HELIOS RENEWABLE ENERGY PROJECT

PINS Document Number:
EN010140/APP/6.3.8.1

Pursuant to:
APFP Regulation 5(2)(a)

Environmental Statement Appendix 8.1: Baseline Habitats and Desk Study Report

June 2024

Helios Renewable Energy Project

on behalf of Enso Green Holdings D Limited

Technical Appendix 8.1: Habitats and Desk Study

avianecology

Document Control				
Project Name:	Helios Renewable Energy Project			
Project Number:	EnsoE-517-1435			
Report Title	Technical Appendix 8.1: Habitats and Desk Study			
Issue	**Date**	**Notes**	**Prepared**	**Reviewed**
V1	09/02/2023	Draft Issue	S Turner *MSc MCIEEM Ecologist* K Love *BSc (Hons) Ecologist*	D Foy *BA (Hons) MCIEEM Principal Ecologist*
V2	29/03/2023	Draft Issue following Site boundary changes	K Love *BSc (Hons) Ecologist*	D Foy *BA (Hons) MCIEEM Principal Ecologist*
V3	16/06/2023	Draft Issue following further Site boundary changes	K Love *BSc (Hons) Ecologist*	D Foy *BA (Hons) MCIEEM Principal Ecologist*
V4	26/02/2024	Minor Amendments Update report for submission with ES Chapter	C Scott *MRes ACIEEM Senior Ecologist*	

CONTENTS

FIGURES

ANNEXES

1 INTRODUCTION

1.1 Background and Scope

1.1.1 This Technical Appendix report provides details of habitat surveys and desk-study (biological records search) commission in relation to the Proposed Development. The report provides baseline information and should be read with reference to Chapter 8 Biodiversity of the Environmental Statement to be submitted in support of the application for development consent.

1.1.2 The surveys and desk study were undertaken by Avian Ecology Ltd. on behalf of Enso Green Holdings D Limited (the Applicant), in relation to the proposed development of a renewable energy generating project; consisting of ground-mounted solar photovoltaic arrays, together with on-site energy storage, associated infrastructure and grid connection (the 'Proposed Development'), on land to the south-west of the village of Camblesforth and to the north of the village of Hirst Courtney in North Yorkshire (the 'Site'), as illustrated on **Figure 1.1 Order Limits Location Plan**.

1.2 Study Areas

1.2.1 The study area for the Proposed Development has been based on 'zones of influence' for different ecological features which may be affected by biophysical changes as a result of the Proposed Development and associated activities. The zones of influence that extend beyond the direct land-take required for the Proposed Development have been identified based upon the nature of the project and the construction, operation, and decommissioning activities to be undertaken, informed by the consultation and Scoping process and Chartered Institute of Ecology and Environmental Management ('CIEEM')[1] and Natural England guidance, where available[2].

1.3 Site Overview

1.3.1 The Site extends to 475 hectares (ha) in size and is set in a wider landscape of agricultural land, mainly arable and interspersed with occasional small blocks of woodland, with scattered small settlements, dominated in the East by Drax power station. The Site also includes a proposed underground cable corridor to the grid connection along the A645 and through a small section of golf course. The dominant habitat consists of arable fields bounded by a network of hedgerows, drainage ditches and tree lines. Scattered woodland parcels are situated within and directly adjacent to the Site.

1.3.2 The Site's location is provided in **Figure 1.1 Order Limits Location Plan** and habitat maps are presented as **Figures 8.3** – **8.7**.

[1] Chartered Institute of Ecology and Environmental Management '*Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine'*. CIEEM (2018).

[2] Where specific guidance documents do not stipulate specific required zones of influence from a proposed site, professional judgement has been applied based on the understanding of the Site and developments similar in nature, size, and scale to the Proposed Development.

2 METHODOLOGY

2.1 Desk Study

2.1.1 A desktop study was undertaken in April 2022 to identify any known existing features or species of ecological importance within the Site and surrounding environment. The desk study included a review of relevant policy and guidance and sought to identify any statutory designated sites for nature conservation through a review of the Natural England Designated Sites View[3], Joint Nature Conservation Committee ('JNCC')[4] and Multi Agency Geographic Information for the Countryside ('MAGIC')[5] websites. A 5km search radius surrounding the Site boundary was adopted for all statutory designated sites, extending to 10km for international protected sites.

2.1.2 The MAGIC website also includes details of granted European Protected Species ('EPS') mitigation licence applications. A 2km search radius around Site boundary was adopted for EPS mitigation licences.

2.1.3 Biological record data regarding non-statutory designated sites and records of protected and notable species has been requested from the North and East Yorkshire Ecological Data Centre ('NEYEDC')[6]. A 2km search radius was used from the Site boundary. Only recent records dated from 2005 onwards were used, unless historic records (pre-2005) were received from within (or within close proximity to) the Site and/or historic records were considered pertinent to the Proposed Development.

2.1.4 Reference was also made to Ordnance Survey maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area.

2.2 Field Survey

Extended Habitat Survey

2.2.1 An initial ecological constraints walkover survey was undertaken on 1st to 3rd March 2022. Following this, an extended habitat survey of the Site was undertaken between 3rd and 5th May 2022, on 30th and 31st May 2022 and on 14th July 2022. Further extended habitat surveys of the proposed underground cable corridor to the grid connection were undertaken on 18th January 2023. All surveys were completed by suitably qualified and experienced ecologists.

2.2.2 The survey methodology followed the UK industry standard JNCC Phase 1 Habitat survey methodology (JNCC, 2010)[7], with reference to CIEEM *Guidelines for Preliminary Ecological Appraisal, 2nd Edition* (CIEEM, 2017)[8]. However, specific habitats were also recorded and mapped in accordance with the recently and widely adopted methodology described within the *UK Habitat Classification Manual Version 1.1* (UK Habitat Classification Working Group. 2020[9]). All habitats were mapped and described using a series of 'target notes' ('TNs') to the highest level of UK habitat classification as possible, with each individual habitat feature being assigned to a primary habitat and then described with secondary

[3] Available at: https://designatedsites.naturalengland.org.uk/ (accessed 16/05/2023)

[4] Available at: http://jncc.defra.gov.uk/ (accessed 16/05/2023)

[5] Available at: https://magic.defra.gov.uk/MagicMap.aspx (accessed 16/05/2023)

[6] The North & East Yorkshire Ecological Data Centre https://www.neyedc.org.uk/ (accessed 16/05/2023)

[7] JNCC. (2010). *Handbook for Phase I Habitat Survey – a Technique for Environmental Audit*. JNCC, Peterborough

[8] CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

[9] Available at: https://ukhab.org/ukhab-documentation/ (accessed 16/05/2023)

codes if applicable. The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance.

