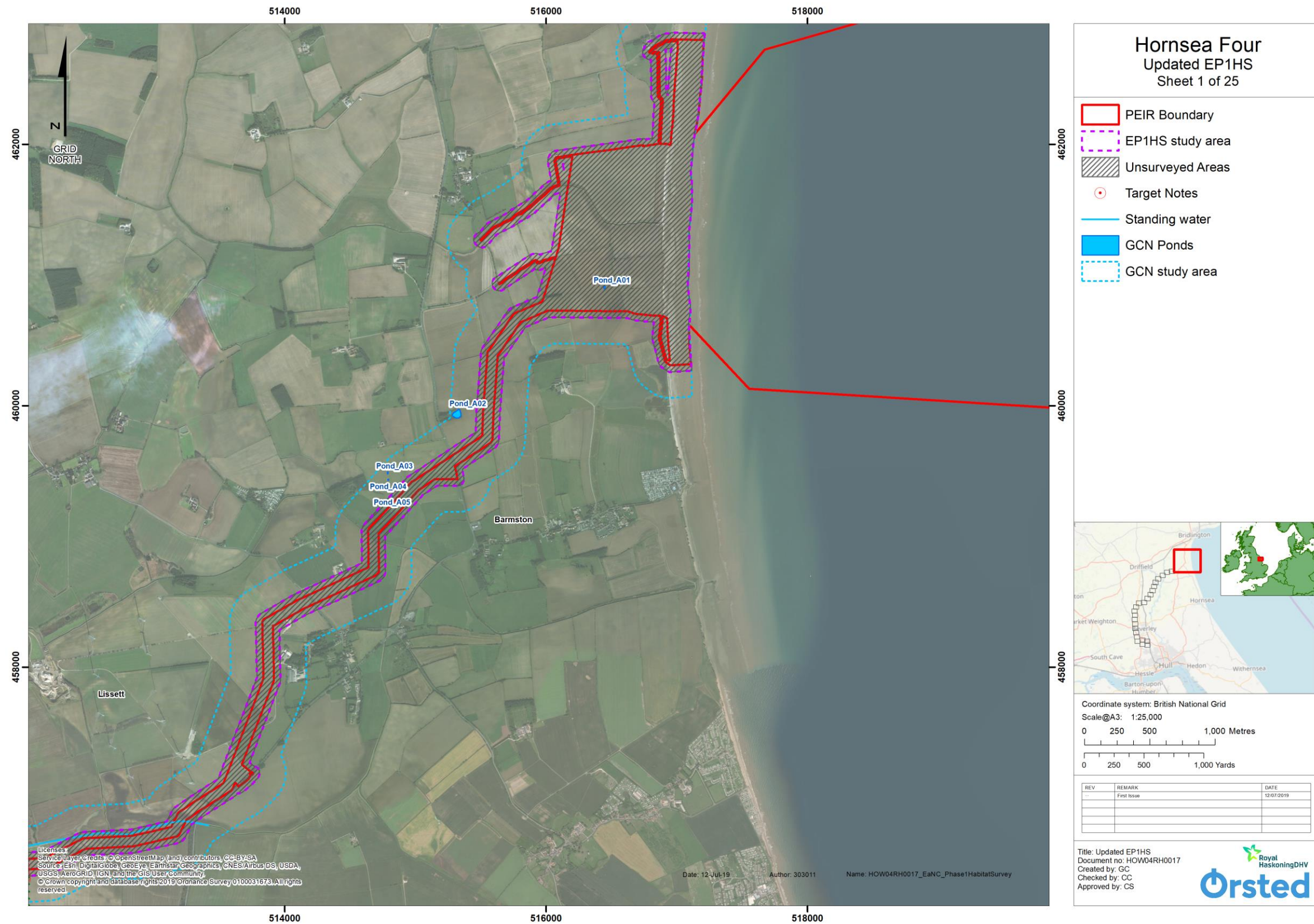


Figure 11: Updated EP1HS survey – Landfall (Not to Scale).

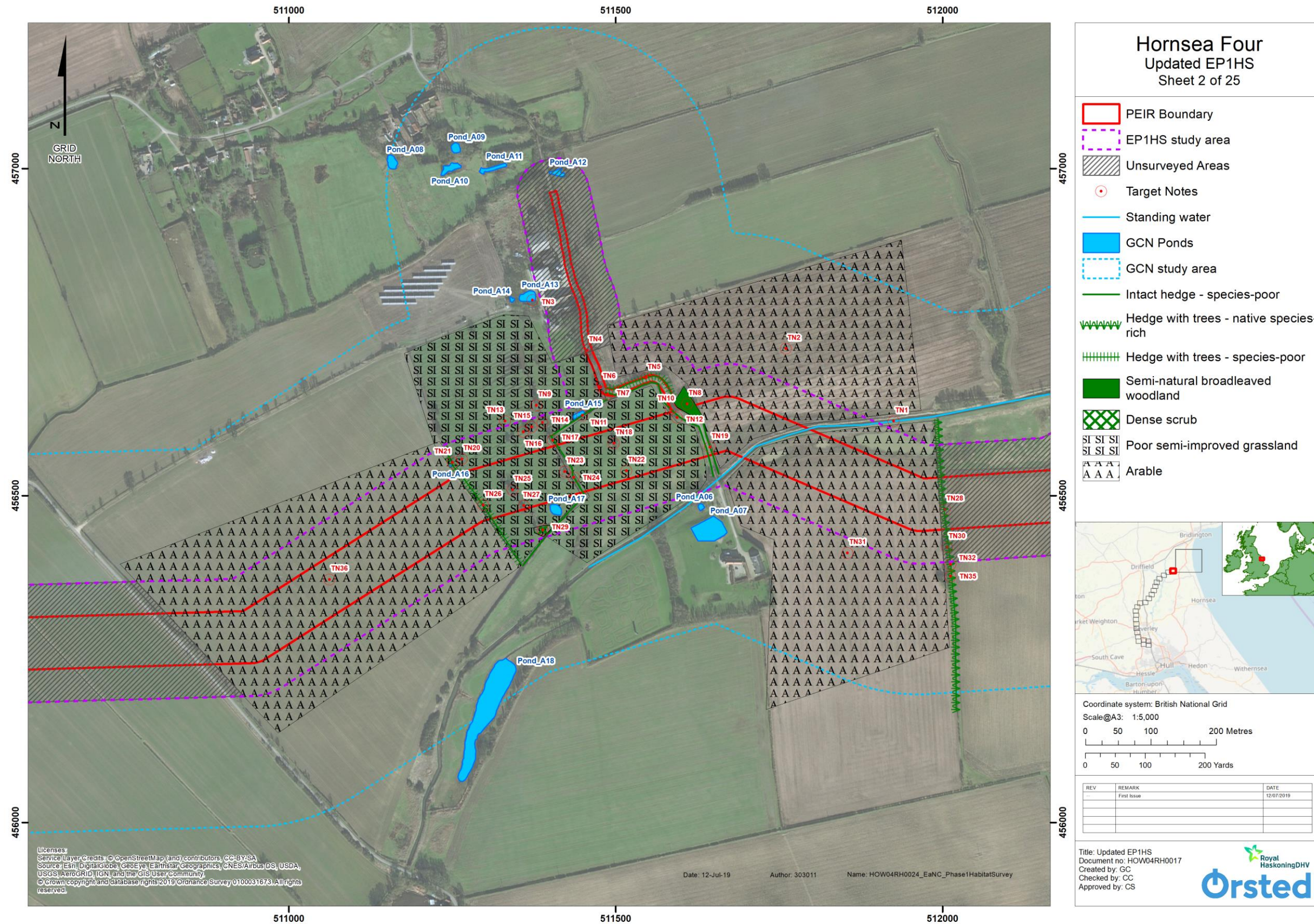


Figure 12: Updated EP1HS survey – ECC (1) (Not to Scale).



Figure 1.3: Updated EP1HS survey – ECC (2) (Not to Scale).

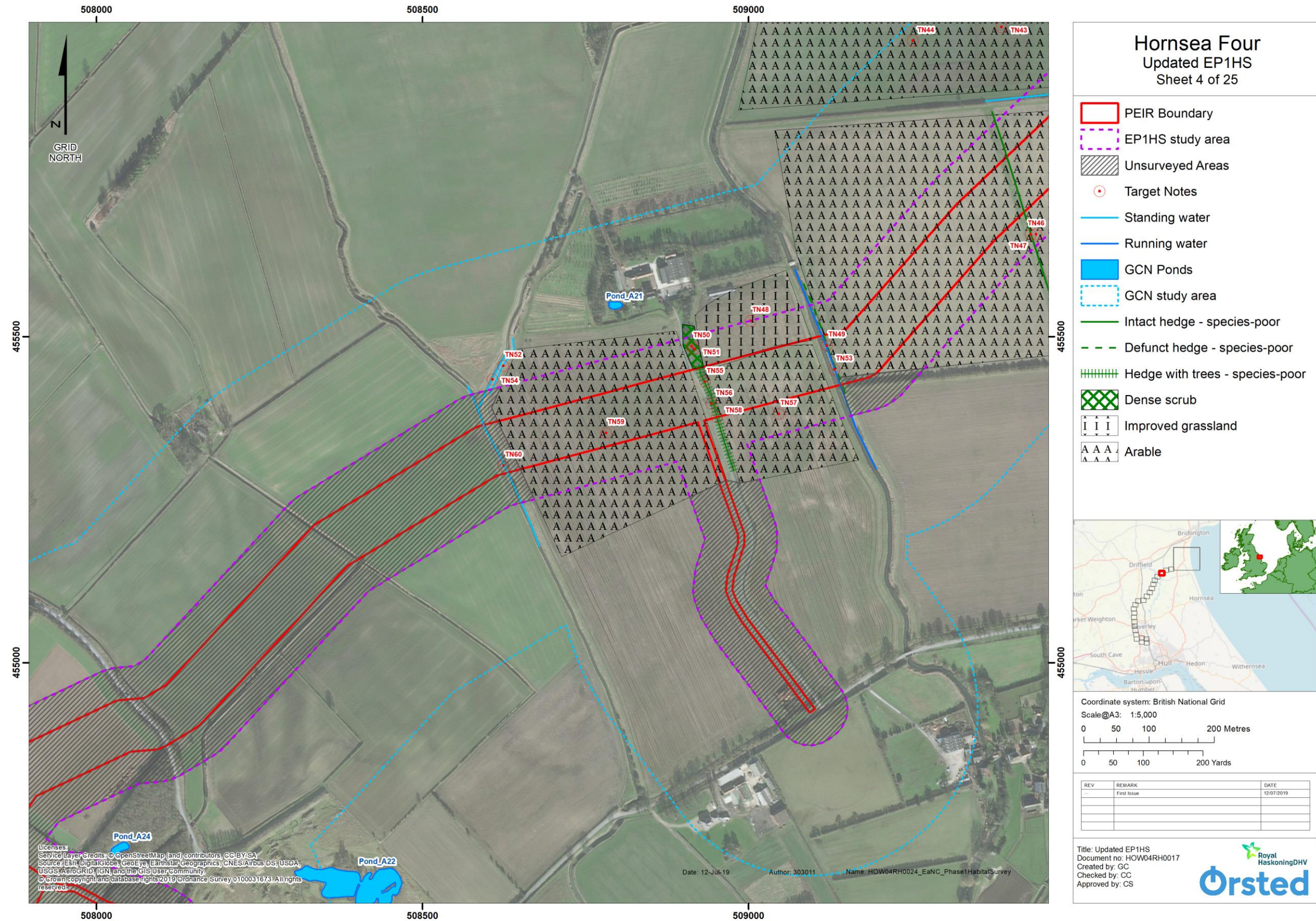


Figure 14: Updated EP1HS survey – ECC (3) (Not to Scale).



Figure 15: Updated EP1HS survey – ECC (4) (Not to Scale).



Figure 16: Updated EP1HS survey – ECC (5) (Not to Scale).

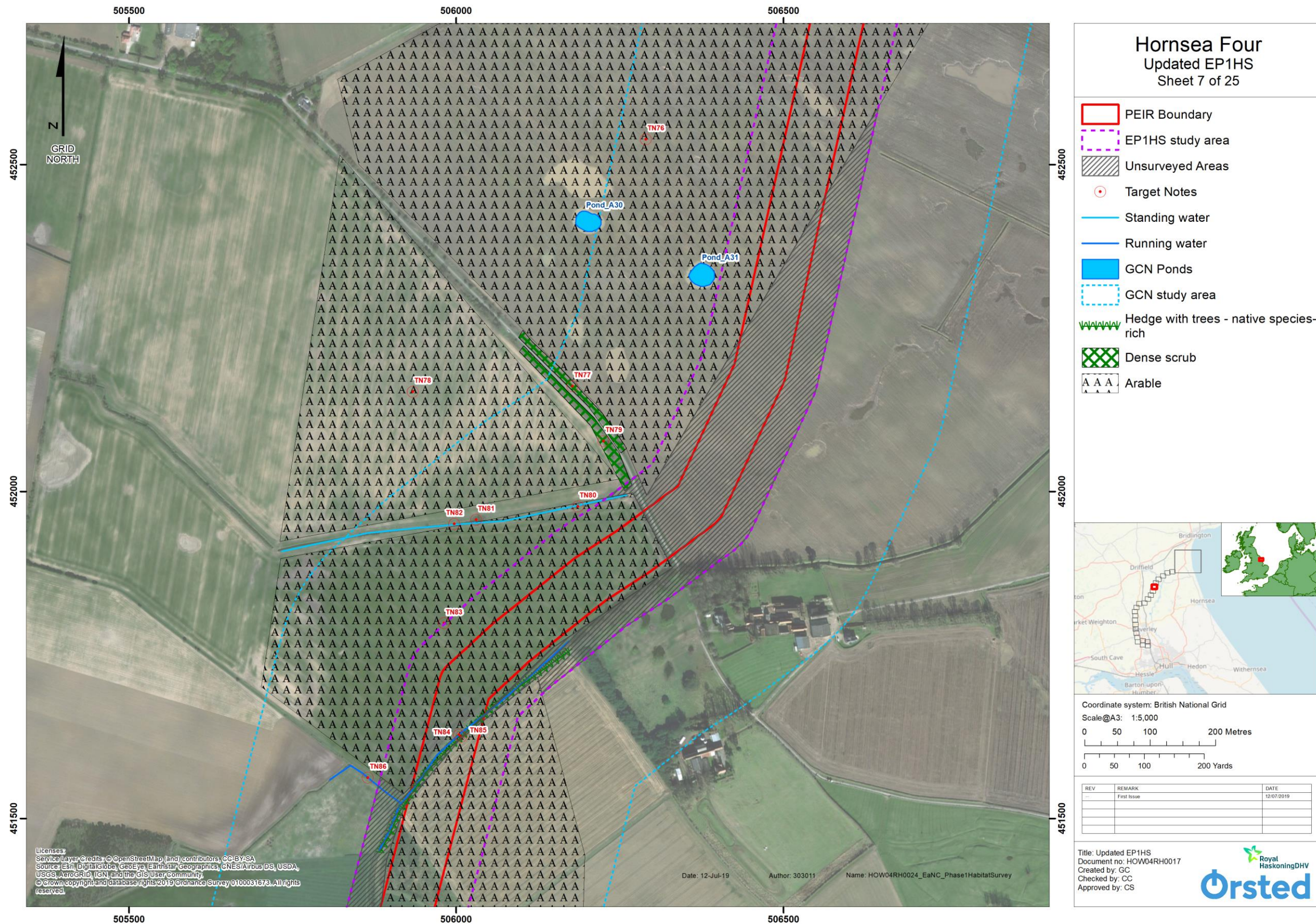


Figure 17: Updated EP1HS survey – ECC (6) (Not to Scale).



Figure 18: Updated EP1HS survey – ECC (7) (Not to Scale).



Figure 19: Updated EP1HS survey – ECC (8) (Not to Scale).