2.2.3 Habitats recorded within the Site are shown in **Figures 8.3** to **8.7,** with associated target notes provided in **Table 3.4**. Descriptions of surveyed ditches and woodlands are respectively detailed in **Tables 3.5** and **3.6**. Accompanying photographs are provided in **Annex 1**.

Limitations of Survey

Desk Study

2.2.4 A desk study does not identify a comprehensive account of all species and features of ecological importance within the study area but improves the understanding of the Site's ecological value and the likely species and habitats within the area.

Extended Habitat Survey

2.2.5 The survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the Site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

2.2.6 A small grid connection compound associated with the existing Drax Power Station could not be directly accessed during the extended habitat survey. However, the area could be observed from outside of the compound, and consists of habitats of relatively low biodiversity importance, primarily; developed surfaces, two buildings, and a mown amenity grassland with a line of conifers. A small section of railway line and associated vegetated banks that pass through Drax Golf Course could not be directly accessed during the extended habitat surveys. However, habitats within these areas were observed from outside of the railway fencing and mapped appropriately using a precautionary approach. These areas are illustrated on **Figure 8.7**. It is considered that the lack of direct access to these areas is not a significant limitation to the ecological assessment process.

2.2.7 A small area of the proposed underground cable corridor to the grid connection (to the south of the A645 within Drax Golf Course) was surveyed in January 2023 and therefore outside of the optimum period for undertaking habitat surveys (April to September). With the large majority of the Site being surveyed within the optimum survey period (May 2022 and July 2022), and with only a small area of the Site being subject to an extended habitat survey outside this period within areas of intensive landscape management, it is considered that the timing of habitat surveys is not a limitation to the ecological assessment process.

3 BASELINE INFORMATION

3.1 Designated Sites for Nature Conservation

Statutory Designated Sites

3.1.1 The Site is not located within any statutory designated site for nature conservation. There are 10 internationally, including European, statutory designated sites within 10km of the Site, and three UK statutory designated sites located within a 5km radius of the Site boundary. These designated sites are detailed in **Table 3.1** below and are shown in **Figure 8.1**.

3.1.2 The Site is located within several Natural England defined Site of Special Scientific Interest ('SSSI') Impact Risk Zones ('IRZs').

Table 3.1. Statutory Designated Sites: *Ramsar Site, Special Protection Area ('SPA'), Special Area for Conservation ('SAC), SSSI, Local Nature Reserve (LNR).*

Site Name	Approximate Distance and Direction from the Site	Qualifying Features
Barlow Common LNR	480m north	This site was previously used for tipping ballast and has since been reclaimed. The site has a mosaic of woodland, wetland, reedbeds and four large ponds[10].
Eskamhorn Meadows SSSI	2.31km south-east	Eskamhorn Meadows SSSI is a nationally important site for species-rich neutral grassland. The relevant National Vegetation Classification ('NVC') types are predominantly 'MG4' meadow foxtail *Alopecurus pratensis* – great burnet *Sanguisorba officinalis* grassland, and a community transitional between this type and the 'MG5' crested dog's-tail *Cynosurus cristatus* – common knapweed *Centaurea nigra* grassland[11].
River Derwent SAC	2.22km north-east	Qualifying species: • Bullhead *Cottus gobio* • River lamprey *Lampetra fluviatilis* • Otter *Lutra lutra* • Sea lamprey *Petromyzon marinus* Qualifying habitats: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. (Rivers with floating vegetation often dominated by water-crowfoot) [12].
River Derwent SSSI	2.22km north-east	The Yorkshire Derwent is considered to represent one of the best British examples of the classic river profile. This lowland section, stretching from Ryemouth to the confluence with the Ouse, supports diverse communities of aquatic flora and fauna, many elements of which are nationally significant[13].

[10] Available at: https://designatedsites.naturalengland.org.uk/SiteLNRDetail.aspx?SiteCode=L1009457 (accessed 16.06.2023)

[11] Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S2000675&SiteName=Eskamhorn%20Meadows%20&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= (accessed 16.06.2023)

[12] Available at: https://publications.naturalengland.org.uk/publication/4824082210095104 (accessed 16.06.2023)

[13] Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1003398 (accessed 16.05.2023)

Lower Derwent Valley SAC	6.47km north-east	Qualifying species: • Otter Qualifying Habitats: • Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*); Alder woodland on floodplains[14].
Lower Derwent Valley SPA	6.47km north-east	Qualifying features: • Bewick's swan Cygnus *columbianus bewickii* (non-breeding) • Eurasian wigeon *Anas penelope5* (non-breeding) • Eurasian teal *Anas crecca* (non-breeding) • Northern shoveler *Anas clypeata* (breeding) • European golden plover *Pluvialis apricaria* (non-breeding) • Ruff *Philomachus pugnax* (non-breeding) • Waterbird assemblage[15]
Lower Derwent Valley Ramsar site.	6.55km north-east	*Ramsar criterion 1* One of the most important examples of traditionally managed species-rich alluvial flood meadow habitat remaining in the UK. The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin. *Ramsar criterion 2* Wetland invertebrates including sixteen species of dragonfly and damselfly, fifteen British Red Data Book wetland invertebrates as well as a leafhopper, *Cicadula ornata5* for which Lower Derwent Valley is the only known site in Great Britain. *Ramsar criterion 4* A staging post for passage birds in spring. Of particular note are the nationally important numbers of Ruff and Whimbrel *Numenius phaeopus*. *Ramsar criterion 5* Wintering bird assemblages of international importance. *Ramsar criterion 6* Wintering species occurring at levels of international importance. Qualifying Species/populations occurring at levels of international importance: • Eurasian wigeon • Eurasian teal[16]
Humber Estuary SAC	6.64km east	Qualifying species: • Sea lamprey • River lamprey • Grey seal *Halichoerus grypus* Qualifying Habitats: • Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks • Estuaries • Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats

[14] Available at: https://publications.naturalengland.org.uk/publication/5660734323163136 (16.05.2023)

[15] Available at: https://publications.naturalengland.org.uk/publication/6223883187257344 (16.05.2023)

[16] Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11037.pdf (16.05.2023)

		• Coastal lagoons • Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) • Embryonic shifting dunes • Shifting dunes along the shoreline with Ammophila arenaria ("white dunes"); Shifting dunes with marram • Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland • Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn[17].
Humber Estuary SPA	6.64km east	Qualifying species: • Bittern *Botaurus stellaris* (non-breeding and breeding) • Common shelduck *Tadorna tadorna* (non-breeding) • Marsh harrier *Circus aeruginosus* (breeding) • Hen harrier *Circus cyaneus* (non-breeding) • Avocet *Recurvirostra avosetta* (non-breeding and breeding) • European golden plover (non-breeding) • Knot *Calidris canutus* (non-breeding) • Dunlin *Calidris alpina alpina* (non-breeding) • Ruff (non-breeding) • Black-tailed godwit *Limosa limosa islandica* (non-breeding) • Bar-tailed godwit *Limosa lapponica* (non-breeding) • Common redshank *Tringa totanus* (non-breeding) • Little tern *Sterna albifrons* (breeding) • Waterbird assemblage[18]
Humber Estuary Ramsar Site	6.64km east	*Ramsar criterion 1* The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. *Ramsar criterion 3* • Grey seal • Natterjack toad *Bufo calamita* *Ramsar criterion 5* Non-breeding waterfowl assemblages of international importance. *Ramsar criterion 6* Non-breeding species/populations occurring at levels of international importance: • Common shelduck (non-breeding) • European golden plover (non-breeding) • Knot (non-breeding) • Dunlin (non-breeding) • Black-tailed godwit (non-breeding) • Bar-tailed godwit (non-breeding) • Common redshank (non-breeding) *Ramsar criterion 8* • River lamprey

[17] Available at: https://publications.naturalengland.org.uk/publication/5009545743040512 (16.05.2023)

[18] Available at: https://publications.naturalengland.org.uk/publication/5382184353398784 (16.05.2023)

		• Sea lamprey[19]
Skipwith Common SAC	8.50km north	Qualifying features: • Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath • European dry heaths[20]
Thorne Moor SAC	9.09km southeast	Qualifying feature: • Degraded raised bogs still capable of natural regeneration[21]
Thorne & Hatfield Moors SPA	9.09km southeast	Qualifying Feature: • European nightjar *Caprimulgus europaeus* (breeding) [22]

Non-statutory Designated Sites

3.1.3 The Site is not located within a non-statutory designated sites for nature conservation. There are fifteen non-statutory designated sites within 2km of the Site, as well as four previous non-statutory designated sites within this search area.

3.1.4 Two non-statutory designated sites are positioned directly adjacent to the Site boundary. These include Sand Pitt Wood and Barffs Close Plantation North Yorkshire Site of Importance for Nature Conservation ('NY SINC') and Field near Primrose Hill, Cat Babbleton NY SINC. Two previously allocated non-statutory designated sites are also located at the Site boundary. These two sites include Jowland Whin near Quosquo Hall NY Deleted SINC and Kerrick Spring Wood NY Deleted SINC.

3.1.5 Both current and previous non-statutory designated sites are detailed in **Table 3.2** below. Locations are illustrated in **Figure 8.2**.

Table 3.2. Non-statutory Designated Sites: *North Yorkshire Site of Importance for Nature Conservation (NY SINC), Yorkshire Wildlife Trust Reserve (YWT Reserve), East Yorkshire Local Wildlife Site (LWS)*

Site Name	Approximate Distance and Direction from the Site	Description[23]
Field near Primrose Hill, Cat Babbleton NY SINC SE62-18	Directly adjacent to the Site boundary.	Not provided by NEYEDC.
Sand Pitt Wood and Barffs Close Plantation NY SINC SE62-12	Directly adjacent to the Site boundary.	Not provided by NEYEDC.
Jowland Whin near Quosquo Hall NY Deleted SINC SE62-10	Directly adjacent to the Site boundary.	Jowland Whin is a conifer plantation on acidic soils. Much of the wood is unthinned and densely shaded with little field layer vegetation except patchy bracken *Pteridium aquilinum*, broad buckler fern *Dryopteris dilatata* and climbing corydalis *Ceratocapnos claviculata*. Presence of rhododendron *Rhododendron ponticum.*

[19] Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11031.pdf (accessed 16.05.2023)

[20] Available at: https://publications.naturalengland.org.uk/publication/5391567648980992 (accessed 16.05.2023)

[21] Available at: https://publications.naturalengland.org.uk/publication/6566028335120384 (accessed 16.05.2023)

[22] Available at: https://publications.naturalengland.org.uk/publication/6503407711944704 (accessed 16.05.2023)

[23]Where listed, descriptions of non-statutory designated sites are all provided by the North & East Yorkshire Ecological Data Centre https://www.neyedc.org.uk/ (accessed 16.05.2023)

Site Name	Approximate Distance and Direction from the Site	Description[23]
Kerrick Spring Wood NY Deleted SINC SE62-11	Directly adjacent to the Site boundary.	Kerrick Spring Wood is a conifer plantation with narrow broad-leaved fringes (mainly sycamore *Acer pseudoplatanus*). Bluebell *Hyacinthoides nonscripta* and wood anemone *Anemone nemorosa* are locally plentiful around the periphery of the plantation. Presence of Himalayan balsam *Impatiens glandulifera.*
Cobble Croft Wood NY SINC SE62-01	105m north-east	Most of this site comprises naturally regenerated birch oak woodland, predominantly silver birch *Betula pendula* and oak *Quercus robur* but with some downy birch *B. pubescens*, sessile oak *Q. petraea* and hybrid trees. Stands of even aged ash *Fraxinus excelsior* and sycamore are presumed to be at least partly of planted origin. Hazel *Corylus avellana* occurs locally as an understorey shrub. Much of the field layer is dominated by bracken with abundant creeping soft grass *Holcus mollis* and climbing corydalis. Bluebell, wood sorrel *Oxalis acetosella* and broad buckler fern are locally abundant with wood sage *Teucrium scorodonia* more restricted to the northern and western sides of the wood.
Common Plantation NY SINC SE62-07	270m north-east	This loosely rectangular site is largely a relatively even-aged plantation dominated throughout much of the area by downy and silver birch reaching 30-35 ft in the canopy. Sycamore is locally frequent in the south and south-western zones, while pedunculate and hybrid oak *Q. x rosacea*, occasional ash and rowan (*Sorbus aucuparia*) from a subordinate element.
Woodland on Barlow Pasture, Botany Bay Farm NY SINC SE62-02	430m north	This site comprises a wedge-shaped stand of woodland located between a drainage dyke and a railway embankment. Most of the area is damp common oak, downy birch woodland with patches of grey sallow *Salix cinerea* carr. Blackthorn *Prunus spinosa* thickets form part of the northern edge of the wood.
Barlow Common YWT Reserve	500m north	A site that contains dense or scattered scrub (principally fringing much of the site) and short rabbit *Oryctolagus cuniculus* grazed moderately neutral or acidic farmland. Supports a variety flora and fauna species. Presence of Japanese knotweed *Fallopia japonica.*
Barlow Common NY SINC SE62-08	500m north	A site that contains dense or scattered scrub (principally fringing much of the site) and short rabbit-grazed moderately neutral or acidic farmland. Supports a variety flora and fauna species. Presence of Japanese knotweed.
Burn Disused Airfield NY SINC SE62-19	630m west	This disused airfield contains a mosaic of habitats, including arable habitat, tall ruderal grassland and scattered or locally dense scrub and tree cover. There are also enclaves of marshy grassland and semi-improved neutral grassland.
Brockholes NY SINC SE62-17	905m south-east	This site is a large, roughly triangular shaped fishing lake for Drax angling club which is surrounded by dense scrub and tree cover of a variety of species. The botanical aquatic communities show some diversity and interest. Presence of Canadian pondweed *Elodea canadensis* and Himalayan balsam.
Disused Railway Embankment NY Deleted SINC SE62-15	1.12km north-east	The embankment of this disused railway line supports secondary scrub and young woodland composed of ash, hawthorn *Crataegus monogyna* and common oak with some gorse *Ulex europaeus*. The embankment top supports a narrow strip of species-poor mutual grassland with false oat *Arrhenatherum elatius*, common knapweed, hogweed *Heracleum sphondylium* and associated species. On one