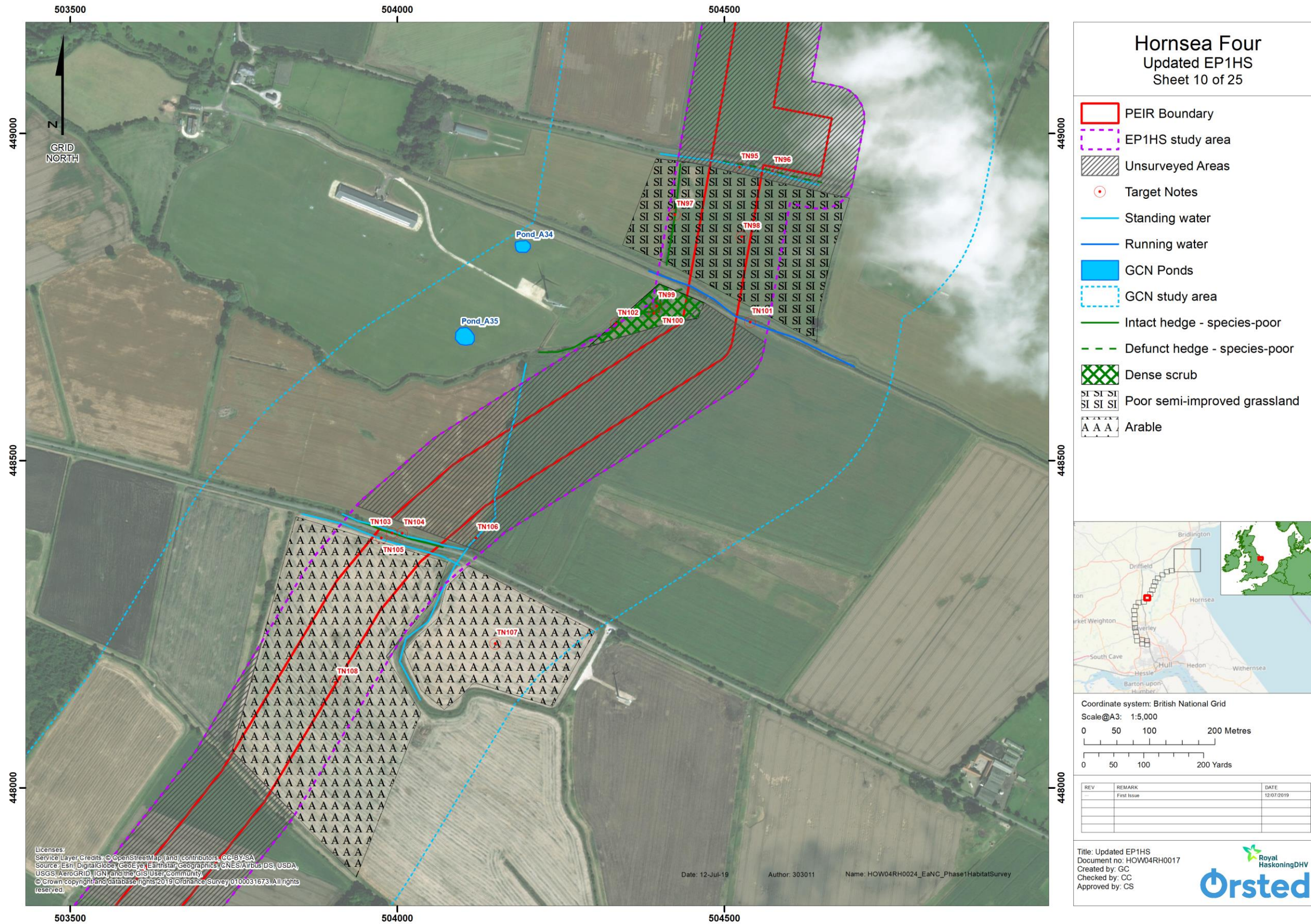


Figure 20: Updated EP1HS survey – ECC (9) (Not to Scale).

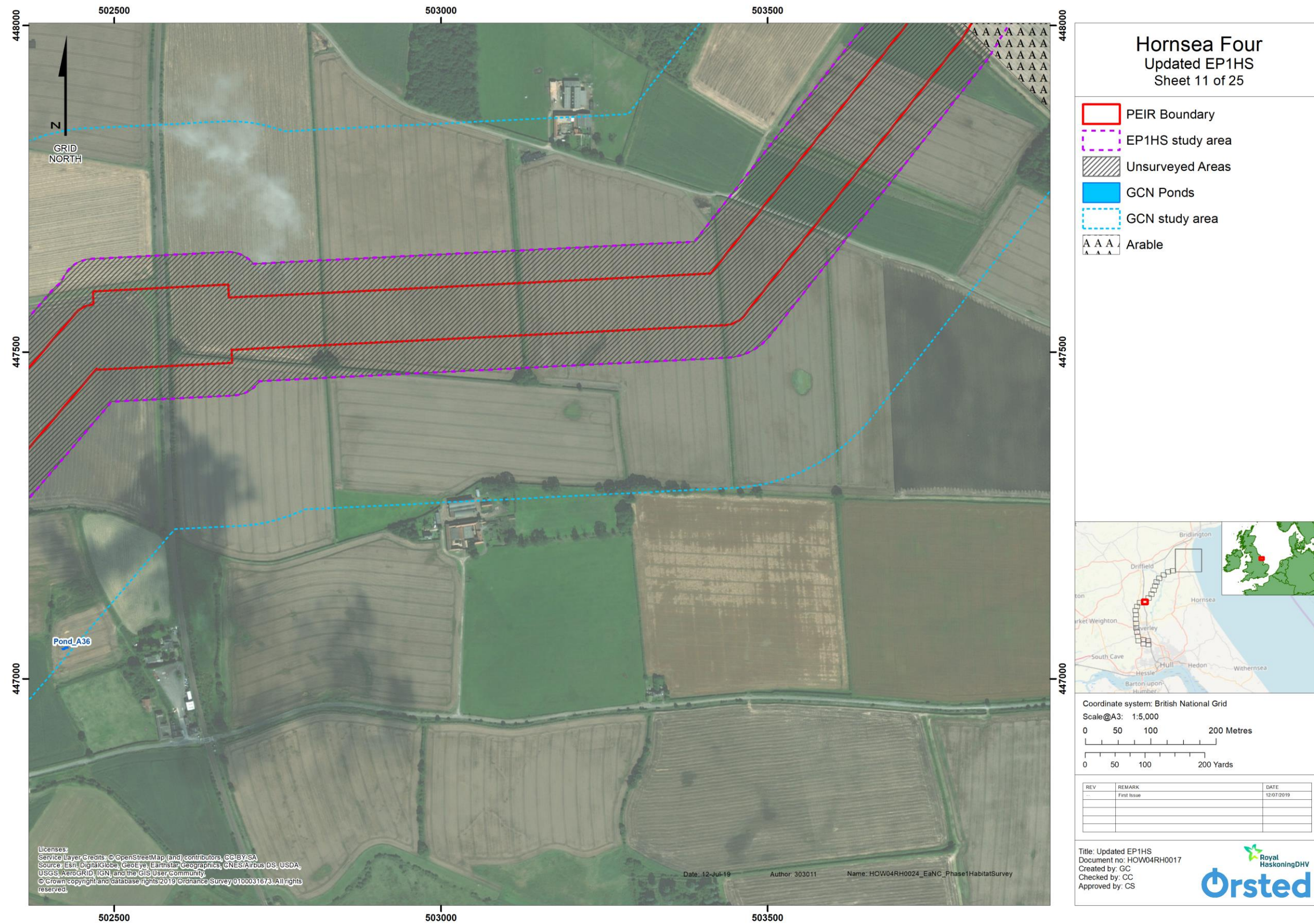


Figure 21: Updated EP1HS survey – ECC (10) (Not to Scale).



Figure 22: Updated EP1HS survey – ECC (11) (Not to Scale).



Figure 23: Updated EP1HS survey – ECC (12) (Not to Scale).

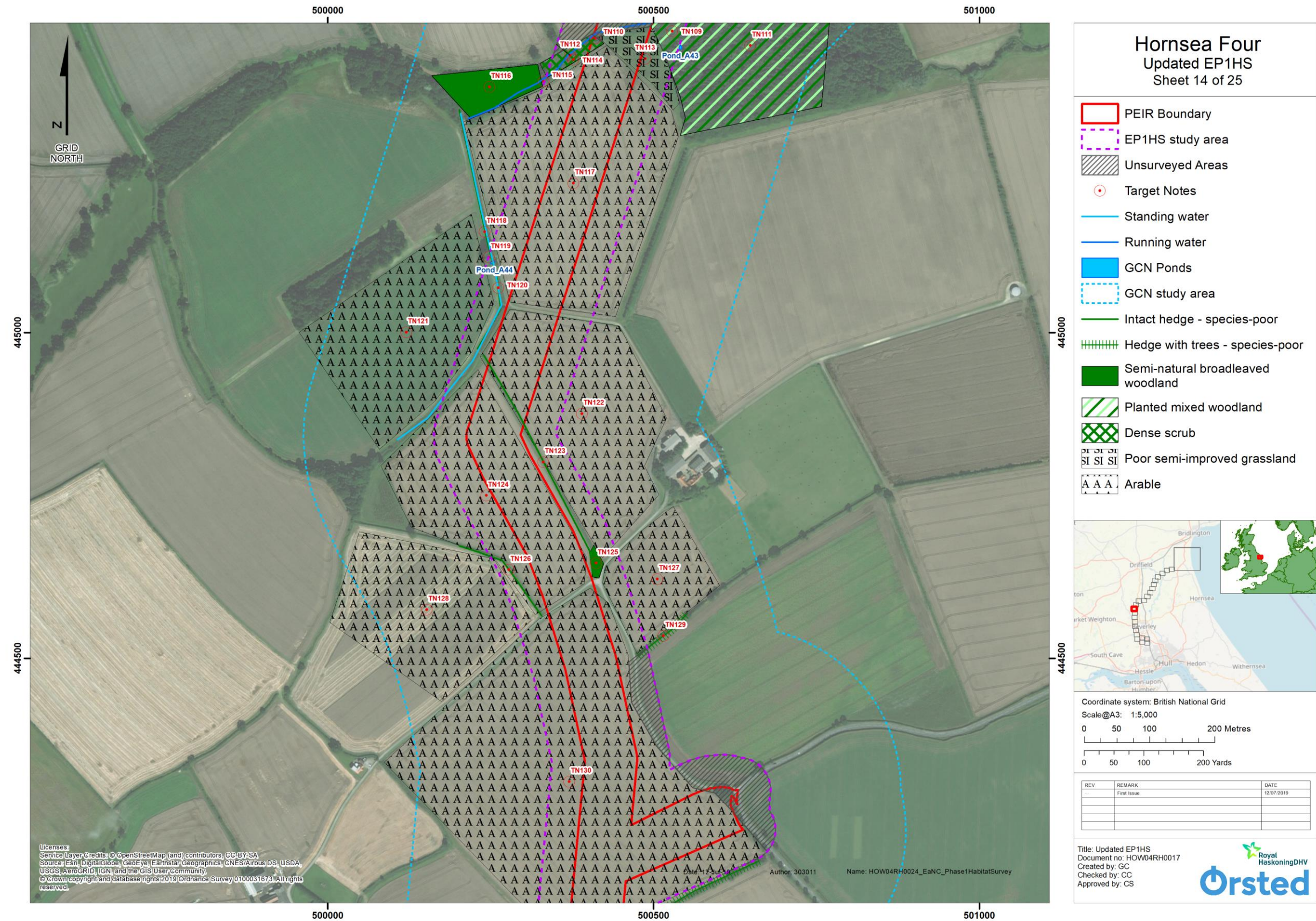


Figure 24: Updated EP1HS survey – ECC (13) (Not to Scale).



Figure 25: Updated EP1HS survey – ECC (L4) (Not to Scale).

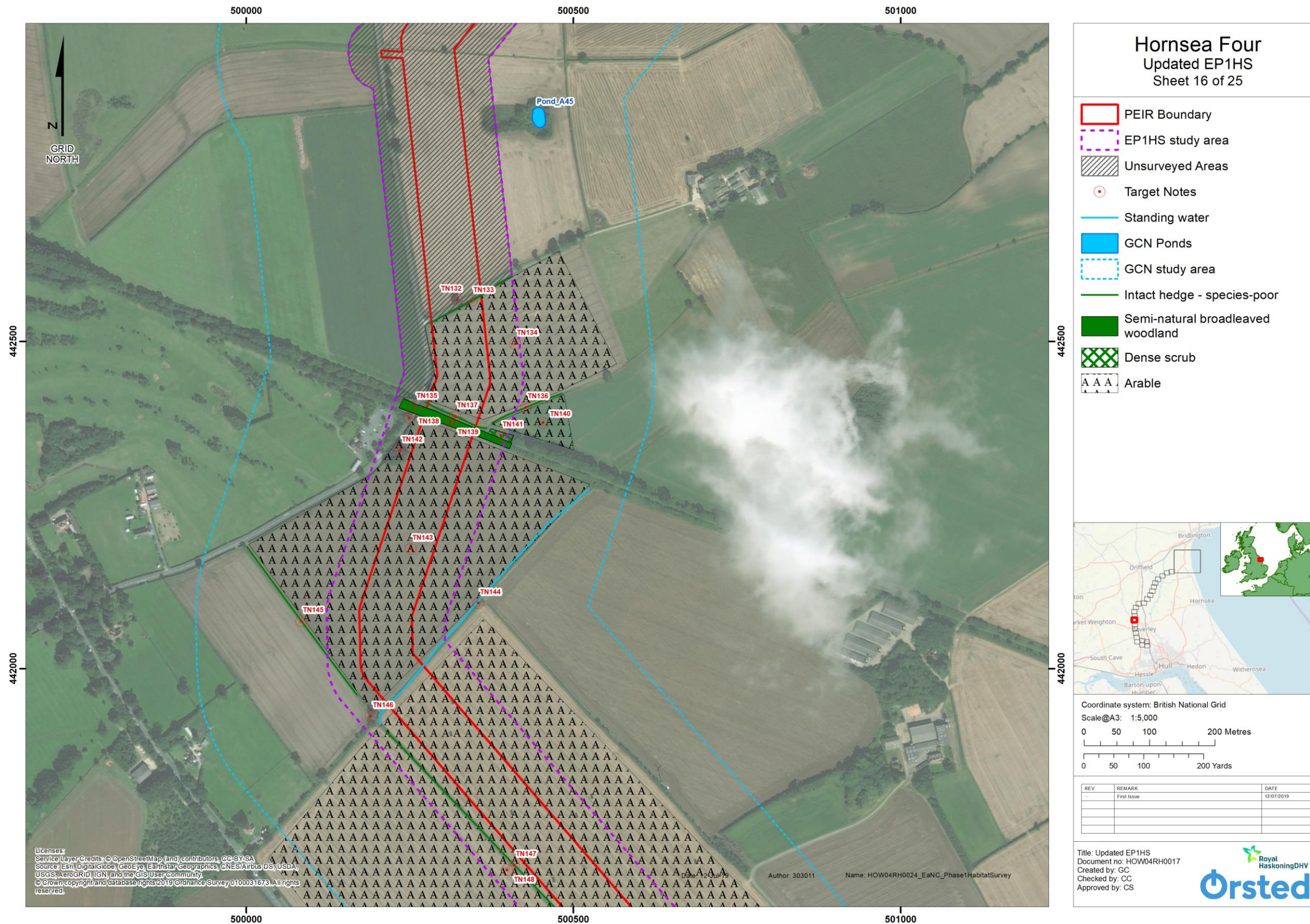


Figure 26: Updated EP1HS survey – ECC (L5) (Not to Scale).