Site Name	Approximate Distance and Direction from the Site	Description[23]
		section this is replaced by acidic grassland with common bent *Agrostis capillaris*, early hair-grass *Aira praecox*, sheep's sorrel *Rumex acetosella* and cat's ear *Hypochaeris radicata*. Other vegetation includes tall ruderal dominated by rosebay willowherb *Chamerion angustifolium* and bramble *Rubus fruticosus agg*. Scrub.
West Marsh NY SINC SE62-05	1.14km south	The site comprises two hay meadows alongside the River Aire. These meadows support a diverse mixture of grasses featuring at least eighteen species. Amongst the most abundant are meadow foxtail, red fescue *Festuca rubra*, crested dog's-tail, Yorkshire fog *Holcus lanatus* and perennial rye-grass *Lolium perenne*.
Oakney Woods and Ponds NY SINC SE63-08	1.67km north-west	This site is located between Bawtry Road and Selby Canal on the southern outskirts of Selby town. It features two ponds, both former clay pits, with surrounding woodland and grassland. The smaller pond is steep-sided with tree-lined banks. The larger pond, covering around three hectares, has patchy marginal vegetation including on a partially-submerged spit running across the centre. Presence of Himalayan balsam.
Selby Canal & Towpath NY SINC SE52-19	1.75km north-west	Canal and banksides with tall herb, scrub, neutral grassland, common reed *Phragmites australis* and woodland habitat.
Carlton Park Pond NY SINC SE62-04	1.80km south-east	A large ornamental lake in a parkland setting. The main body of water, east of the A1041, has extensive beds of yellow lily *Nuphar lutea* but little other aquatic vegetation. West of the A1041, a smaller water body supports submerged beds of *Elodea* sp.
Meadows nr River Aire NY SINC SE62-03	1.3km south	This site is an area of hay meadow adjoining the River Aire. Contains a diverse range of botanical species.
Gowdall Marsh LWS	1.94km south-west	Not provided by NEYEDC.
Meadow East of Orchard Farm NY Deleted SINC SE62-13	1.96km north	This field supports herb rich neutral grassland on clay, characterised by common knapweed, common bird's foot trefoil *Lotus corniculatus*, meadow vetchling *Lathyrus pratensis*, sweet vernal grass *Anthoxanthum odoratum*, red fescue, common bent and Yorkshire fog. Although herb-rich the sward is also of moderate diversity.

3.2 Priority Habitats: Desk Based Records

3.2.1 A review of MAGIC, NEYEDC data, Ordinance Survey Maps, aerial imagery and the extended habitat survey, identified twelve habitats of Principal Importance (also known as priority habitats) under Section 41 of the NERC Act[24]/UK Biodiversity Action[25] Plan within 2km of the Site. Of these, four are

[24] The Natural Environment and Rural Communities Act (NERC Act)

[25] The UK Biodiversity Action Plan (UK BAP)

present within the Site itself (deciduous woodland, hedgerows, ponds, and arable field margins). One priority habitat is located directly adjacent to the Site boundary (traditional orchards).

3.2.2 Within 2km of the Site boundary, a further 13 habitats listed under the Selby Biodiversity Action Plan ('LBAP')[26] are also present. Local priority habitats within the Site include deciduous woodland, hedgerows, ponds, arable farmland, and ditches. Two local priority habitats are situated directly adjacent to the Site boundary (ancient woodland and towns/villages).

3.2.3 Kerrick Spring Wood is a 4.9ha ancient, replanted woodland located at the southern Site boundary. No other ancient woodlands are located within 2km of the Site boundary.

3.2.4 Review of the Woodland Trust Ancient Tree Inventory[27] identified no notable trees within the Site. Two notable trees were however identified within 500m of the Site. The closest notable tree is a veteran pedunculate oak (National Tree ID: 14482) located on Sandwith Lane directly adjacent to the Site boundary at SE63112572. A second veteran oak tree (National Tree ID: 14481) is located approximately 70m east of the first tree at SE63202569 along Sandwith Lane.

3.2.5 Review of the Natural England Open Data Geoportal[28] identified ancient or irreplaceable peaty soil habitat is not present within the Site or within 500m of the Site boundary.

3.2.6 Information on priority habitats within 2km of the Site is presented in **Table 3.3** below. Where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided, to provide context for the Site and surrounding area.

Table 3.3: Priority Habitats

Priority habitat	Designation	Approximate distance of nearest habitat from the Site
Deciduous Woodland	NERC S.41, UKBAP, LBAP	Within the Site
Hedgerows	NERC S.41, UKBAP, LBAP	Within the Site
Ponds	NERC S.41, UKBAP, LBAP	Within the Site
Arable Field Margins	NERC S.41, UKBAP	Within the Site
Arable Farmland	LBAP	Within the Site
Ditches	LBAP	Within the Site
Ancient Woodland	AWI, LBAP	Directly adjacent to the Site boundary (Kerrick Spring Wood)
Traditional Orchards	NERC S.41, UKBAP	Directly adjacent to the Site boundary
Towns and Villages	LBAP	Directly adjacent to the Site boundary
Lakes	NERC S.41, UKBAP, LBAP	200m east

[26] Selby Biodiversity Action Plan, available at: https://www.northyorks.gov.uk/sites/default/files/2023-05/Selby%20Biodiversity%20Action%20Plan%20Aug%202004.pdf (accessed 16.05.2023)

[27] https://ati.woodlandtrust.org.uk/

[28] https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::peaty-soils-location-england/explore?location=53.965987%2C-2.238949%2C8.56

Priority habitat	Designation	Approximate distance of nearest habitat from the Site
Open Mosaic Habitat on Previously Developed Land[29]	NERC S.41, UKBAP	600m north-east of southern parcel
Rivers and Streams	NERC S.41, UKBAP, LBAP	720m south
Coastal and Floodplain Grazing Marsh	NERC S.41, UKBAP, LBAP	765m south-east
Lowland Fens	NERC S.41, UKBAP, LBAP	890m south-east
Woodpasture and Parkland	NERC S.41, UKBAP, LBAP	1.20km south-east
Canal	LBAP	1.23km north-west
Mudflats	NERC S.41, UKBAP	1.85km north-east

Key

NERC S.41: Natural Environment and Rural Communities (NERC) Act (2006) Section 41.

UKBAP: UK Biodiversity Action Plan Priority Habitat

LBAP: Selby Biodiversity Action Plan Priority Habitat

AWI: Ancient Woodland Inventory

3.3 Extended Habitat Survey

3.3.1 This section should be read in conjunction with the UKHab Habitat Plans presented as **Figures 8.3** to **8.7,** TNs presented in **Table 3.4** below, ditch descriptions (**Table 3.5**) and woodland descriptions (**Table 3.6**). Photographs are presented in **Annex 1**.

3.3.2 The Site occupies an area of land extending to 475ha, set within a rural landscape with scattered settlements. Habitats within the Site predominantly comprise arable fields that are bounded by a combination of hedgerows, tree lines, grassland field margins, woodlands and ditches. One dry pond is located within the Site (P4). The River Aire is located c.720m south-west of the Site boundary, with the River Ouse located c.1.85km north-east of the Site.

Arable *(UKHab code: c1.74, c1a8, c1c, c1c5, c1c.74, c1c5.73, c1d)*

3.3.3 Arable land was the dominant habitat of the Site with most fields comprising arable use at time of survey (**Photograph 1**). Fields consisted of cereal crops, potatoes *Solanum tuberosum*, Brassicas, beans *Phaseolus* sp. And rape *Brassica napus*, with some including winter stubble and freshly ploughed areas. Blocks and margins of a brassica / tall ruderal mix were scattered throughout the Site, which are considered likely to be used as wild bird seed or game cover mixes (**Photograph 2**). Some of the fields had grass arable field margins and corners. The vast majority of these were species-poor, although some were considered to represent tussocky grass mixes to support bird species.

Grassland *(UKHab code: g3c, g4, g4.11, g4.10.11.16, g4.11.64.540)*

3.3.4 Field margins and corners are frequently located throughout the Site and include both modified and neutral grasslands ranging between 1m to 20m wide (**Photograph 3**). Modified grassland field margins include combinations of dominant species such as cock's-foot *Dactylus glomerata*, perennial rye-grass,

[29] An area of the search area is included on the Priority Habitat Inventory (PHI) as being open mosaic habitat on previously developed land. It should be noted that the inclusion on the PHI is based only on aerial imagery, and given as low reliability with the area described as 'probably the priority habitat but some uncertainty of interpretation'.

Yorkshire fog, false-oat grass, cow parsley *Anthriscus sylvestris*, white clover *Trifolium repens*, red clover *Trifolium pratense* or brome *Bromus* sp.. Neutral grassland field margins were often dominated by red fescue and meadow grass *Poa* sp.. Additional species identified in field margins include nettle *Urtica dioica*, meadow foxtail, hogweed, dandelion *Taraxacum* sp., bulbous buttercup *Ranunculus bulbosus*, white deadnettle *Lamium album*, creeping buttercup *Ranunculus repens*, cleavers *Galium aparine*, sorrel *Rumex acetosa*, creeping thistle, lesser bird's foot trefoil, ribwort plantain *Plantago lanceolata,* oxeye daisy *Leucanthemum vulgare*, red campion *Silene dioica*, yarrow *Achillea millefolium*, dandelion, foxglove *Digitalis purpurea*, garlic mustard *Alliaria petiolata*, common daisy *Bellis perennis*, docks *Rumex* sp., bluebell and greater stitchwort *Rabelera holostea*. Hawthorn and bramble scrub are occasionally scattered within grassland margins.

3.3.5 Neutral grassland margins were present along a grass verge bordering roundabouts on the A645 and A1041 where orchid *Orchidaceae* sp. Rosettes were identified (see **TN3; Photograph 18**).

3.3.6 Located in the proposed underground cable corridor to the grid connection area, situated in the north-eastern part of the Site, is a golf course. The golf course is dominated by mown, modified grassland consisting primarily of perennial rye-grass and meadow grass. Creeping buttercup, field speedwell *Veronica agrestis*, common daisy, *Geranium* sp., sedges *Cyperacea*e sp. And mosses *Bryophyt*a sp. Are also present. Areas of grassland includes scattered planted trees comprising Scots pine *Pinus sylvestris*, poplar *Salicaceae* sp. And birch (**Photograph 4**).

3.3.7 A small area of grassland was not included in the extended habitat survey due to Site boundary alterations and access restrictions at the Drax Power Station. This grassland includes a narrow strip of grassland along an unnamed road, directly west of the surveyed grid connection facility. Review of aerial imagery identified the grassland to be heavily mown and likely to be modified grassland.

Hedgerows *(UKHab code: h2a.11.76, h2a.76, h2a.77)*

3.3.8 Field boundaries consisted predominantly of hedgerows, often dominated by hawthorn and occasionally blackthorn. Most hedgerows on-Site are species-poor. However, some species-rich hedgerows are also present. Hedgerows ranged between 0.5m to 5m tall by 0.5m to 3m wide, with both actively managed and neglected hedgerows present on-Site. Hedgerows are mostly intact. However, defunct hedgerows are also distributed throughout. The species assemblage also includes elder *Sambucus nigra*, hazel, ash, apple *Malus* sp., holly *Ilex aquifolium*, beech Fagus sylvatica, dogwood *Cornus sanguinea*, willow *Salix* sp., goat willow *Salix caprea*, elm *Ulmus* sp., alder, field maple *Acer campestre*, oak, guelder-rose *Viburnum opulus*, dogrose *Rosa canina*, rowan, sycamore, honeysuckle *Lonicera periclymenum*, black bryony *Dioscorea communis*, bramble and mock orange *Philadelphus* sp.. Multiple mature trees are also scattered along some of the on-Site hedgerows with most comprising oak or ash trees, although mature rowan, sycamore, pine *Pinus* sp., beech, hawthorn, willow, holly and poplar are also present (**Photograph 5**).

Line of Trees *(UKHab code: w1g6)*

3.3.9 Tree lines are located throughout the Site (**Photograph 6**) and include both mature, semi-mature and immature trees. The species assemblage present on-Site includes oak, willow, cypress, white poplar *Populus alba*, alder, rowan, birch, ash, hawthorn, sycamore, hazel, lime *Tilia* sp., field maple, cherry, alder, Norway maple *Acer platanoides*, whitebeam *Sorbus* sp., elder, holly, blackthorn, apple, aspen *Populus tremula*, beech, goat willow and horse chestnut *Aesculus hippocastanum*. Some tree lines are located within dense scrub.