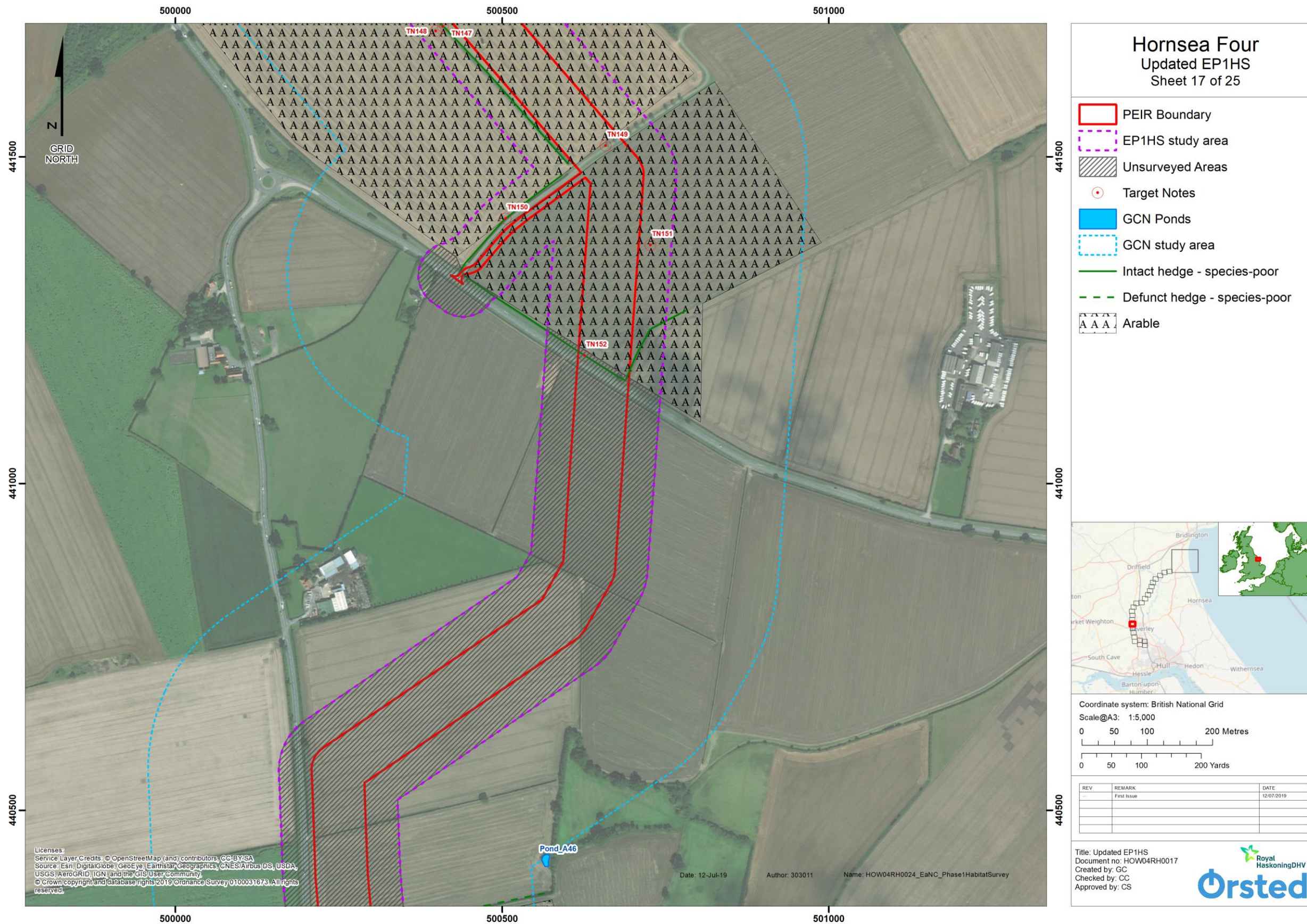


Figure 27: Updated EP1HS survey – ECC (16) (Not to Scale).

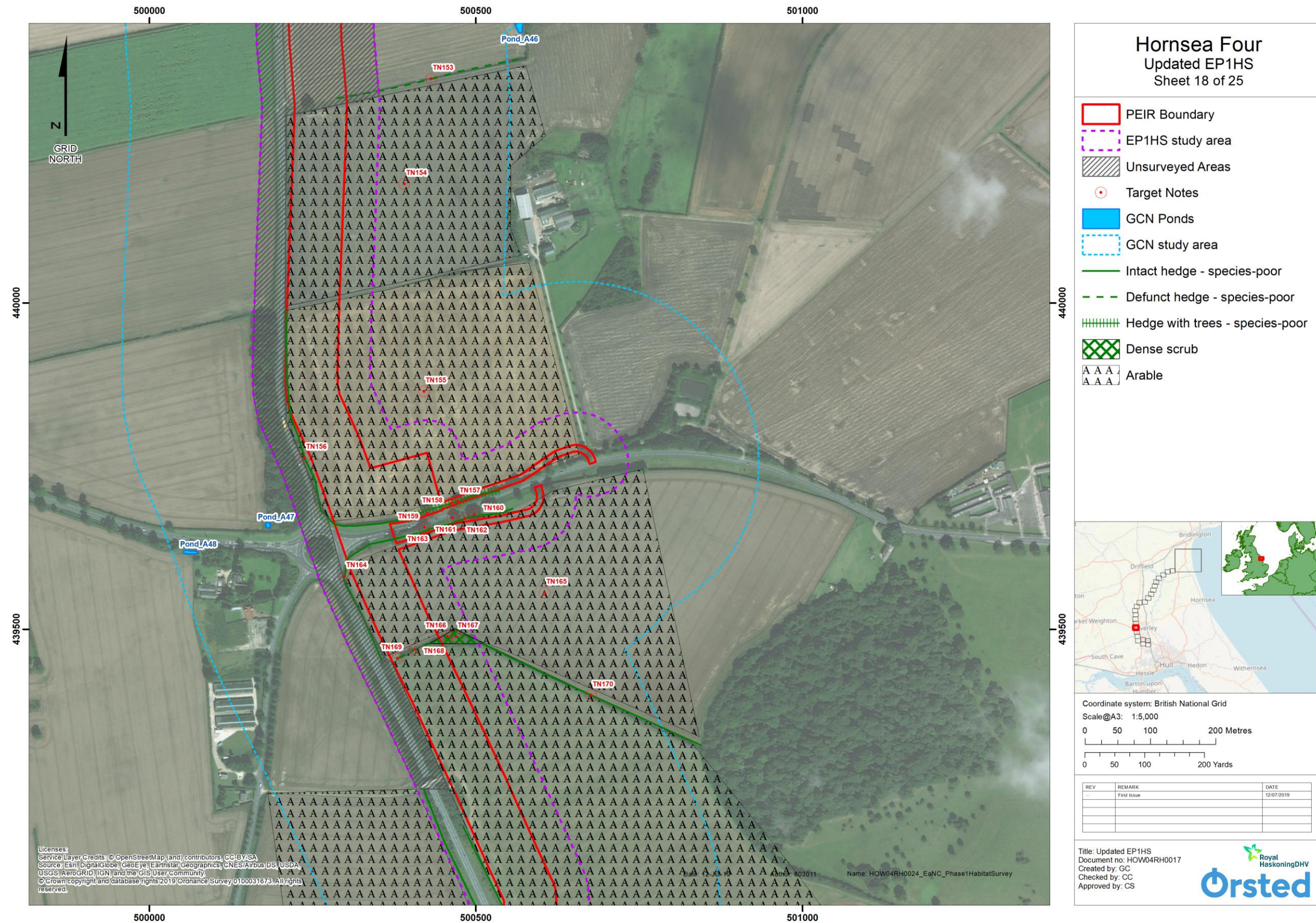
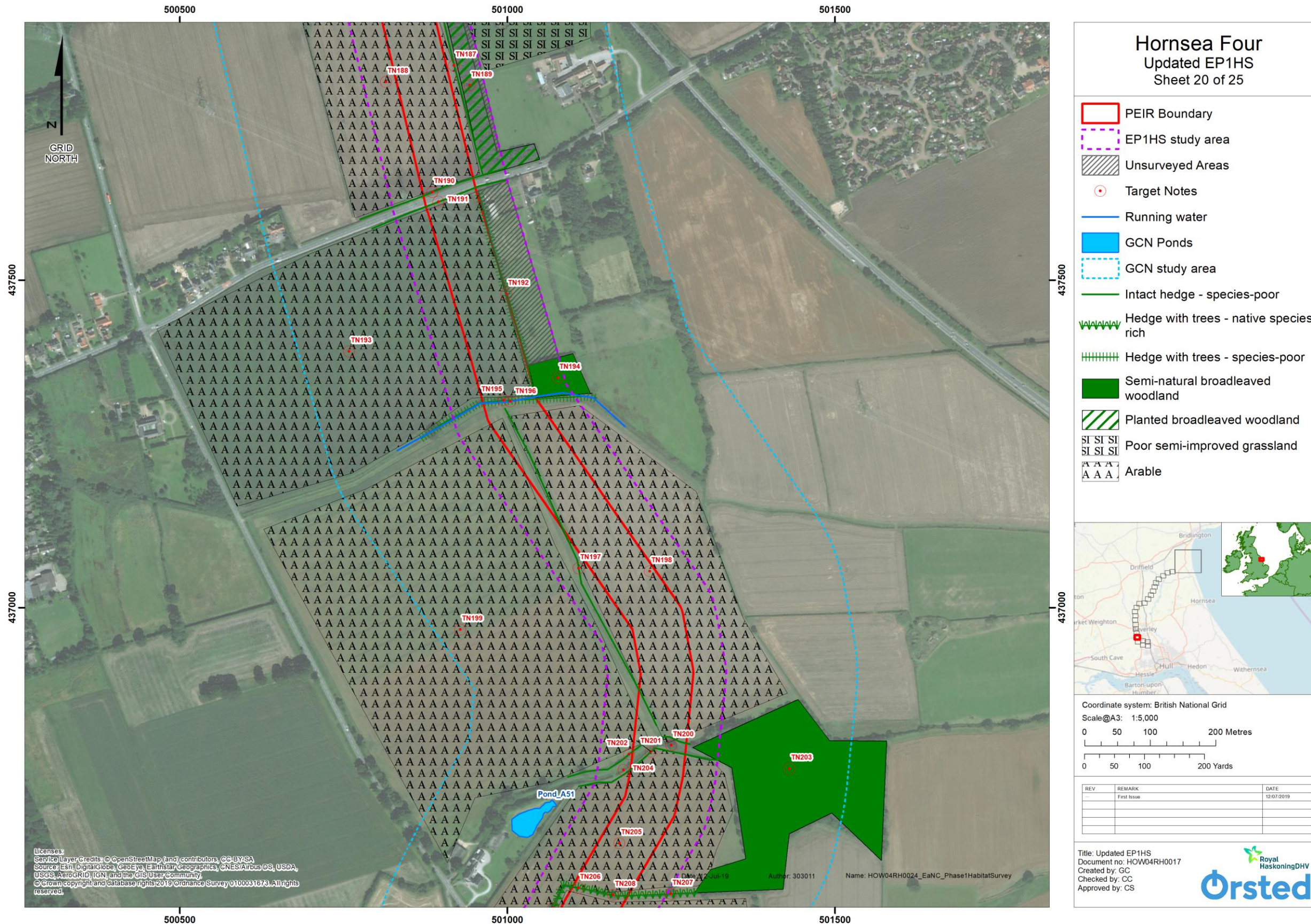


Figure 28: Updated EP1HS survey – ECC (17) (Not to Scale).



Figure 29: Updated EP1HS survey – ECC (18) (Not to Scale).



Hornsea Four Updated EP1HS Sheet 20 of 25

- PEIR Boundary
- EP1HS study area
- Unsurveyed Areas
- Target Notes
- Running water
- GCN Ponds
- GCN study area
- Intact hedge - species-poor
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Semi-natural broadleaved woodland
- Planted broadleaved woodland
- Poor semi-improved grassland
- Arable



Coordinate system: British National Grid
 Scale@A3: 1:5,000
 0 50 100 200 Metres
 0 50 100 200 Yards

REV	REMARK	DATE
1	First Issue	12/07/2019

Title: Updated EP1HS
 Document no: HOW04RH0017
 Created by: GC
 Checked by: CC
 Approved by: CS



Figure 30: Updated EP1HS survey – ECC (19) (Not to Scale).

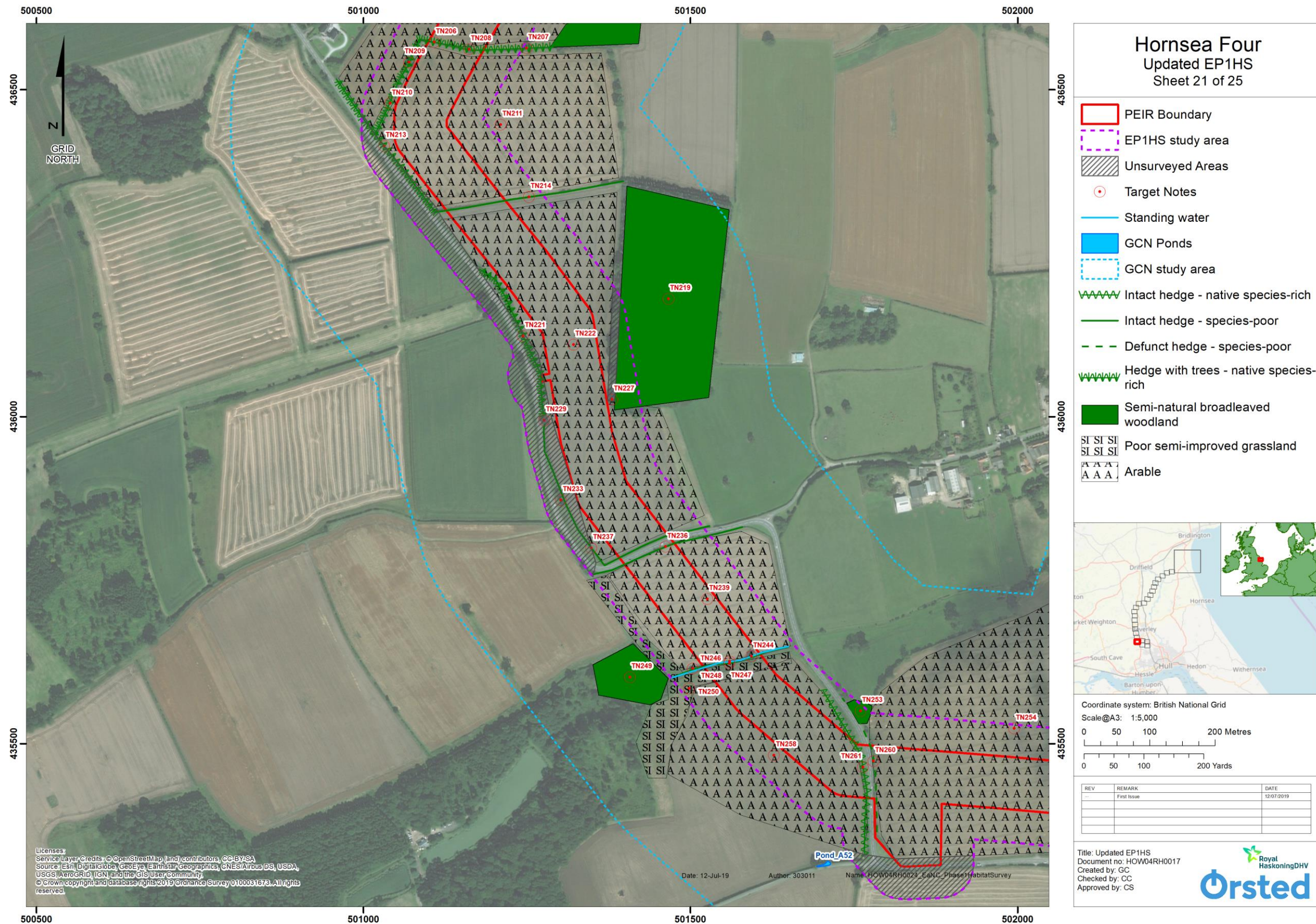


Figure 31: Updated EP1HS survey – ECC (20) (Not to Scale).



Figure 32: Updated EP1HS survey – OnSS (1) (Not to Scale).



Figure 33: Updated EP1HS survey – OnSS (2) (Not to Scale).



Figure 35: Updated EP1HS survey – OnSS (4) (Not to Scale).

4.3 Summary of Phase 2 Survey Requirements

4.3.1.1 **Table 9** provides an indication of whether Phase 2 species specific surveys are required. Further information on the suite of Phase 2 surveys that have been identified as being required is outlined in **Section 5.2** and an indicative program can be found in **Section 5.3**. Proposed mitigation measures, including those for species that are not recommended for Phase 2 surveys is provided in **Section 5.4**. Further details on proposed mitigation measures can be found in **Volume F2, Chapter 3: Outline Ecological Management Plan**.