3.3.10 A short tree line was not included in the extended habitat survey due to Site boundary alterations and access restrictions at the Drax Power Station. Located directly west of the grid connection facility, a tree line dominated by conifers is considered present along the unnamed roadside.

***Ditches** (UKHab code: r1.191)*

3.3.11 The Site contains a network of ditches (**Photograph 7**). Ditches are considered well maintained, with steep earth banks that are generally vegetated by grass or tall ruderal vegetation. The width of ditches varies between 0.5m and 2m wide, with some possessing shallow water depths and others with considerably deeper water. Turbidity varies throughout the Site, with many ditches likely subject to nutrient enrichment. Both static and flowing ditches are present, as well as dry ditches. Himalayan balsam is recorded in several ditches within and adjacent to the Site (**Photograph 8**).

3.3.12 Full ditch descriptions are detailed in **Table 3.5.**

***Ponds** (UKHab code: r1a.19)*

3.3.13 One pond (P4) is located within the Site itself. The pond consists of a small shallow pond with no aquatic vegetation, which seasonal dries as identified in subsequent survey visits. Mature horse chestnut, ash and willow trees are located on the banksides with bramble scrub.

3.3.14 Twenty-nine ponds are located within 250m of the Site boundary. Ponds vary between being small to large waterbodies, with a range of water depths and bank vegetation (e.g., **Photograph 9**).

3.3.15 Full pond descriptions for ponds accessed during the great crested newt *Triturus cristatus* surveys are available in **Technical Appendix 8.5**: GCN Presence or Absence eDNA Report.

***Woodlands** (UKHab code: w1g, w1g.36, w1g.53, w1g.56, w1g.76, w1f7.12.37, w2b.12.36)*

3.3.16 Woodlands were recorded within or directly adjacent to the Site boundary (e.g., **Photographs 10**). Woodlands within the Site include parcels consisting of mature, semi-mature and immature trees. Both semi-natural broadleaved and mixed plantation woodlands are present, as well as a single woodland dominated by Scots pine. Some woodlands contain a bracken dominated ground flora, with several neighbouring woodlands possessing bluebell (**Photograph 11**). Rhododendron (**Photograph 12**) and Himalayan balsam are located in and at the edges of several woodlands surrounding the Site, with only Himalayan balsam recorded in on-Site woodlands (W1). Woodlands located north-east of the Site adjacent to the on-Site golf course include areas of recent management, planted trees and felling.

3.3.17 Kerrick Spring Wood is an ancient, replanted woodland parcel located adjacent to the Site. The woodland is dominated by planted birch and pine trees with bluebells and Himalayan balsam present.

3.3.18 Full details of woodlands included in the extended habitat survey are presented in **Table 3.6**.

***Scrub** (UKHab code: h3d, h3d.11, h3h, h3h.11)*

3.3.19 Dense scrub is scattered throughout the Site, being mostly present along field boundary features. Linear strips of bramble dominant scrub are located within the Site, as well as mixed scrub comprising assemblages of bramble, hawthorn, blackthorn, willow and hazel.

3.3.20 Mixed scrub is also present along New Road bordering south-eastern boundary of the Drax Power Station. This area of scrub is separated from the Site by a fence, which required surveying from distance (**Photograph 13**). Scrub comprised elder, bramble and willow, with scattered alder and willow trees. Himalayan balsam is potentially present.

***Urban** (UKHab code: u1b, u1b5, u1c, u1e.69, u1e.111, u1e.115)*

3.3.21 The Site includes a network of existing fences, tracks and roads (**Photograph 14 and 15**), as well as a car park associated with the Drax Sports and Social Club in the north-eastern part of the Site, within

the proposed underground cable corridor to the grid connection location. Occasional electricity pylons are distributed within the Site. Railway lines are in close proximity to the Site.

Table 3.4: Target Notes

Target Note	Description	Photo Reference
TN1	Artificial beehive	16
TN2	Fallen crack willow *Salix fragilis* tree with large, exposed cracks in trunk. Negligible bat roost potential. Crosses ditch so may require removal.	17
TN3	Species rich grass verge with orchid rosettes	18
TN4	Felled trunks, roots and branches of poplars. Considered good refugia potential for great crested newt.	19
TN5	Multiple log piles on the ground. Considered good refugia potential for great crested newt.	20
TN6	Dead tree with high bat roost potential. Holes and cracks.	21
TN7	Ash tree with high bat roost potential.	22
TN8	Old small mammal burrows and runs. Located within ditch D8.	-
TN9	Small mammal holes and runs of bare earth – likely rat. Located along ditch D7.	-
TN10	Small mammal burrows in bankside. Located within ditch D18.	-

Table 3.5: Ditches

Ditch	Description
D1	Deep ditch with steep grassed banks, with occasional trees, tall ruderal vegetation and scrub. Water around 1m across and 0.2m deep. No emergent vegetation. Some iron staining. Strong flow.
D2	Deep, steep sided ditch with short, grassed north to west bank and scrub, bramble and trees on the south-east bank. Water fast flowing and clear. Ditch measures at 1m - 2m wide, 0.3m-0.5m deep. Common reed present in areas. Well maintained. See **Photograph 7.**
D3	Wet ditch, static, 0.5m - 1m wide, with short grass vegetation on steeply sloping banks. Water is <10cm deep. Leaf litter abundant. Steep banks dominated by hogweed, nettle, greater stitchwort, bramble, docks and garlic mustard.
D4	Wet ditch, static, 0.5m – 1m wide, with steep 45° sloping banks. Shallow water levels at <10cm. Short grass and tall herb dominant banks comprising nettle, hogweed and cleavers.
D5	Wet ditch, static, 0.5m – 1m wide, with steep 45° sloping banks. Shallow water levels at <10cm. Short grass and tall herb dominant banks comprising nettle, hogweed and cleavers.
D6	Wet ditch, static, 0.5m – 1m wide, with steep 45° sloping banks. Shallow water levels at <10cm. Short grass and tall herb dominant banks comprising nettle, hogweed and cleavers.
D7	Ditch with steep grass sides with some tall ruderal vegetation. Likely dredged in recent years. Water 1.0m-1.5m wide, 0.2m-0.4m deep, very slow flow. No emergent vegetation apparent. Small mammal holes and runs of bare earth – likely rat.
D8	Flowing ditch, 0.5m -0.75m wide, 0.1m - 0.2m deep, with scattered emergent vegetation. Steep grass sides with old small mammal burrows and runs.
D9	Ditch with steep grass sides with some tall ruderal vegetation and scrub. Water 1.0m - 1.5m wide, 0.2m - 0.4m deep, with emergent vegetation, very slow flow, becoming static at the southern end with covering of duckweed *Lemna sp.*
D10	Ditch with steep grass sides. In north-west, water 0.5m across, with slow or no flow, very shallow - likely dry in summer. Widens to the south-east to 1.0m across, 0.1m-0.3m deep, with stronger flow, with some tall ruderal vegetation and Himalayan balsam on the banks, along with mature trees. Recently cleared.

Ditch	Description
D11	Wet ditch, steep vegetated side with grass, tall ruderal vegetation and bramble scrub. Water static and 0.5m wide and around 0.1m deep. Emergent vegetation where no shaded. May dry in the summer.
D12	Ditch with very steep grass banks, flowing water.
D13	Steep sided ditch with mostly grass dominant banksides, except where adjacent to neighbouring woodland where banks consist of bramble scrub. Water flowing, with little or no emergent vegetation present. Ditch ranges between 0.5m - 1.5m wide and 0.1m - 0.3m deep.
D14	Steep grass banks with flowing water. Measures at 0.5m wide and 0.1m-0.2m deep. Frequent reed canary grass *Phalaris arundinacea* in channel in places.
D15	Steep grass banks with slow flowing water. Frequent reed canary grass in channel in places.
D16	Steep grass banks with flowing water. Measures at 0.5m wide and between 0.1m - 0.2m deep.
D17	Wet ditch with static water. Measures at 0.5m wide and has short grass vegetation on steeply sloping banks.
D18	Ditch with steep grass banks. Water has little or no flow. Measures at 0.1m - 0.2m deep. Some sweet grass *Hierochloe odorata* and blanket weed *Spirogyr*a sp.. Small mammal burrows in bank.
D19	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D20	Wet ditch with slow flow and no aquatic vegetation. 45° banks with no vegetation.
D21	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on steeply sloping banks. Himalayan balsam present.
D22	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on steeply sloping banks.
D23	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D24	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D25	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D26	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D27	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D28	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on 45° banks.
D29	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on steeply sloping banks. Himalayan balsam present.
D30	Wet ditch with static water. Measures at 0.5m wide, with short grass vegetation on steeply sloping banks.
D31	Wet ditch with static water and short 30-45° grass banks. Measures at 1.0m wide and 0.1m - 0.2m deep. No aquatic vegetation. Himalayan balsam present.
D32	Wet ditch with 30-45° grass banks. Measures 1.0m wide and 0.1m-0.3m deep.
D33	Wet ditch, grass banks 45° some hedgerow, ledges suitable for water vole. Water about 1.0m wide, 0.3m deep, static, slightly turbid due to muck spreading.
D34	Wet ditch with grass banks at 45°. Long grass on eastern bank, whereas grass is short on western bank. Measures at 0.5m wide, with water levels very shallow at <0.1m.
D35	Ditch emerging from culvert to south of road. Banks with tall ruderal vegetation and grass. Flowing water with some emergent vegetation.
D36	Ditch culverted under road. Heavily shaded. Water levels at a <5cm deep. Slow flow.
D37	Ditch with steep banks, with bramble and tall ruderal vegetation. Water 0.1m - 0.2m deep. Turbid with slow flow and culverted under road.

Ditch	Description
D38	Shallow drainage ditch with gentle sloping sides. Measures c.50cm deep. Green keeper informed surveyor that during the summer the ditch is usually dry, filling up during the winter. This section contains lots of leaf/sticks from adjacent woodland. Average width of ditch is c.1.2m.
D39	Shallow drainage ditch with gentle sloping sides. Measures c.50cm deep. Measures at c.1m wide. Contains a wide section of ditch within the northern woodland. Trees and other vegetation currently in water suggests its usually shallower/dry during drier months.
D40	Shallow drainage ditch with gentle sloping sides. Measures c.50cm deep. Measures at c.1.2m wide. Contains a wide section of ditch within the northern woodland. Trees and other vegetation currently in water suggests its usually shallower/dry during drier months.
D41	A ditch along edge of a railway and woodland.

Table 3.6: Woodlands

Woodlands	Description
W1	Mixed plantation woodland of immature trees comprising alder, willow, hazel, pine, larch *Larix sp.* and oak. Himalayas balsam abundant. See **Photograph 10**.
W2	Linear strip of woodland with oak, willow, alder, sycamore, yew *Taxus baccata*, elder and Scots pine.
W3	Mature semi-natural broadleaved woodland. Birch, elder, oak, with bracken and bramble ground flora.
W4	Mature coniferous plantation woodland. Scots pine dominant, with bracken ground flora. Low to negative bat roost potential
W5	Copse of poplar standards with alder, hawthorn, dogwood and elder understory. Bramble dominant ground-flora with nettle and mosses. Open areas present at woodland edge. Stumps present as well as two popular trees cut down. Planted trees present.
W6	Open woodland comprising Norway maple, alder and willow standards. Elder, immature sycamore and Scots pine understory. Bramble and nettle dominant ground flora, with mosses and thistle.
W7	Alder and willow standards, all of which have been pollarded/had crowns removed. Few felled trees present. Elder and dogwood understory. Bramble and nettle dominant ground flora. Tree cuttings remain present on the ground.
W8	Willow and alder standards, with sporadic Scots pine. Elder and dogwood understory. Bramble and nettle dominant ground flora.
W9	Semi-mature plantation woodland, with poplars and alder.
W10	Mature willow standards dominant, with alder, poplar and field maple present. Understory of elder, immature alder and willow. Bramble and nettle dominant ground flora. Management on some trees at golf course edge with branches cut back and the crown pollarded.
W11	Oak, field maple, birch and willow standards with an elder understory. Nettle and bramble dominant ground flora. More scrub abundance as woodland narrows heading north; hawthorn, *Buddleia* sp. and bramble present.
W12	Small copse comprising cherry and sycamore standards. Understory of hawthorn and dogrose. Ground floor mainly bare, with sporadic bramble. Planted trees.
W13	Open woodland with limited standards, comprising willow and Scots pine. Scattered understory of elder and dogwood. Ground flora dominated by bramble and nettle.

3.4 Protected, Priority, and Notable Species

Birds

3.4.1 With regards to ornithology, results of the desk study and breeding and wintering bird surveys are presented in **Technical Appendix 8.2: Ornithological Survey Report**.

Bats

Legislation

3.4.2 All species of British bat are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are further protected under the Conservation of Habitats and Species Regulations 2017 (as amended)[30] and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[31]. The Act and Regulations make it an offence to:

- kill, injure, or take any wild bat;
- damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; and,
- intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.

3.4.3 Seven bat species in the UK are also listed as species of Principal Importance for the purpose of conserving biodiversity under Section 41 of the NERC Act (2006) and all species are listed within the Selby Biodiversity Action Plan (BAP) and are therefore, a material consideration within the planning process.