Table 9: Summary of requirements for Phase 2 species specific surveys.

Species	Phase 2 survey required (yes/no)
Birds	Yes – over-wintering bird surveys were finalised in March and breeding bird surveys commenced in April 2019. Both surveys will be reported separately to this document in Volume 6, Annex 3.2: Onshore Ornithology – Wintering and Migratory Birds Survey Report and Volume 6, Annex 6.3: Breeding Bird Survey Report .
Badger	Information relating to badgers is reported separately within Volume 6, Annex 3.10: Badger Survey Report .
Bats	Yes – further surveys to establish the presence of roosting bats (dusk/dawn emergence/re-entry surveys) and commuting/foraging bats (monthly activity transect surveys).
Water vole	Yes – presence/absence surveys (two survey visits)
Otter	Yes – presence/absence surveys (two survey visits)
Reptiles	No – no specific survey will be undertaken. However mitigation measures (i.e. Reptile Precautionary Method of Working - PMoW) are proposed for all areas of habitat that have been assessed as providing optimal habitat for common reptile species. These are outlined within Volume F2, Chapter 3: Outline Ecological Management Plan .
Invertebrates	No
Dormice	No
Botanical survey	No

5 Recommendations

5.1 Overview

5.1.1.1 [Section 4.2](#) identifies those habitats which have the potential to support legally protected or notable species, and also sightings / field signs for selected legally protected species. In light of these findings and in order to characterise the ecological baseline for the survey area, further Phase 2 surveys are recommended for particular legally protected or notable species. This section provides further information regarding these Phase 2 survey requirements and sets out their proposed scope and methodology that will be adhered to, in accordance with industry accepted guidance.

5.2 Phase 2 Species Specific Surveys

5.2.1 Badger presence/absence survey

5.2.1.1 As outlined in [Section 1.1](#) approximately 50% of the Hornsea Four EP1HS study area remains to be surveyed due to landowner access restrictions during the updated EP1HS. As such, a badger presence/absence survey is planned within all previously inaccessible areas (subject to further survey access).

5.2.1.2 The badger presence/absence survey will be undertaken in accordance with Natural England's standing advice on badger surveys (Natural England, 2015) and in line with the methodology outlined in [Section 3.4](#).

5.2.1.3 The badger presence/absence baseline survey data for all area surveyed at the time of writing this technical report have been provided in [Volume 6, Annex 3.10: Badger Survey Report](#). All remaining areas where baseline survey data was incomplete or not available at the point of writing this technical report will be provided and/or addressed in support of the ES, which will contain all related assessments required to inform the DCO application.

5.2.2 Bat roost emergence/re-entry surveys

5.2.2.1 As outlined in [Section 4.2](#), the updated EP1HS identified and assessed a total 31 features as providing moderate or high suitability to support roosting bats within the Hornsea Four EP1HS study area. In accordance with the BCT guidelines (BCT,2016), all trees and structures assessed as providing moderate or high suitability for supporting roosting bats require additional surveys (i.e. emergence/re-entry surveys) to confirm the likely presence and/or absence of a bat roosts.

5.2.2.2 All trees and structures assessed as providing low suitability for supporting roosting bats will still be considered as potentially supporting opportunistic roosts in the future, but further surveys are not necessary to confirm presence or absence, following the guidelines set out by the BCT guidelines (BCT,2016). Mitigation measures for features assessed as providing low suitability for roosting bats will be provided and is outlined in [Section 5.4](#)

- 5.2.2.3 Additionally, within the areas reviewed using the aerial imagery, there are a further 15 potential bat roost features considered to have moderate suitability. The imagery was also reviewed in conjunction with the NEYDEC biological records data. Where survey access is granted to the 15 additional features identified using aerial imagery prior to the bat survey period, the features will be visited to assess their suitability, as per the methodology in [Section 3.4](#). If they are subsequently assessed as suitable, the appropriate bat survey will be undertaken within the bat survey period. However, if during the assessment they are assessed as unsuitable, this will be recorded, and no further survey will be conducted.
- 5.2.2.4 The emergence / re-entry surveys will be undertaken in accordance with the methodology outlined in the BCT guidelines (BCT,2016). For each tree or structure, two survey visits (i.e. one dusk emergence survey and one dawn re-entry survey) will be undertaken. Each dusk emergence survey will commence 15 minutes before sunset and will cease 1.5-2 hours after sunset. The dawn re-entry survey will commence 1.5-2 hours before sunrise and will cease 15 minutes after sunrise. The surveys will be at least two weeks apart and will be undertaken between May and September with one survey visit between May and August.
- 5.2.2.5 Hand held bat detectors (any type) and recording equipment to record any echolocation calls will be used for each survey. Laboratory sound-analysis will be used to identify the calls of any bat species picked up using the bat detectors. Species, timing, and activity will be noted for each bat picked up during the survey.
- 5.2.2.6 Weather conditions including temperature, wind speed and precipitation, will be recorded at the start and end of each survey visit. Surveys will not be carried out when the temperature is below 10°C at sunset, or during heavy rain or strong wind unless justified by the surveying ecologist.
- 5.2.2.7 The bat baseline survey data was incomplete and not available at the point of writing this technical report and will be provided in [Volume 6, Annex 3.8: Bat Survey Report](#) to support the ES containing all related assessments required to inform the DCO application.

5.2.3 Bat activity transect and static detector surveys

- 5.2.3.1 [Section 4.2](#) identified linear habitats (i.e. hedgerows and watercourses) with the potential to support commuting and foraging bats within the Hornsea Four EP1HS study area. In accordance with the BCT guidelines (BCT, 2016), all habitats assessed as providing moderate or high suitability for supporting commuting and/or foraging bats will require further bat activity surveys in order to confirm the number of bats, whether they are used by foraging and/or commuting bats, and to identify the species which might be present.
- 5.2.3.2 All features assessed as providing low suitability for supporting commuting and/or foraging bats will still be considered as potentially supporting small numbers of commuting/foraging bats, but further surveys are not necessary to confirm presence or absence, as set out by the BCT guidelines (BCT,2016). Mitigation measures for features assessed as providing low suitability for commuting and/or foraging bats are provided in [Section 5.4](#)

- 5.2.3.3 The updated EP1HS identified a total 46 features as providing moderate or high suitability for commuting and/or foraging bats.
- 5.2.3.4 Additionally, within the areas reviewed using the aerial imagery, a further 14 habitat areas were identified as offering potential bat commuting and foraging opportunities. The aerial imagery was also reviewed in conjunction with the NEYDEC biological records data.
- 5.2.3.5 If survey access is granted to those 14 additional features identified using aerial imagery, prior to the bat survey period, these features will be visited to assess their suitability as per the methodology set out in [Section 3.4](#). If they are subsequently assessed as suitable, the respective bat survey will be undertaken within the bat survey period. However, if during the assessment they are assessed as unsuitable, this will be recorded, and no further surveys will be conducted.
- 5.2.3.6 The monthly bat activity transect surveys will be undertaken in accordance with the guidelines (BCT, 2016). Transect surveys will involve walking at a constant speed along each linear bat habitat recording observations such as number of bats, flight direction, flight height, behaviour, appearance and relative speed.
- 5.2.3.7 Static detector surveys will involve placement of a static detector at locations identified as suitable, such as within hedgerows or along woodland edges. Data from these surveys will be recorded and subject to laboratory sound-analysis to identify species and pass numbers following the survey.
- 5.2.3.8 Each habitat scoped into the survey, and assessed as providing moderate or high suitability for commuting or foraging bats will be subject to one transect survey visit per month from May to October (a total of six visits), including one dusk and pre-dawn survey within a 24-hour period, and static bat detector surveys at up to three locations within each habitat collected on five consecutive nights per month, including one dusk and pre-dawn survey within a 24 hour period. The transect surveys will commence at sunset and will cease 2-3 hours after sunset. The static detector surveys will commence 30 minutes before sunset and will cease 15 minutes after sunrise.
- 5.2.3.9 The surveyors will use hand-held bat detectors (any type) and recording equipment to record any echolocation calls picked up during the survey. The same model of detector will be used for all surveys. Laboratory sound analysis will be used to identify the calls of any bat species picked up using the bat detectors.
- 5.2.3.10 Weather conditions including temperature, wind speed and precipitation, will be recorded at the start and end of each survey visit. Surveys will not be carried out when the temperature is below 10°C at sunset, or during heavy rain or strong wind, unless justified by the surveying ecologist.

5.2.3.11 The bat baseline survey data was incomplete and not available at the time of writing this technical report and will be provided in [Volume 6, Annex 3.8: Bat Survey Report](#) to support the ES containing all related assessments required to inform the DCO application.

5.2.4 Breeding birds

5.2.4.1 Breeding bird surveys have been undertaken between April and June 2019 (inclusive) and will comprise of two visits per month. The survey will consist of a combination of Vantage Points (VP) and a walkover survey in order to determine the usage of habitats present within the Hornsea Four PEIR boundary by breeding bird species.

5.2.4.2 Standard recording procedures will be used to note the species, number of sightings and activity (Bibby et al. 2000). The surveyors will also record the exact route taken, so that during subsequent visits alternative circuitous routes of each transect can be used to ensure that all parts of each survey area can be surveyed at a different time of day.

5.2.4.3 The breeding birds survey data was incomplete and not available at the point of writing this technical report and will be provided in [Volume 6, Annex 6.3: Breeding Bird Survey Report](#) to support the ES containing all related assessments required to inform the DCO application.

5.2.5 Water vole

5.2.5.1 A total of 37 water bodies have been assessed as providing optimal habitat for water voles and as such a water vole presence/absence survey, comprising two separate survey visits will be undertaken on all 37 water bodies. One survey will be undertaken in May 2019, and the second will be undertaken in July 2019.

5.2.5.2 Within the areas that have been reviewed using aerial imagery, a further 36 water bodies have been identified as having the potential to support water voles. If access is granted to those 36 additional water bodies identified using aerial imagery prior to the water vole survey period, these water bodies will be visited. If they are assessed as suitable, the water vole survey will be undertaken within the water vole survey window.

5.2.5.3 The water vole surveys will be undertaken in accordance with the protocol for Environmental Assessment Surveys set out in the Water Vole Conservation Handbook (Strachan et al. 2011). Surveys will be undertaken from the banks and where possible within the watercourse. Surveyors will search for field signs of water voles primarily within the marginal vegetation along the bank toe and along the length of the watercourse within the Hornsea Four EP1HS study area (50 m upstream and downstream), and up to 1 m either side of this vegetation along one bank of the watercourse. All field signs of water vole will be recorded, including sightings, burrows, latrines, feeding stations, lawns, nests, footprints and runways. Field signs, habitat information, and weather conditions at the time of the survey will be recorded alongside their location.

5.2.5.4 The water vole survey data was incomplete and not available at the point of writing this technical report and will be provided in [Volume 6, Annex 3.5: Water vole Survey Report](#) to support the ES containing all related assessments required to inform the DCO application.

5.2.6 Otter

5.2.6.1 Eleven water bodies were assessed as having the potential to support otters. The 36 additional water bodies that have been identified from the aerial imagery will also be checked for their suitability to support otters, should access be granted in advance of the survey period. Should any of those additional water bodies be found to be suitable for otters they will also be surveyed, as per the methodology in [Section 3.4](#).

5.2.6.2 The otter survey (comprising two separate visits) will be undertaken in accordance with the protocol set out by Scottish Natural Heritage (Otters and Development, 2016). Surveys will be conducted on one bank for the full length of each optimal watercourse within the Hornsea Four PEIR boundary, plus an additional 250 m upstream and 250 m downstream. The watercourse will be walked by an ecologist, and all field signs of otter will be recorded. This will include signs of mink, spraints, holts, couches, prints, feeding remains, anal jelly and sightings. The field sign and its location will be recorded. Surveys will not be undertaken following heavy rain.

5.2.6.3 Due to the overlap in survey methodology and in habitats, the otter survey will be conducted concurrently with the water vole survey.

5.2.6.4 The otter baseline survey data was incomplete and not available at the point of writing this technical report and will be provided in [Volume 6, Annex 3.7: Otter Survey Report](#) to support the ES containing all related assessments required to inform the DCO application.

5.2.7 Great crested newt

5.2.7.1 A total of 85 ponds have been identified within the 250 m Hornsea Four study area. All 85 water bodies (subject to landowner permission) will be subject to a daytime HSI assessment in accordance with standard methodology (Oldham et al. 2000). The HSI assessment considers habitat attributes that are considered to influence the suitability of a pond for breeding great crested newts. These attributes are as follows:

- Location;
- Area;
- Drying;
- Water quality;
- Shade;
- Waterfowl presence;
- Fish presence;
- Terrestrial habitat;
- Macrophyte presence; and
- Number of waterbodies within 1 km.

- 5.2.7.2 Each pond will then be subject to an environmental DNA (eDNA) survey following the field sampling protocol as set out in Briggs et al. (2014). A total of 20 samples have been collected from around the accessible parts of each water body perimeter by a great crested newt (GCN) licenced ecologist, including open water areas and areas with vegetation present. Each water body sampling has been completed with a fresh sampling pack to avoid cross contamination.
- 5.2.7.3 Each sample has then be sent to the Food and Environmental Research Agency (FERA) for analysis for eDNA in accordance with approved field and laboratory protocols (Briggs et al. 2014). The presence or absence of GCN from each of the surveyed ponds will be determined based on the results of the eDNA analysis.
- 5.2.7.4 The HSI assessment and subsequent eDNA survey has be undertaken between mid-April and the end of June 2019.
- 5.2.7.5 Survey results relating to GCN for the 42 ponds surveyed at the time of writing this report have been provided in [Volume 6, Annex 3.4: Great Crested Newt Environmental DNA \(eDNA\) Survey Report](#). All remaining ponds where baseline survey data was incomplete or not available at the point of this PEIR will be provided and/or addressed in support of the ES, containing all related assessments required to inform the DCO application.

5.3 Survey Programme

- 5.3.1.1 Based on the results obtained from the updated EP1HS, [Table 10](#) provides an indicative programme for the further species-specific surveys outlined in [Section 5.2](#).

Table 10: Indicative onshore ecology Phase 2 survey programme (based on the findings of the updated EP1HS).

Survey	Number of visits	Survey Season	Total visits	Notes
Monthly bat (activity transect survey) – moderate/high suitability	One per month	May to October (weather dependant)	7	One survey to incorporate an evening (after dusk) and a morning (before dawn) within one 24hr period.
Bat (static detector)	One per month	May to October (weather dependant)	7	Each month, detectors will be left in situ, recording, for 5 consecutive nights.
Bat (emergence/re-entry) – high suitability	Three visits	May to October (weather dependant)	3	One dusk emergence survey and one dawn re-entry survey plus an additional dusk or dawn survey. One visit to be undertaken between May and August.
Bat (emergence/re-entry) – moderate suitability	Two visits	May to October (weather dependant)	2	One dusk emergence survey and one dawn re-entry survey. One visit to be undertaken between May and August.
Badger presence/absence	One visit	February to December	1	One visit to be undertaken in May/June 2019 (dependant on landowner access being granted).
Breeding birds	Two visits per month	April to June	5	Survey consisting of both walkover survey and VP
Great crested newt HSI and eDNA	One	April to June	1	Survey undertaken in May/June 2019
Water vole and otter presence/absence surveys	Two	April to September	2	Survey visit 1 to be undertaken in May 2019 Survey visit 2 to be undertaken in August 2019

5.4 Pre-construction Mitigation Measures

5.4.1.1 The following section details mitigation measures that is proposed to be incorporated to ensure no harm to a species or to their habitats occurs, as well as ensuring legal compliance. This mitigation will be further developed as part of the development of a project specific [Volume F2, Chapter 3: Outline Ecological Management Plan](#).

5.4.2 Bats

5.4.2.1 As stated in [Section 5.2](#), no further surveys are required for those features assessed as providing low suitability for commuting and/or foraging bats (BCT, 2016). However, the following mitigation measures will be required in order to reduce any adverse, long term impacts on bats:

- Where possible, a reduction in the working width at hedgerow crossings to enable bat species to utilise a potential commuting feature during construction works;
- Any lighting required during construction works will be designed to minimise light scatter;
- In areas that require 24 hour working (for example, where horizontal directional drilling may take place under watercourses which may host bats), any lighting of the working corridor will be low level and directional; and
- Post construction habitat reinstatement.

5.4.2.2 Although no further survey is required for trees identified as providing low suitability for roosting bats, should any of these trees require removing during the project's construction period, a 'soft fell' approach should be taken in line with the BCT guidelines (BCT, 2016). This ensures that where tree limbs are cut, these are left grounded over night to allow any bats that might be present to make their way out. This should be done under the supervision of a licenced bat ecologist.

5.4.3 Reptiles

5.4.3.1 As stated in [Section 4.2](#) a reptile presence/absence survey is not proposed. However, robust mitigation is recommended for the project's construction period to ensure that there is no indirect damage to reptile habitats. As such, should vegetation removal be required within these areas, the following measures will be required in respect to reptiles:

- A PMoW with respect to reptiles will be included within the project OEMP and will include the following items:
 - a. A tool box talk will be delivered to site operatives prior to works, illustrating any risk areas on site for reptiles, what the penalties are for killing or injuring reptiles, and the procedure to be followed should any reptiles be found on site during construction;
 - b. Dismantling by hand of any potential reptile hibernacula. This will be done by a suitably qualified ecologist during the reptile active season (April to September inclusive, after night time temperatures are above 5°C); and

- c. Habitat manipulation of the working area to ensure it is unfavourable to reptiles during the works. This will include a vegetation trim down to 150 mm of all vegetation in areas of vehicle tracking or construction works, at least 48 hours prior to construction and all cut vegetation removed outside the proposed works area, to give any reptiles present time to leave the area. After the 48 hour period the remaining vegetation can be trimmed to a closer cut if required. Pre-construction vegetation clearance will be supervised by a suitably qualified ecologist.

5.4.4 Nesting birds

5.4.4.1 Reports on over-wintering birds and breeding birds within the Hornsea Four EP1HS study area are being produced separately to this document ([Volume 6, Annex 3.2: Onshore Ornithology – Wintering and Migratory Birds Survey Report](#) and [Volume 6, Annex 6.3: Breeding Bird Survey Report](#)). However habitats suitable for protected, notable and common species of birds were recorded during the updated EP1HS. These areas include grassland, scrub, woodland and isolated trees. The following measures will be required with respect to nesting birds:

- Where possible any tree, scrub or hedgerow removal required to facilitate the development will be carried out outside the breeding bird season (removal undertaken between September and February inclusive); or
- If this is not possible the vegetation shall be checked by an ecologist no more than 48hrs prior to the commencement of works to ensure no nesting birds are present.
- Any nest in use or being built during this survey will need to be left undamaged until the chicks have fledged and an alternative approach to the works proposed. In the event a common bird species is found to be nesting during the pre-construction check, a suitable buffer will need to be implemented. This could be between 2 m and 10 m but is dependent on the species which is noted.

6 Conclusions

6.1.1.1 An updated EP1HS was undertaken to record the habitats within the Hornsea Four EP1HS study area to identify the presence or likely presence of legally protected and notable species. The updated EP1HS covered all land where landowner access had been granted, equating to approximately 50% of the Hornsea Four EP1HS study area.

6.1.1.2 There are four statutory designated sites within a 2 km buffer of the Hornsea Four EP1HS study area, one of which is inside the Hornsea Four PEIR boundary. In addition, there are 11 non-statutory designated sites within the Hornsea Four PEIR boundary and a further 37 within a 2 km buffer.

6.1.1.3 The following UK Habitats of Principal Importance are present within the Hornsea Four EP1HS study area:

- Coastal and Floodplain Grazing Marsh,
- Deciduous Woodland,
- Maritime Cliff and Slope, and

- Reedbeds and Traditional Orchard.

6.1.1.4 The updated EP1HS noted that the Hornsea Four EP1HS study area is dominated by arable fields interspersed with field margin drains, larger streams and rivers and areas of woodland and scrub. Field boundaries are typically composed of species poor intact hedges and species poor hedges with trees. Habitats present with higher biodiversity value include semi-natural and plantation woodlands, scrub, poor semi-improved grassland, water bodies and isolated trees.

6.1.1.5 Key features for protected and notable species have been identified within the Hornsea Four EP1HS study area for a range of protected species and are summarised in [Table 11](#). Further surveys have been proposed to be undertaken within the appropriate survey periods during 2019 in relation to these species.

Table 11: Summary of key features for protected and notable species identified during the updated EP1HS.

Species	Summary of key findings
Water vole	37 ditches recorded, further surveys to be undertaken in May and August 2019 (two survey visits)
Otter	11 ditches recorded, further presence/absence surveys to be undertaken in May and August 2019 (two survey visits)
Water vole and Otter	A further 36 water bodies identified using aerial imagery. To be assessed for their suitability for water voles and/or otters once landowner access has been granted. This assessment (and where confirmed as being optimal habitat would be subsequently surveyed) will be undertaken as part of the water vole and otter surveys in 2019.
Bats	46 linear features of moderate/high suitability – these features will be subject to monthly bat activity transect and static detector surveys between May and October 2019. 31 features of moderate/high suitability for roosting bats – these features will be subject to monthly emergence/re-entry surveys between May and October 2019 An additional 14 features identified for commuting/foraging bats and an additional 15 features identified for roosting bats using aerial imagery. These features will be visited prior to the bat survey season to assess their suitability. A further 28 features assessed as providing low suitability for roosting bats and a further 45 features assessed as providing low suitability for commuting/foraging bats will not require further survey effort, however mitigations will be required, as stated in Section 5.4 .
GCN	85 ponds identified, to be subject to HSI assessment and eDNA survey (where landowner access permission is granted) between mid-April and end-June 2019.
Reptiles	A total of 32 areas noted as providing suitable habitat, including potential refugia. Although no specific reptile surveys are to be undertaken, appropriate mitigation will be required including adherence to a reptile PMoW to ensure legal compliance during construction works.

7 References

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Appendix A – Target Notes



The rows in [Table 12](#) that are greyed-out correspond to features that were recorded during the updated EP1HS. However, following further refinement of the Hornsea Four PEIR boundary, these are now located outside of the Hornsea Four EP1HS study area but have been included for completeness. These features have not been included for future surveys or assessment.

Table 12: Target Notes collected during the updated EP1HS in February 2019 (to be read in conjunction with Figure 11 - 35).

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN1	Wide dyke/beck with vertical grassy banks, recently trimmed. Common reed present, no in channel vegetation. Static flow, approximately 8-10m wide, silted with poor water quality. Potential water vole habitat Potential otter habitat	N: 456699.690876 E: 512410.169303	
TN2	Arable field (JNCC: J.1) – winter cover.	N: 456724.381968 E: 511760.654969	n/a
TN3	Pond, situated within gardens of house.	N: 456798.778251 E: 511372.940496	n/a
TN4	Tree lined road. Moderate suitability for commuting and foraging bats.	N: 456722.171929 E: 511456.919219	n/a
TN5	Species poor hedge with trees (JNCC J2.3.2) consisting of hawthorn, bramble, sycamore and ash. Moderate suitability for commuting and foraging bats.	N: 456679.701354 E: 511546.514481	
TN6	Horse chestnut with small holes visible. Low suitability for roosting bats.	N: 456665.87381 E: 511477.74587	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN7	Horse chestnut with small holes visible. Low suitability for roosting bats.	N: 456654.527613 E: 511487.598732	
TN8	Small patch of semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of horse chestnut, sycamore, hawthorn, bramble, ivy. Fallen branches and dead roots present.	N: 456639.713685 E: 511609.201496	
TN9	Large ash with multiple cracks, holes and broken limbs. High suitability for roosting bats.	N: 456637.802184 E: 511379.027426	
TN10	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, bramble, ivy, nettle, thistle and cleavers. Dry ditch present. Moderate suitability for commuting and foraging bats.	N: 456631.618764 E: 511584.370577	

Hornsea 4

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN11	<p>Large sycamore with broken limb.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456622.60661 E: 511449.014536</p>	
TN12	<p>Large, ivy clad sycamore with limited potential roost features (PRFs) visible from ground. Opportunistic roosting potential only.</p> <p>Low suitability for roosting bats.</p>	<p>N: 456619.072235 E: 511593.914512</p>	
TN13	<p>Poor semi-improved grassland (JNCC: B6) Habitat consisting of ridge and furrow features throughout, large mature trees, fallen branches and dense scrub sections with gorse and bramble. Optimal reptile mosaic habitat with features for basking, foraging and hibernating.</p>	<p>N: 456613.462735 E: 511330.787742</p>	

Hornsea 4

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail	
TN14	Line of trees (hawthorn and ash) adjacent to waterlogged depression in field.	N: 456611.348241 E: 511388.034605		
TN15	Large sycamore with broken limbs and visible holes. Moderate suitability for roosting bats.	N: 456604.616169 E: 511371.751358		
TN16	Large sycamore with broken limbs. Moderate suitability for roosting bats.	British National Grid: N: 456597.142015 E: 511358.968191		

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN17	<p>Large ash tree with holes and broken limbs.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456584.567306</p> <p>E: 511403.813807</p>	
TN18	<p>Horse chestnut situated in middle of improved grassland, used for grazing, no visible cracks or holes disconnected from wider habitat.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 456579.848133</p> <p>E: 511497.355364</p>	
TN19	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble. Hedge recently cut back.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 456573.825866</p> <p>E: 511644.412625</p>	
TN20	<p>Large horse chestnut tree with cracks and holes.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456555.606763</p> <p>E: 511264.76283</p>	

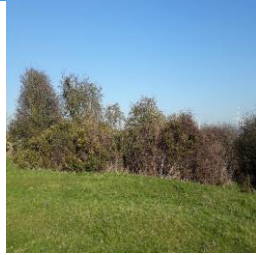


Hornsea 4



Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN21	Dead, hollowed ash tree. Negligible suitability for roosting bats.	N: 456550.337557 E: 511250.4805	
TN22	Poor semi-improved grassland (JNCC: B6).	N: 456537.692132 E: 511516.349378	
TN23	Fallen tree offering potential reptile hibernation options.	N: 456536.412443 E: 511422.674814	
TN24	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, fenced, thick dense scrub vegetation in sections. Moderate suitability for commuting and foraging bats.	N: 456527.452633 E: 511436.013999	




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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN25	<p>Large ash tree with fallen limbs and cracks present.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456508.505591 E: 511342.442691</p>	
TN26	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, beech, bramble, common hogweed and nettle.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 456485.092974 E: 511297.578535</p>	
TN27	<p>Large sycamore with broken limbs and cracks.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456484.195011 E: 511359.76192</p>	
TN28	<p>Large ash situated in hedge, with several visible holes and broken limbs.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 456478.429915 E: 512003.643247</p>	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN29	Scrub (JNCC: A2.1) consisting of gorse, bramble, nettle and hawthorn.	N: 456447.273744 E: 511388.671378	
TN30	Large ash situated in hedge with no visible holes. Negligible suitability for roosting bats.	N: 456420.867615 E: 512007.161631	
TN31	Arable field (JNCC: J.1) – winter cover.	N: 456411.87895 E: 511854.724124	n/a
TN32	Species rich hedge with trees (JNCC: J2.3.1) consisting of ash, sycamore, hawthorn, ivy, bramble and a dry ditch. Moderate suitability for commuting and foraging bats.	N: 456394.560926 E: 512012.207635	
TN33	Arable field (JNCC: J.1) potential set aside, some cropped corn, thistle and other ruderal species present.	N: 456392.411157 E: 510342.978078	n/a

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN34	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, recently trimmed, fenced.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 456376.717476 E: 510259.110681</p>	
TN35	<p>Three large trees (sycamore and ash) with multiple cracks, holes and broken limbs. Bird scarer present immediately adjacent, depending on length of presence may deter roosting bats.</p> <p>Low suitability for roosting bats.</p>	<p>N: 456376.530973 E: 512012.302866</p>	
TN36	<p>Arable (JNCC: J1.1) – winter cover.</p>	<p>N: 456371.221771 E: 511062.235609</p>	n/a
TN37	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of blackthorn, hawthorn, ash, sycamore. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 456367.969072 E: 510453.898886</p>	
TN38	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 456261.549976 E: 510269.786535</p>	n/a
TN39	<p>Improved grassland (JNCC: B4) potentially used for grazing.</p>	<p>N: 456248.786335 E: 510288.364521</p>	n/a
TN40	<p>Arable (JNCC: J1.1) – winter cover, surveyed from adjacent land plots.</p>	<p>N: 456237.755469 E: 509927.994807</p>	n/a
TN41	<p>Arable (JNCC: J1.1) – winter cover.</p>	<p>N: 456164.798309 E: 510295.564742</p>	n/a





Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN42	Narrow ditch with heavily vegetated grassy banks, partially dry, common reed present. Potential water vole habitat.	N: 456027.072821 E: 509716.957266	
TN43	Arable (JNCC: J1.1) – in crop.	N: 455974.331747 E: 509388.008665	n/a
TN44	Skylark observed/heard in song flight over field.	N: 455953.561269 E: 509252.007798	n/a
TN45	Partially dry ditch with steep earth banks recently dug and cleared. Hedge removed on one bank. Potential water vole habitat.	N: 455876.962784 E: 509559.708434	
TN46	Arable (JNCC: J1.1) – in crop.	N: 455656.53246 E: 509440.695798	n/a
TN47	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, blackthorn, holly. Mostly newly planted approximately 1-2 seasons growth. Moderate suitability for commuting and foraging bats.	N: 455656.034984 E: 509432.819502	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN48	Improved grassland (JNCC: B4) Horses grazing, electric fencing present.	N: 455524.014173 E: 509003.246868	
TN49	Species poor defunct hedgerow (JNCC: J2.2.2) consisting of hawthorn with large gaps. Low suitability for commuting and foraging bats.	N: 455486.054942 E: 509120.314484	n/a
TN50	Scrub (JNCC: A2.1) consisting of scattered trees, mostly semi mature, hawthorn and sycamore.	N: 455484.895692 E: 508913.135979	
TN51	Large, mature sycamore with holes visible. Moderate suitability for roosting bats.	N: 455480.816057 E: 508916.597284	







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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN52	<p>Shallow ditch, recently dug with low water levels.</p> <p>Potential water vole habitat.</p>	<p>N: 455454.78961 E: 508624.106636</p>	
TN53	<p>Wide ditch, slow flowing with steep grassy banks in sections, silty, common reed present, defunct hawthorn hedge on one bank. Forms good connecting habitat for commuting/foraging bats in surrounding area.</p> <p>Moderate suitability for commuting and foraging bats. Potential water vole habitat. Potential otter habitat</p>	<p>N: 455449.237175 E: 509131.66133</p>	
TN54	<p>Wide ditch/dyke with grassy banks, recently trimmed.</p> <p>Potential water vole habitat. Potential otter habitat</p>	<p>N: 455434.258159 E: 508607.489074</p>	
TN55	<p>Sycamore on edge of access road, one small hole visible from ground.</p> <p>Low suitability for roosting bats.</p>	<p>N: 455430.451253 E: 508933.335268</p>	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN56	<p>Large mature ash with limited visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 455397.125097 E: 508943.111037</p>	
TN57	<p>Arable (JNCC: J1.1) – winter cover.</p>	<p>N: 455381.147696 E: 509046.363144</p>	n/a
TN58	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, ash and sycamore. Hedge looks to be part removed/cut back.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 455376.519541 E: 508951.512824</p>	 
TN59	<p>Arable (JNCC: J1.1) – part cropped, part winter cover with wide grassy margins.</p>	<p>N: 455352.031095 E: 508781.791847</p>	n/a
TN60	<p>Drainage ditch c3m wide, 0.5m deep, steep grassy banks, moderate flow, silted, common reed and glyceria, occasional hawthorn.</p> <p>Potential water vole habitat.</p> <p>Potential otter habitat</p>	<p>N: 455301.763915 E: 508624.494831</p>	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN61	Wide drainage ditch with steep grassy banks, slow flowing, sandy/silty bed. Approximately 8m wide, 0.5m depth. Potential water vole habitat. Potential otter habitat	N: 454290.979789 E: 507545.828343	 
TN62	Wide river with sloping grassy banks, common reed, glyceria, occasional hawthorn. Approximately 15m wide, slow flowing. Potential water vole habitat. Moderate suitability for commuting and foraging bats. Potential otter habitat	N: 454282.987838 E: 507463.020267	
TN63	Arable (JNCC: J1.1) – winter cover.	N: 454046.03437 E: 507044.619468	n/a
TN64	Dry ditch with scattered hawthorn present.	N: 453735.493745 E: 506891.462246	 
TN65	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, recently trimmed with large gaps. Low suitability for commuting and foraging bats.	N: 453615.312946 E: 506706.766228	





Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN66	Arable (JNCC: J1.1) – winter cover.	N: 453569.01529 E: 506524.284774	n/a
TN67	Arable (JNCC: J1.1) – ploughed field.	N: 453475.826547 E: 506901.440599	n/a
TN68	Species poor defunct hedge (JNCC: J2.2.2) boundary formed of individual hawthorn. Negligible suitability for commuting and foraging habitats.	N: 453386.085049 E: 506771.234039	
TN69	Arable (JNCC: J1.1) – winter cover.	N: 453221.912273 E: 506576.33077	n/a
TN70	Wide drainage ditch (approximately 5m), trapezoid cross section with steep, heavily vegetated, grassy banks. Evidence of slumping. Potential water vole habitat. Potential otter habitat	N: 452914.78405 E: 506579.118211	
TN71	Poor semi-improved grassland (JNCC: B6) grassland strip between river and arable fields, longer sward on river embankments with scrub vegetation present such as bramble, nettle and broad-leaved dock.	N: 452911.291565 E: 506546.652885	n/a
TN72	Drainage ditch, approximately 2m wide, heavily vegetated sloping banks, common reed, common hogweed, broad leaved dock and nettle. Potential water vole habitat.	N: 452893.559821 E: 506672.440101	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN73	<p>Wide, slow flowing chalk stream/river, approximately 20m wide with reed beds on both banks. Scattered hawthorn present and grassy embankments. Anecdotal evidence of otter use</p> <p>Potential water vole habitat. High suitability for commuting and foraging bats. Potential otter habitat</p>	N: 452892.105413 E: 506623.418896	
TN74	<p>Shed made from prefabricated steel, lots of gaps but potentially too hot/cold for roosting bats.</p> <p>Negligible suitability for roosting bats.</p>	N: 452875.72803 E: 506542.553559	
TN75	<p>Poor semi-improved grassland (JNCC: B6) mostly short sward, sections of scrub with teasel, thistle, hawthorn and bramble.</p>	N: 452873.595412 E: 506510.769552	
TN76	<p>Arable (JNCC: J1.1) – winter cover.</p>	N: 452538.218345 E: 506290.088592	n/a
TN77	<p>Scrub (JNCC: A2.1) Small area of scrub with hawthorn, bramble and common hogweed.</p>	N: 452160.900657 E: 506177.946331	
TN78	<p>Arable (JNCC: J1.1) – ploughed field.</p>	N: 452152.240075 E: 505933.907307	n/a
TN79	<p>Scrub (JNCC: A2.1) Small area of scrub with hawthorn, bramble and common hogweed.</p>	N: 452077.0847 E: 506225.422484	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN80	Hawthorn with bird nest.	N: 451976.864813 E: 506186.144706	
TN81	Large mature ash tree adjacent to ditch with some small visible holes, however disconnected from wider habitat. Negligible suitability for roosting bats.	N: 451956.883885 E: 506030.915839	
TN82	Ditch with steep grassy banks approximately 1-3m wide, static c30cm depth. Species present include water cress, common reed, occasional hawthorn and bramble. Potential water vole habitat.	N: 451950.499682 E: 505997.148361	
TN83	Arable field (JNCC: J1.1) – ploughed field.	N: 451798.480956 E: 505981.508444	n/a
TN84	Ditch with steep grassy banks, approximately 3-5m wide and 0.5m deep, sandy/silty bed, slow flow, no in channel vegetation. Potential water vole habitat. Moderate potential for commuting and foraging bats	N: 451627.856786 E: 506004.560688	



Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN85	<p>Species rich hedge with trees (JNCC: J2.3.1) Mainly consisting of young goat willow, ash, bramble, hogweed, trees immature, some newly planted.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 451624.813906 E: 506008.143517</p>	
TN86	<p>Ditch with steep earth banks, recently cleared, 3m wide, silty 30cm water depth, slow flowing.</p> <p>Potential water vole habitat.</p>	<p>N: 451562.326899 E: 505865.359507</p>	
TN87	<p>Arable field (JNCC: J1.1) – part winter cover, part ploughed.</p>	<p>N: 451179.416468 E: 505950.606353</p>	n/a
TN88	<p>Arable field (JNCC: J1.1) – in crop but cut back.</p>	<p>N: 450900.514854 E: 505476.043764</p>	n/a
TN89	<p>Species rich hedge with trees (JNCC: J2.3.1) boundary formed of individual immature goat willow and ash with broad leaf dock, thistle and common hogweed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 450833.6675 E: 505663.829383</p>	
TN90	<p>Arable field (JNCC: J1.1) – part cropped but also used for cattle grazing, electric fencing surrounding entire field.</p>	<p>N: 450750.555112 E: 505560.698269</p>	n/a

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN91	<p>Wide dyke, approximately 5-10m wide with steep grassy banks. Slow flowing approximately 0.5-1m deep. Grass well established, some evidence of localised erosion. Bed consists of sand and silt, no in channel vegetation, occasional hawthorn o bank, common hogweed and cow parsley also present.</p> <p>Potential water vole habitat. Potential otter habitat Moderate suitability for commuting and foraging bats.</p>	<p>N: 450642.366784 E: 505526.393565</p>	
TN92	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 450284.842965 E: 505543.908633</p>	n/a
TN93	<p>Species poor defunct hedge (JNCC: J2.2.2) solely consisting of hawthorn.</p> <p>Negligible suitability for commuting and foraging bats.</p>	<p>N: 450189.977011 E: 505392.34426</p>	n/a
TN94	<p>Species poor defunct hedge (JNCC: J2.2.2) solely consisting of hawthorn.</p> <p>Negligible suitability for commuting and foraging bats.</p>	<p>N: 450027.91257 E: 505364.689895</p>	n/a
TN95	<p>Ditch with steep, densely vegetated banks, bramble, common reed, broad leaved dock, defunct hawthorn hedge on one side, poor water quality, sandy silty bed, nearly dry.</p> <p>Potential water vole habitat.</p>	<p>N: 448948.108413 E: 504523.526264</p>	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN96	<p>Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, one young ash with negligible bat roost suitability. Large gaps with occasional hawthorn present.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 448942.533807 E: 504573.407232</p>	
TN97	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 448875.634361 E: 504424.592674</p>	
TN98	<p>Poor semi-improved grassland (JNCC: B6) consisting of short sward grasses potentially used for grazing. White and red clover, thistle and dandelion also present.</p>	<p>N: 448841.940912 E: 504526.551576</p>	
TN99	<p>Large, mature oak with limited visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 448736.055373 E: 504396.63142</p>	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN100	Scrub (JNCC: A2.1) small area of scrub, grasses and bramble adjacent to turbine and dyke.	N: 448724.832932 E: 504392.245789	
TN101	Wide dyke with steep grassy banks, glyceria present, silty approximately 5m wide. Potential water vole habitat. Potential otter habitat	N: 448711.416324 E: 504539.864841	
TN102	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn with one mature oak adjacent. Low suitability for commuting and foraging bats.	N: 448708.846968 E: 504334.492145	
TN103	Species poor intact hedge (JCC: J2.1.2) consisting of hawthorn, bramble and blackthorn. Moderate suitability for commuting and foraging bats.	N: 448389.075248 E: 503992.43929	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN104	Ditch with steep grassy banks, static flow with a sand and silt bed. Outfalls of field drains present, no in channel vegetation. Potential water vole habitat.	N: 448388.538731 E: 504007.565598	
TN105	Ditch with steep grassy banks adjacent to road, potential for runoff pollution. Static flow with silty present, approximately 15cm deep. Common reed and bramble present. Potential water vole habitat.	N: 448381.598003 E: 503975.722875	
TN106	Ditch with steep grassy banks, static flow with sandy bed, approximately 30cm deep. No in channel vegetation. Occasional bramble and hawthorn on one bank. Potential water vole habitat.	N: 448381.520381 E: 504120.30269	
TN107	Arable field (JNCC: J1.1) – ploughed field.	N: 448219.905819 E: 504150.076863	n/a.
TN108	Arable field (JNCC: J1.1) – ploughed field.	N: 448160.676147 E: 503905.786804	n/a.
TN109	Group of young trees within survey buffer are mostly young with no visible PRFs. Low suitability for roosting bats.	N: 445462.103942 E: 500529.027434	n/a.



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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN110	<p>Mature oak with visible holes, situated adjacent to a stream, connected to woodland and scrub habitat.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 445451.123138 E: 500410.481485</p>	
TN111	<p>Mixed plantation woodland (JNCC: A1.3.2) consisting of a mixture of pines, oak, sycamore, and ash. Undergrowth consisting of dense bramble in places.</p>	<p>N: 445440.273961 E: 500648.724</p>	
TN112	<p>Scrub (JNCC: A2.1) consisting of dense bramble and hawthorn along stream banks with scattered trees.</p>	<p>N: 445425.170261 E: 500372.28914</p>	





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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN113	Poor semi-improved grassland (JNCC: B6) Small area of grassland adjacent to woodland and arable field. Relatively short sward, broad leaved dock and nettle present and small wet patches with juncus spp.	N: 445419.883684 E: 500487.354237	
TN114	Stream, approximately 3m wide, slow flowing, shallow banks in places with open tree root systems, bed consisting of sandy gravel, surrounding habitat dense scrub with scattered semi mature trees. Potential water vole habitat. Potential otter habitat Moderate suitability for commuting and foraging bats.	N: 445418.699427 E: 500377.380102	
TN115	Oak with split and cracked limbs, adjacent to stream and small woodland. Moderate suitability for roosting bats.	N: 445385.203702 E: 500331.608677	
TN116	Semi-natural broadleaved woodland (JNCC: A1.1.1) Small area of mostly young and semi mature oak and sycamore.	N: 445376.535687 E: 500248.472272	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
	Low suitability for roosting bats. Moderate suitability for commuting and foraging bats.		
TN117	Arable field (JNCC: J1.1) – ploughed field.	N: 445228.903272 E: 500377.282307	n/a.
TN118	Species poor intact hedge (JNCC: J2.1.2) Consisting of hawthorn and ivy, recently trimmed. Low suitability for commuting and foraging bats.	N: 445154.231371 E: 500241.432517	
TN119	Small ephemeral pond, potentially flooded/fed from field drain, surrounded by young ash and oak trees.	N: 445115.208295 E: 500247.764661	
TN120	Ditch with steep sides, some sections with in channel vegetation, water cress, stagnant water c 15cm depth. Limited backside vegetation present as recently cleared, bramble, nettle, common hogweed and grasses present. Potential water vole habitat.	N: 445068.242506 E: 500261.779285	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN121	Arable field (JNCC: J1.1) – ploughed field.	N: 445000.037561 E: 500120.821676	n/a.
TN122	Arable field (JNCC: J1.1) – ploughed field.	N: 444875.132782 E: 500390.268442	n/a.
TN123	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, dog rose, red dead nettle, bramble and common hogweed. Recently trimmed. Low suitability for commuting and foraging bats.	N: 444800.890001 E: 500331.128516	
TN124	Arable field (JNCC: J1.1) – ploughed field.	N: 444749.593612 E: 500243.791206	n/a.
TN125	Semi-natural broadleaved woodland (JNCC: A1.1.1) Small patch of woodland consisting of hawthorn and sycamore, semi mature trees. Negligible bat roost suitability.	N: 444645.814308 E: 500411.764722	
TN126	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, some small gaps present however hedge largely intact. Low suitability for commuting and foraging bats.	N: 444635.654682 E: 500278.058752	
TN127	Arable field (JNCC: J1.1) – ploughed field.	N: 444621.278514 E: 500505.831099	n/a
TN128	Arable field (JNCC: J1.1) – winter cover.	N: 444574.387454 E: 500152.321698	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN129	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, elderberry, hawthorn and bramble. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 444534.339969 E: 500515.504454</p>	
TN130	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 444310.615338 E: 500370.883939</p>	n/a.
TN131	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of alder, blackthorn and willow. Trees all semi mature, some sections of hedge newly planted.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 444093.41755 E: 500471.500416</p>	
TN132	<p>Semi-mature oak, disconnected from wider habitat with no visible PRFs.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 442563.514192 E: 500322.399768</p>	
TN133	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 442561.666123 E: 500344.808708</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN134	Arable field (JNCC: J1.1) – winter cover.	N: 442496.376472 E: 500411.435603	n/a.
TN135	Bridge with some ivy cover, no visible cracks or holes in the brickwork. Negligible suitability for roosting bats.	N: 442399.848484 E: 500257.843868	
TN136	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Hedge recently trimmed. Low suitability for commuting and foraging bats.	N: 442399.339632 E: 500428.054007	
TN137	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, dog rose, common hogweed and bramble. Steep embankment to PrOW.	N: 442385.411607 E: 500319.661573	
TN138	Mature, ivy clad sycamore with no visible PRFs situated adjacent to road. Low suitability for roosting bats.	N: 442382.77556 E: 500249.565618	





Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN139	<p>Semi-natural broadleaved woodland (JNCC: A1.1.1) Scattered trees and scrub vegetation lining each side of footpath; hawthorn, sycamore, bramble and dog rose.</p> <p>Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats.</p>	<p>N: 442375.986828 E: 500312.963311</p>	
TN140	<p>Arable field (JNCC: J1.1) – in crop.</p>	<p>N: 442375.426681 E: 500453.711341</p>	n/a.
TN141	<p>Scrub (JNCC: A2.1) Patch of scrub adjacent to footpath and arable field, dense bramble throughout.</p>	<p>N: 442356.029236 E: 500389.285961</p>	
TN142	<p>Small copse of trees, some ivy clad, adjacent to road and arable field, limited PRFs visible from ground.</p> <p>Low suitability for roosting bats.</p>	<p>N: 442333.316426 E: 500235.496663</p>	
TN143	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 442182.649307 E: 500251.753422</p>	n/a.

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN144	<p>Steep sided, sluggish ditch, banks recently cleared. Bare earth on lower banks and bed, no in channel vegetation, bed sandy and gravel, low water level approx 5-10 cm. no evidence of pollution water clear, field drain outfalls present.</p> <p>Potential water vole habitat.</p>	<p>N: 442099.937011 E: 500355.059433</p>	
TN145	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 442072.358627 E: 500084.293844</p>	
TN146	<p>Small group of young and semi mature trees, no visible prfs, disconnected from wider habitat.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 441927.048141 E: 500190.889325</p>	
TN147	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 441699.290682 E: 500409.755851</p>	
TN148	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 441691.860665 E: 500398.549406</p>	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN149	<p>Row of young cherry trees lining road.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 441516.76233</p> <p>E: 500658.745688</p>	
TN150	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 441405.201935</p> <p>E: 500505.760216</p>	
TN151	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 441364.559845</p> <p>E: 500727.185139</p>	n/a.
TN152	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 441195.584939</p> <p>E: 500626.218423</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN153	<p>Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 440342.829024 E: 500431.638311</p>	
TN154	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 440181.883856 E: 500390.776612</p>	n/a.
TN155	<p>Arable field (JNCC: J1.1) – in crop.</p>	<p>N: 439864.103368 E: 500420.525611</p>	n/a.
TN156	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn. Recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 439762.754013 E: 500237.534439</p>	
TN157	<p>Mature oak adjacent to busy road, limited visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 439695.811675 E: 500472.561819</p>	
TN158	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of young trees lining public footpath and road.</p> <p>Negligible suitability for roosting bats.</p> <p>Negligible suitability for commuting and foraging bats.</p>	<p>N: 439692.725403 E: 500462.619134</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN159	Mature oak adjacent to busy road with limited PRFs. Low suitability for roosting bats.	N: 439677.406371 E: 500425.810621	
TN160	Two large mature oak with limited visible PRFs. Low suitability for roosting bats.	N: 439675.667831 E: 500498.092364	
TN161	Large mature oak, limited PRFs visible. Low suitability for roosting bats.	N: 439670.851121 E: 500464.179439	
TN162	Species poor intact hedge (JNCC: J2.1.2) consisting of sections of newly planted hawthorn, blackthorn and bird cherry. Low suitability for commuting and foraging bats.	N: 439669.713052 E: 500483.394149	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN163	<p>Large mature ivy clad oak with multiple cracks and holes, adjacent to busy road.</p> <p>Low suitability for roosting bats.</p>	<p>N: 439656.291369 E: 500421.580932</p>	
TN164	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 439581.326839 E: 500298.959338</p>	
TN165	<p>Arable field (JNCC: J1.1) – winter cove.</p>	<p>N: 439555.791417 E: 500605.207484</p>	n/a.
TN166	<p>Large pile of vegetated woody debris, within hedge with wide grassy margins. Reptile hibernation feature connected to commuting/foraging habitat.</p>	<p>N: 439488.978421 E: 500456.880876</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN167	Scrub (JNCC: A2.1) - dense scrub with hawthorn, bramble, nettle and common hogweed.	N: 439488.779845 E: 500469.702447	
TN168	<p>Species poor defunct hedge (JNCC: J2.2.2) consisting of isolated hawthorn with large gaps, woody debris, common hogweed and nettle.</p> <p>Negligible suitability for commuting and foraging bats.</p>	N: 439468.886713 E: 500406.396763	
TN169	Large pile of vegetated woody debris, within hedge with wide grassy margins. Reptile hibernation feature connected to foraging habitat.	N: 439455.382035 E: 500380.090743	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN170	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, connected to small woodland.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 439398.931613 E: 500676.607411</p>	
TN171	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 439030.099806 E: 500768.668633</p>	n/a.
TN172	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, adjacent to tree lined, steep scrub embankment.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 438907.164417 E: 500575.41765</p>	
TN173	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 438884.831251 E: 500408.499093</p>	n/a.
TN174	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 438877.511466 E: 500629.239162</p>	
TN175	<p>Scrub (JNCC: A2.1) - scrub and tree lined steep embankment adjacent to road consisting of hawthorn, pines and oak.</p>	<p>N: 438663.016581 E: 500689.105565</p>	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN176	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Low suitability for commuting and foraging bats</p>	<p>N: 438555.360504 E: 500650.78891</p>	
TN177	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 438541.826751 E: 500645.048094</p>	
TN178	Arable field (JNCC: J1.1) – winter cover.	<p>N: 438392.02673 E: 500704.170929</p>	n/a.
TN179	Scrub (JNCC: A2.1) - scrub and tree lined steep embankment adjacent to road consisting of hawthorn, pines and oak.	<p>N: 438276.738324 E: 500891.577634</p>	
TN180	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 438272.744411 E: 500885.59733</p>	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN181	Dry ditch (JNCC: J2.6).	N: 438253.243588 E: 500753.081228	
TN182	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed. Low suitability for commuting and foraging bats.	N: 438252.547076 E: 500751.260647	
TN183	Arable field (JNCC: J1.1) – winter cover.	N: 438112.233244 E: 500771.041863	n/a
TN184	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of mostly young oak and hazel, fenced. Negligible suitability for roosting bats.	N: 437985.440271 E: 500896.489843	
TN185	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed. Low suitability for commuting and foraging bats.	N: 437973.915547 E: 500724.11564	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN186	Poor semi-improved grassland (JNCC: B6) consisting of short sward grasses and limited herb species, potentially used for grazing, fenced.	N: 437925.133177 E: 501006.949342	
TN187	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, blackthorn and willow. Ivy, nettle and bramble also present, situated adjacent to plantation woodland. Fenced. Moderate suitability for commuting and foraging bats.	N: 437827.462543 E: 500918.677888	
TN188	Arable field (JNCC: J1.1) – winter cover.	N: 437802.293024 E: 500814.764218	n/a.
TN189	Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of mostly semi mature and young trees. Negligible suitability for roosting bats.	N: 437797.012371 E: 500942.993774	
TN190	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy, recently trimmed. Low suitability for commuting and foraging bats.	N: 437634.280337 E: 500885.542285	



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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN191	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, bramble and dog rose, fenced.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 437619.239414 E: 500895.189446</p>	
TN192	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak and ivy, fenced.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 437478.698522 E: 500998.892154</p>	
TN193	<p>Arable field (JNCC: J1.1) – in crop.</p>	<p>N: 437391.053414 E: 500758.784992</p>	n/a.
TN194	<p>Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting mainly of oak, mostly open scrub within survey buffer.</p>	<p>N: 437350.786283 E: 501077.121066</p>	
TN195	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak, bramble, thistle, broad leaved dock, common hogweed, nettle and ivy. Fenced.</p> <p>Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats.</p>	<p>N: 437316.284683 E: 500994.368143</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN196	<p>Steep sided ditch/stream with low levels of running water. Heavily vegetated banks, tree lined, dense bramble in sections, difficult to access.</p> <p>Potential water vole habitat.</p>	<p>N: 437314.572149 E: 501005.229456</p>	
TN197	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, some sections newly planted, recently trimmed.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 437060.066327 E: 501108.817212</p>	
TN198	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 437055.500851 E: 501217.253405</p>	n/a.
TN199	<p>Arable field (JNCC: J1.1) – in crop.</p>	<p>N: 436966.436259 E: 500928.546488</p>	n/a.
TN200	<p>Large mature oak with no visible cracks or holes.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 436790.005446 E: 501250.491494</p>	



Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN201	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, hazel, bramble, nettle and broad leaved dock.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 436779.965191 E: 501219.016686</p>	
TN202	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of mainly hawthorn with bramble and nettle, some sections newly planted.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 436776.363386 E: 501185.837815</p>	
TN203	<p>Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting mainly of oak with scattered pine, bramble and nettle.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 436754.512703 E: 501430.596255</p>	
TN204	Gas pipeline.	<p>N: 436752.379904 E: 501177.689213</p>	
TN205	Arable field (JNCC: J1.1) – in crop.	<p>N: 436640.567898 E: 501171.058915</p>	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN206	<p>Species rich hedge with trees (JNCC: J2.3.1) consisting of hawthorn, willow, hazel, ash and oak. Connected to woodland.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 436572.370342 E: 501108.488789</p>	
TN207	<p>Mature oak in hedge with splits and cracks.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 436563.27376 E: 501249.554312</p>	
TN208	<p>Mature oak in hedge with visible cracks and holes.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 436561.458109 E: 501161.626689</p>	
TN209	<p>Mature oak with split limbs, in hedge connected to woodland.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 436541.828264 E: 501070.033508</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN210	Dead ash tree in hedge, limited PRFs visible from ground. Low suitability for roosting bats.	N: 436478.775364 E: 501041.19555	
TN211	Arable field (JNCC: J1.1) – in crop.	N: 436446.428939 E: 501209.950543	n/a.
TN212	Arable field (JNCC: J1.1) – in crop.	N: 436421.023969 E: 502767.713014	n/a
TN213	Species rich hedge with trees (JNCC: J2.3.1) consisting of hazel, bramble, blackthorn, ivy and elm. Moderate suitability for commuting and foraging bats.	N: 436413.616293 E: 501031.844278	
TN214	Species poor intact hedge (JNCC: J2.1.2) consisting of mainly hawthorn with some hazel, recently trimmed, connected to woodland. Moderate suitability for commuting and foraging bats.	N: 436335.926202 E: 501253.370505	
TN215	Two mature ivy clad oak on edge of woodland. Moderate suitability for roosting bats.	N: 436324.731236 E: 502944.848896	
TN216	Mature oak with visible cracks and holes, within garden of house with no access. Moderate suitability for roosting bats.	N: 436304.273777 E: 502841.223573	
TN217	Mature oak with visible cracks and holes and broken limbs. Moderate suitability for roosting bats.	N: 436226.270803 E: 502963.700933	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN218	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, sycamore and ash, connecting two areas of woodland and grassland. Moderate suitability for commuting and foraging bats.	N: 436197.213198 E: 502599.23307	
TN219	Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of ash, oak, hawthorn and bramble.	N: 436179.901872 E: 501466.353683	
TN220	Arable field (JNCC: J1.1) – winter cover.	N: 436138.38043 E: 503248.605313	n/a.
TN221	Species rich hedge with trees (JNCC: J2.3.1) consisting of hazel, hawthorn, willow, ivy, bramble and field maple. Rubbish present in sections with road layby. Moderate suitability for commuting and foraging bats.	N: 436123.238135 E: 501244.185596	
TN222	Arable field (JNCC: J1.1) – ploughed field.	N: 436110.070809 E: 501321.321036	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN223	<p>Ditch on edge of woodland, steep banks, silted and stagnant with limited in channel vegetation. Bankside vegetation consisting of bramble, ladies mantle and nettle.</p> <p>Potential water vole habitat.</p>	<p>N: 436103.281705 E: 502995.311453</p>	
TN224	<p>Broad-leaved plantation woodland (JNCC: A1.1.2) consisting of sycamore with some alder, hazel, oak, ivy, field maple, hawthorn, willow, bramble and nettle.</p> <p>Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats.</p>	<p>N: 436099.223144 E: 502924.502335</p>	
TN225	<p>Poor semi-improved grassland (JNCC: B6) consisting of relatively short sward, limited herbs present.</p>	<p>N: 436085.902689 E: 502801.989174</p>	
TN226	<p>Coniferous plantation woodland (JNCC: A1.2.2) consisting of pines with approximately 2-3 ash trees.</p> <p>Low suitability for roosting bats. Moderate suitability for commuting and foraging bats</p>	<p>N: 436046.982524 E: 502722.242783</p>	
TN227	<p>Large mature oak on edge of woodland, relic ivy branches and lots of visible cracks, holes and dead/broken limbs.</p> <p>High suitability for roosting bats.</p>	<p>N: 436026.084418 E: 501380.24799</p>	
TN228	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 436015.673224 E: 502526.359067</p>	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN229	Large mature ivy clad oak within hedge, close to woodland. High suitability for roosting bats.	N: 435994.387881 E: 501276.645348	
TN230	Group of 4 mature, possibly veteran, oak trees within semi improved grassland. high trunk density with cracks and holes. High suitability for roosting bats.	N: 435963.940058 E: 502835.610364	
TN231	Area of hardstanding and gravel with soil heaps and rubbish, offering potential reptile hibernacula.	N: 435931.165379 E: 503294.147642	
TN232	Potentially polluted ditch, silt and foam present. Some sections fast flowing, culverted, partly vegetated. Potential water vole habitat.	N: 435915.167654 E: 503335.405812	
TN233	Three semi mature oak adjacent to hedge. Negligible suitability for roosting bats.	N: 435872.436994 E: 501302.188409	
TN234	Species rich hedge with trees (JNCC: J2.3.1) consisting of bramble, hawthorn, willow, elderberry, alder, ivy and blackthorn. Moderate suitability for commuting and foraging bats.	N: 435862.642783 E: 503357.742603	
TN235	Arable field (JNCC: J1.1) – winter cover.	N: 435812.210661 E: 502852.019739	n/a.



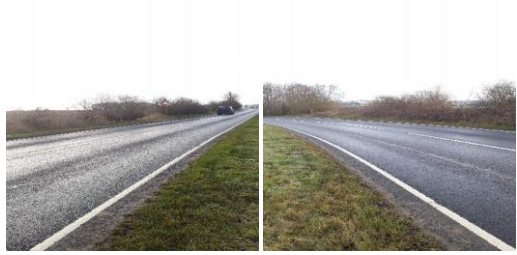
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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN236	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of mostly hawthorn, large sections newly planted (approximately 1-2 seasons growth).</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 435800.993699 E: 501462.059422</p>	
TN237	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy, recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 435799.221264 E: 501348.553734</p>	
TN238	<p>Partially dry ditch with shallow banks, scattered shrubs in places, mostly hawthorn, no in channel vegetation. Limited berm for burrowing.</p> <p>Potential water vole habitat.</p>	<p>N: 435760.34246 E: 502682.193745</p>	
TN239	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 435721.163731 E: 501526.132433</p>	n/a.
TN240	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and bramble, adjacent to busy road.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 435706.496539 E: 502249.048413</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN241	<p>Oak tree with some cracks and holes however isolated and exposed.</p> <p>Low suitability for roosting bats.</p>	<p>N: 435702.699766 E: 502334.323707</p>	
TN242	<p>Arable field (JNCC: J1.1) – ploughed field.</p>	<p>N: 435661.442994 E: 503491.616475</p>	<p>n/a.</p>
TN243	<p>Mixed plantation woodland (JNCC: A1.3.2) consisting of sycamore, sweet chestnut, oak and pine. Limited undergrowth, leaf litter, bramble and pheasant feeders present.</p> <p>Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats</p>	<p>N: 435650.012225 E: 503152.819933</p>	
TN244	<p>Mature oak, ivy clad, limited PRFs visible.</p> <p>Low suitability for roosting bats.</p>	<p>N: 435633.339704 E: 501593.269839</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN245	<p>Narrow v shaped with low water levels. Steep vegetated banks, bramble and common hogweed present. Potentially dry in summer months.</p> <p>Potential water vole habitat.</p>	<p>N: 435632.09144 E: 503337.384382</p>	
TN246	<p>Ditch approximately 1m wide with sloping banks consisting of grasses. Algae present, silty/sandy bed, woody debris, stagnant water c20cm deep, no in channel vegetation. Potentially dry over summer months.</p> <p>Potential water vole habitat.</p>	<p>N: 435625.763241 E: 501560.168827</p>	
TN247	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and 1 mature oak. Hedge recently trimmed.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 435622.987435 E: 501559.67702</p>	
TN248	<p>Two dead ash trees with large holes and crevices visible.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 435614.931898 E: 501503.510913</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN249	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small woodland, fenced, sections within survey buffer are open transitional with newly planted shrubs and one mature oak. Negligible suitability for roosting bats.	N: 435601.592952 E: 501407.487547	
TN250	Poor semi-improved grassland (JNCC: B6) - small area of grassland within arable field, with section of tall ruderal vegetation adjacent to PRow, broad leaved dock dominant.	N: 435584.494811 E: 501498.075616	
TN251	Three mature ivy clad oak at edges of layby and major road. Low suitability for roosting bats.	N: 435566.235059 E: 502173.700665	
TN252	Arable field (JNCC: J1.1) – winter cover.	N: 435559.927158 E: 502499.930262	n/a.
TN253	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small area of woodland with mostly young oak and ash, signs of fly tipping and beehives (x2).	N: 435550.000836 E: 501759.852369	
TN254	Arable field (JNCC: J1.1) – ploughed field.	N: 435523.110328 E: 501995.182427	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN255	Dry ditch (JNCC: J2.6).	N: 435489.63205 E: 502419.382077	
TN256	Large mature oak in middle of arable field. Disconnected from wider habitat and close to major road. Low suitability for roosting bats.	N: 435488.790517 E: 502081.40179	
TN257	Semi open area of woodland with potential hibernacula, woodland edges with mosaic habitat for reptiles.	N: 435486.236686 E: 503262.071025	
TN258	Arable field (JNCC: J1.1) – ploughed field.	N: 435482.392888 E: 501627.982933	n/a.
TN259	Arable field (JNCC: J1.1) – ploughed field.	N: 435479.324637 E: 503807.022165	n/a.
TN260	Species poor defunct hedge (JNCC: J2.2.2) consisting of hawthorn, ash, ivy, bramble, large gaps in places. Low suitability for commuting and foraging bats.	N: 435473.370372 E: 501779.68381	
TN261	Species rich intact hedge (JNCC: J2.1.1) consisting of hawthorn, bramble, hazel, blackthorn, holly and gorse. Low suitability for commuting and foraging bats.	N: 435464.021909 E: 501763.77744	



Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN262	Semi-natural broadleaved woodland (JNCC: A1.1.1) - small area of woodland, mostly young trees. Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats	N: 435457.911348 E: 502882.486261	
TN263	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, situated adjacent to major road. Negligible suitability for commuting and foraging bats.	N: 435438.566969 E: 502157.7844	
TN264	Arable field (JNCC: J1.1) – winter cover.	N: 435417.259732 E: 503081.905498	n/a
TN265	Mature oak with some visible holes that look relatively shallow from the ground. Low suitability for roosting bats.	N: 435366.028543 E: 502767.285471	
TN266	Dead oak tree adjacent to PRoW, some cracks, holes and dead limbs, cavities look too shallow from ground level. Low suitability for roosting bats.	N: 435346.639103 E: 502720.604002	
TN267	Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of hawthorn, field maple, oak, ash, bramble and ivy. Public footpath runs through the middle. Moderate suitability for commuting and foraging bats.	N: 435336.049983 E: 502702.2468	
TN268	Arable field (JNCC: J1.1) – ploughed field.	N: 435329.694287 E: 504010.312092	n/a.




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN269	<p>Ditch with vertical banks, recently cleared, suspended sediments, no in channel veg, silty/sandy bed, slow flowing, 30cm deep.</p> <p>Potential water vole habitat.</p>	<p>N: 435323.74283 E: 503633.664934</p>	
TN270	<p>Mature oak with dead limbs and plenty of cracks and holes visible.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 435319.134876 E: 503308.564756</p>	
TN271	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, ivy and bramble.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 435315.357206 E: 503702.685629</p>	
TN272	<p>Pond (pond reference A63).</p>	<p>N: 435289.259689 E: 503660.608925</p>	


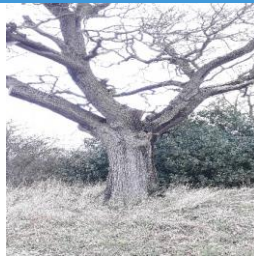

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN273	<p>Scrub (JNCC: A2.1) - small patch of scrub with scattered semi-mature trees adjacent to arable fields and PRow.</p> <p>Negligible suitability for roosting bats Moderate suitability for commuting and foraging bats.</p>	<p>N: 435285.688946 E: 503662.873816</p>	
TN274	<p>Group of mature and semi mature trees within scrub, one mature oak with moderate bat roost potential.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 435283.70784 E: 503895.502228</p>	
TN275	Semi dry pond (pond reference A64) with bulrush present.	<p>N: 435277.179998 E: 503701.505422</p>	
TN276	Arable field (JNCC: J1.1) – in crop.	<p>N: 435271.525521 E: 502736.282229</p>	n/a.

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN277	Scrub (JNCC: A2.1) - area of scrub between arable fields, mainly bramble, common hogweed, nettle, cleavers and several ivy clad trees.	N: 435265.358453 E: 503942.042661	
TN278	<p>Mature oak within scrub adjacent to stream, ivy clad with broken branches.</p> <p>Moderate suitability for roosting bats.</p>	N: 435252.277017 E: 503716.222056	
TN279	Dry ditch (JNCC: J2.6).	N: 435248.877451 E: 504042.845815	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN280	Large mature oak with visible cracks and holes. Moderate suitability for roosting bats.	N: 435246.994683 E: 503242.294049	
TN281	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed. Moderate suitability for commuting and foraging bats.	N: 435236.354833 E: 502619.942468	
TN282	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn and oak. Fenced in places with some gaps and sections of just bramble. Moderate suitability for commuting and foraging bats.	N: 435232.777898 E: 503245.144462	
TN283	Large mature oak with some visible cracks and holes. Moderate suitability for roosting bats.	N: 435224.392153 E: 502821.885254	
TN284	Large oak with lost limbs and visible cracks. Moderate suitability for roosting bats.	N: 435219.07407 E: 502786.312496	
TN285	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, recently trimmed. Moderate suitability for commuting and foraging bats.	N: 435203.447201 E: 502756.777022	
TN286	Arable field (JNCC: J1.1) – ploughed field.	N: 435201.09421 E: 504183.007713	n/a.


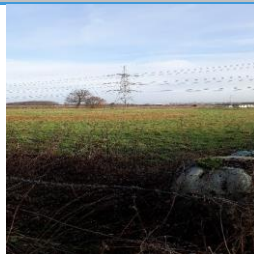
Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN287	Oak with peeling bark, limited spaces for bat access. Low suitability for roosting bats.	N: 435200.43165 E: 503745.701063	
TN288	Dry ditch (JNCC: J2.6).	N: 435195.827329 E: 502909.627241	
TN289	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, ash, oak and bramble. Moderate suitability for commuting and foraging bats.	N: 435194.70656 E: 502907.097457	
TN290	Arable field (JNCC: J1.1) – winter cover.	N: 435190.772514 E: 502526.145935	n/a.
TN291	Large mature oak with visible cracks and holes set within hedge. Moderate suitability for roosting bats.	N: 435181.002194 E: 503465.174881	
TN292	Arable field (JNCC: J1.1) – winter cover.	N: 435178.494919 E: 503033.900309	n/a.
TN293	Gas pipeline.	N: 435178.410423 E: 503269.940465	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN294	Semi-natural broadleaved woodland (JNCC: A1.1.1) - mostly immature trees, sycamore, hawthorn, ash, pines, bramble, hogweed, hazel, red dead nettle. Negligible suitability for roosting bats.	N: 435174.796499 E: 502144.636391	
TN295	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn and oak. Moderate suitability for commuting and foraging bats.	N: 435157.910515 E: 503301.00326	
TN296	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed. Moderate suitability for commuting and foraging bats.	N: 435156.43862 E: 502448.175526	
TN297	Mature oak with visible splits and cracks. Moderate suitability for roosting bats.	N: 435152.37556 E: 503350.95359	
TN298	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed. Moderate suitability for commuting and foraging bats.	N: 435151.095606 E: 502295.883036	




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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN299	Ditch with steep banks, silted, no in channel vegetation. Potential water vole habitat.	N: 435148.304068 E: 503308.815116	
TN300	Mature oak with visible cracks and splits. Moderate suitability for roosting bats.	N: 435147.108372 E: 503327.627617	
TN301	Dead oak with split limbs and visible cracks. Moderate suitability for roosting bats.	N: 435143.51518 E: 503302.664798	
TN302	Dry ditch (JNCC: J2.6) – stagnant water in places.	N: 435143.40022 E: 504052.727089	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN303	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak, bramble and willow.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 435138.716265 E: 504042.8387</p>	
TN304	<p>Arable field (JNCC: J1.1) – in crop.</p>	<p>N: 435134.764557 E: 502293.526185</p>	n/a.
TN305	<p>Semi-natural broadleaved woodland (JNCC: A1.1.1) – small patch of woodland, mostly open scrub with scattered mature trees, one dead, adjacent to ditch and arable fields. Thistle, broad leaved dock, bramble, hawthorn, nettle and oak present.</p>	<p>N: 435131.959666 E: 503291.630102</p>	
TN306	<p>Mature oak with splits and cracks.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 435123.432228 E: 503264.755298</p>	
TN307	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of elderberry, blackthorn, ivy, oak, bramble, hogweed, nettle and cow parsley.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 435107.745994 E: 503654.509013</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN308	Barn with collapsed roof, tiled with some cracks and crevices for access. Moderate suitability for roosting bats.	N: 435107.7015 E: 502609.023747	
TN309	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn and ivy. Moderate suitability for commuting and foraging bats.	N: 435107.208242 E: 502171.592377	
TN310	Mature, partly ivy clad, oak with splits and cracks. Moderate suitability for roosting bats.	N: 435089.596824 E: 503161.667611	
TN311	Arable field (JNCC: J1.1) – ploughed field.	N: 435088.723333 E: 502789.27441	n/a.
TN312	Scrub (JNCC: A2.1) consisting of dense bramble with some scattered trees around edges.	N: 435070.35887 E: 502146.575086	
TN313	Improved grassland (JNCC: B4) – horses present.	N: 435067.909199 E: 504233.97581	
TN314	Large mature oak, partially ivy clad, some cracks and holes visible. Moderate suitability for roosting bats.	N: 435060.885106 E: 502157.492898	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN315	<p>Mature, ivy clad oak in hedge, limited view from ground however some cracks present.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 435057.408157 E: 503600.193107</p>	
TN316	Gas pipeline.	<p>N: 435049.298072 E: 502988.411064</p>	
TN317	Arable field (JNCC: J1.1) – winter cover.	<p>N: 435033.190396 E: 503877.479287</p>	
TN318	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn with some ivy, recently trimmed.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 435019.593722 E: 502320.920206</p>	
TN319	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, nettle, bramble, common hogweed and thistle. Fenced, rabbit holes present.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 435017.743213 E: 504260.63095</p>	
TN320	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 434987.820395 E: 502483.012456</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN321	Dead oak with multiple cracks, holes and dead branches. High suitability for roosting bats.	N: 434967.727661 E: 504168.265723	
TN322	Arable field (JNCC: J1.1) – ploughed field.	N: 434965.758776 E: 503322.542757	n/a.
TN323	Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced. Moderate suitability for commuting and foraging bats.	N: 434960.704702 E: 504301.798337	
TN324	Pond (pond reference – A71).	N: 434959.013794 E: 503608.396923	
TN325	Scrub (JNCC: A2.1) – small area of scrub between hedge, arable field and substation, includes access road for existing substation.	N: 434958.460241 E: 504331.021697	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN326	<p>Barns adjacent to house, some with tiled roofs with potentially accessible areas.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 434954.197706 E: 503597.994917</p>	
TN327	<p>Two ivy clad field maple with limited visible PRFs. Opportunistic roosting potential only.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434949.7032 E: 504166.909461</p>	
TN328	<p>Willow tree with no visible PRFs.</p> <p>Negligible suitability for roosting bats.</p>	<p>N: 434946.821788 E: 504162.471001</p>	
TN329	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, recently trimmed.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 434937.469486 E: 502584.085398</p>	




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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN330	<p>Mature, ivy clad sycamore tree with limited visible PRFs. Opportunistic potential only.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434911.631018 E: 504123.279863</p>	
TN331	Improved grassland (JNCC: B4) - house, gardens and paddocks, used for grazing, electric fences and livestock shelters present.	<p>N: 434908.594295 E: 503593.083003</p>	
TN332	Arable field (JNCC: J1.1) – in crop.	<p>N: 434904.262564 E: 502140.401508</p>	n/a.

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN333	<p>Three mature oak with limited visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434896.234189 E: 503650.411199</p>	
TN334	<p>Arable field (JNCC: J1.1) – winter cover.</p>	<p>N: 434886.7073 E: 504210.960485</p>	n/a.
TN335	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, some small gaps present.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 434882.692017 E: 502164.986597</p>	
TN336	<p>Scrub (JNCC: A2.1) – consisting of hawthorn and blackthorn, dense bramble, nettle, broad leaved dock and thistle. Fenced.</p>	<p>N: 434876.307214 E: 502373.801485</p>	




Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN337	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of blackthorn, hawthorn, holly and oak, defunct in places.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 434866.401962 E: 503848.95865</p>	
TN338	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, fenced.</p> <p>Low suitability for commuting and foraging bats.</p>	<p>N: 434864.46499 E: 504371.074394</p>	
TN339	<p>Ditch with steep banks, slow flowing with no in channel vegetation and low water levels, silted.</p> <p>Potential water vole habitat.</p>	<p>N: 434863.300003 E: 503866.232725</p>	
TN340	<p>Mature oak with no visible cracks and holes.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434856.444232 E: 502454.064399</p>	
TN341	<p>Several ivy clad oak and ash (approximately 10 trees) within woodland.</p>	<p>N: 434852.73334 E: 502207.825644</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
	Moderate suitability for roosting bats.		
TN342	<p>Three mature trees (oak and ash) in hedgerow, ivy clad, some PRFs visible.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 434847.702692 E: 503809.081257</p>	
TN343	<p>Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, crab apple and bramble, large gaps.</p> <p>Negligible suitability for roosting bats.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 434829.060001 E: 502702.874802</p>	
TN344	<p>Group of six mature oak trees, smooth bark, limited PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434820.616671 E: 503636.284988</p>	



Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN345	Small section of scrub with tree stumps present for potential reptile hibernacula and pond (pond A72).	N: 434818.973801 E: 503793.464586	
TN346	Scrub (JNCC: A2.1) – scrub with scattered trees, negligible bat roost throughout, several passerine bird calls heard (carrion crow).	N: 434812.893019 E: 503787.171293	
TN347	Semi dry ditch, with no bankside or in channel vegetation. Some silty standing water in places. Potential water vole habitat.	N: 434811.665193 E: 503053.024112	
TN348	Pond (pond reference – A72).	N: 434810.58577 E: 503800.019908	
TN349	Arable field (JNCC: J1.1) – winter cover.	N: 434808.308396 E: 504296.081511	
TN350	Species poor hedge with trees (JNCC: J2.3.2) consisting of oak, ash, hawthorn, blackthorn, bramble. Some large gaps. Negligible suitability for roosting bats. Moderate suitability for commuting and foraging bats.	N: 434807.859638 E: 503052.467984	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN351	<p>Species poor intact hedge (JNCC: J2.1.2) consisting of hawthorn, holly, ivy, elderberry and bramble.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 434804.672826 E: 503386.216936</p>	
TN352	<p>Semi-natural broadleaved woodland (JNCC: A1.1.1) consisting of oak, ash and ivy. Fallen branches present with limited undergrowth.</p>	<p>N: 434799.601776 E: 502182.425221</p>	
TN353	<p>Narrow stream between arable fields with low water levels and steep grassy banks. Partly overgrown with bramble and common hogweed, duckweed present. Rubbish present in places.</p> <p>Potential water vole habitat.</p>	<p>N: 434795.726282 E: 504161.897095</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN354	Two oaks with limited visible PRFs. Low suitability for roosting bats.	N: 434794.389561 E: 502458.166903	
TN355	Arable field (JNCC: J1.1) – in crop.	N: 434777.110927 E: 503956.507272	n/a.
TN356	Arable field (JNCC: J1.1) – ploughed field.	N: 434759.436259 E: 502621.547823	n/a.
TN357	Two mature oak trees that are isolated from wider habitat as situated in middle of field. Low suitability for roosting bats.	N: 434756.37199 E: 502557.061559	
TN358	Arable field (JNCC: J1.1) – ploughed field.	N: 434749.895122 E: 503768.62608	n/a.
TN359	Arable field (JNCC: J1.1) – ploughed field.	N: 434737.569993 E: 503559.374399	n/a.
TN360	Species poor hedge with trees (JNCC: J2.3.2) consisting of hawthorn, oak and bramble with some small gaps. Moderate suitability for commuting and foraging bats.	N: 434729.434167 E: 502468.773216	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN361	<p>Oak with large holes due to broken limbs, holes look to have smaller cavities further in.</p> <p>Moderate suitability for roosting bats.</p>	<p>N: 434719.855628 E: 502705.575361</p>	
TN362	<p>Ditch with steep banks and low levels of water, overgrown with dense bramble.</p> <p>Potential water vole habitat.</p>	<p>N: 434696.582154 E: 503656.051441</p>	
TN363	<p>Mature oak with no visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434691.446245 E: 503906.771284</p>	
TN364	<p>Mature oak with no visible PRFs.</p> <p>Low suitability for roosting bats.</p>	<p>N: 434691.446245 E: 503906.771284</p>	

Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN365	Dry ditch (JNCC: J2.6).	N: 434678.126794 E: 503797.110846	
TN366	Arable field (JNCC: J1.1) – in crop.	N: 434671.482961 E: 504056.440019	n/a.
TN367	Mature, ivy clad oak with limited visible PRFs, however dense ivy cover present so difficult to view from ground. Moderate suitability for roosting bats.	N: 434669.133673 E: 502473.315969	
TN368	Soil heaps, woody debris and domestic waste piles.	N: 434644.035685 E: 503074.028161	

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Target Note (TN) Reference	Description	British National Grid	Photograph Thumbnail
TN369	<p>Species rich hedge with trees (JNCC: J2.3.1) consisting of hawthorn, ash, ivy, willow, hazel, bramble, nettle and holly.</p> <p>Moderate suitability for commuting and foraging bats.</p>	<p>N: 434640.639224 E: 502979.801222</p>	
TN370	<p>Ditch with steep banks, low water levels and no in channel vegetation. Slow flowing, silted water. Bankside vegetation consisting of bramble, nettle and broad-leaved dock.</p> <p>Potential water vole habitat.</p>	<p>N: 434639.579366 E: 503441.579681</p>	