Desk Study

3.4.4 The data received from NEYEDC returned 30 recent bat records and six historical records within 2km of the Site. Bat species returned since 2005 include Daubenton's bat *Myotis daubentonii* (two records), noctule *Nyctalus noctula* (four records), Leisler's bat *Nyctalus leisleri* (one record), common pipistrelle *Pipistrellus pipistrellus* (fourteen records), soprano pipistrelle *Pipistrellus pygmaeus* (four records) and an unknown Myotis bat species *Myotis sp*. (five records). Historical records include six unknown pipistrelle *Pipistrellus* sp. records. No bat records were returned within the Site itself, with records predominantly located north-west of the neighbouring Drax Power Station in the adjacent Skylark Centre and Nature Reserve. This area includes woodland, grassland and linear freshwater habitat. No recent records include roost locations; however, all six historical records involve roosting bats, with the closest record returned in urban habitat approximately 200m north-west of the underground cable corridor to the grid connection, in the north-eastern part of the Site.

[30] The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made

[31] The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573

3.4.5 A review of MAGIC identified four Natural England licences granted for bat roosts within 2km of the Site:

- 2019-41922-EPS-MIT; destruction of a brown long-eared bat *Plecotus auritus* and common pipistrelle resting site between 2019 to 2020. Located c. 735m south-west of the Site.
- 2014-3615-EPS-MIT; destruction of a common pipistrelle, whiskered bat *Myotis mystacinus*, Brandt's bat *Myotis brandti* and Natterer's bat *Myotis nattereri* resting site between 2014 to 2019. Located c. 745m north-east of the Site.
- 2019-42236-EPS-MIT; destruction of a common pipistrel resting site between 2019 to 2025. Located c. 900m south-east of the Site.
- 2020-45385-EPS-MIT; destruction of a brown long-eared bat and common pipistrelle resting site, with impact of a breeding site between 2020 and 2023. Located c. 1.05km south-east of the Site.

Commuting and Foraging Bats

3.4.6 The dominant habitats consist of intensively managed agricultural land, the majority of which is used for arable purposes. Open arable farmland offers very little foraging and commuting potential for bats[32], and bat activity is considered likely to be concentrated along boundary features such as hedgerows and ditch networks[33]. Current farming practices, particularly the use of herbicides and pesticides, also mean that low flying invertebrate prey species will be absent or rare across much of the Site; this reduces the potential for bat species to forage within this type of habitat and it can therefore be reasonably concluded that the majority of the Site is unimportant for foraging bats due to land management practices.

3.4.7 Therefore, the predominantly arable habitats throughout the Site and beyond provide little suitability for bats. However, the network of hedges, ditches, tree lines, watercourses, ponds, and occasional woodlands do provide opportunities for commuting and foraging. Following current guidance[34], the Site is therefore considered to have moderate overall commuting and foraging value for bat species.

Roosting Bats

3.4.8 Two small buildings identified within the underground cable corridor to the grid connection, in the substation area at Drax Power Station (see **Figure 8.7**). These buildings are single storey brick built/flat-roofed buildings, no direct access was available to undertake a detailed inspection (buildings are located within a live network grid connection compound) however, as a precaution these have been assigned a negligible-low suitability for roosting bats.

3.4.9 Many of the hedgerows within the Site have varying numbers of semi-mature and mature trees; some of these are likely to have varying degrees of bat roosting potential, as do the woodland trees, scattered mature standalone trees and trees in rows. Two mature trees within the Site were noted to have potential bat roosting features during the extended habitat survey. Trees considered to have high bat roost potential include **TN7** and **TN8**, which include a dead tree and a mature ash tree with holes, cracks and cavities. A fallen crack willow tree (**TN3**) recorded within the Site is considered to have negligible bat roost features.

3.4.10 Woodland parcels within and directly adjacent to the Site generally contain mature trees potentially with bat roosting potential.

Badger

Legislation

3.4.11 Badgers and their setts are protected under the Protection of Badgers Act 1992[35]. Under the Act it is an offence to:

- Kill or harm a badger;
- Interfere with an active sett; or
- Disturb a badger while occupying a sett.

3.4.12 Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if disturbance can be actively avoided and the sett is not damaged or destroyed.

3.4.13 Any development (as defined in Section 55 (1) of the Town and Country Planning Act 1990) which may result in interference with badgers or badger setts will require a licence under section 10 of the Protection of Badgers Act 1992 from Natural England.

Desk Study

3.4.14 NEYEDC returned a total of 26 badger records from within 2km of the Site dating between 2007 and 2018. No records (including historic records) were received from within or in close proximity to the Site; with the closest record being located 1.15km north-east of the Site.

Further Information

3.4.15 During the extended habitat survey evidence of badger was identified within the Site.

3.4.16 Overall, the Site provides opportunities for sett making and foraging/commuting badgers.

3.4.17 Further confidential information is presented in **Technical Appendix 8.4**.

Otter and Water Vole

3.4.18 Results of the desk study and otter/water vole surveys are presented in **Appendix 8.3: Otter and Water Vole Survey Report**.

Amphibians

3.4.19 Results of the desk study and field surveys are presented in **Appendix 8.5: Amphibian Baseline Report.**

[35] Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents (accessed 22nd February 2023)

Reptiles

Legislation

3.4.20 Under Section 9 (5) of the Wildlife and Countryside Act 1981 (as amended), the more widespread reptile species; slow worm *Anguis fragilis*, grass snake *Natrix helvetica*, common lizard *Zootoca vivipara and* adder *Vipera berus* are protected against sale, barter, exchange, transporting for sale and advertising to sell or buy.

3.4.21 Common lizard, grass snake, adder and slow worm are also listed as priority species in England under Section 41 of the NERC Act (2006); they are therefore a material consideration within the planning process.

Desk Study

3.4.22 The data search identified nineteen recent records of grass snake in the surrounding 2km area. Records were identified in wetland, grassland and woodland habitats north-west of the Drax Power Station, with the closest being c. 1.6km north-west of the Site boundary.

3.4.23 Six historical reptile records were also returned in the search area dating between 1998 and 2004. All six records relate to grass snake, which occur in various wetland and terrestrial habitat surrounding the Site. The closest historical grass snake record was identified c. 460m north of the Site boundary in woodland habitat.

Habitat Suitability

3.4.24 The Site is dominated by arable farmland, which is considered to be of a negligible value for reptile species, however, the field boundary habitats such as hedgerows, ditches, field margins (where present) and grassland road verges do potentially provide limited habitats for foraging/hibernation purposes.

3.4.25 The Site has habitat connectivity to similar extensive farmland habitats in the wider landscape, direct habitat connectivity to woodland/pond habitats which may support wider populations of reptile species.

Other Priority Species

Desk Study

Flora

3.4.26 The NEYEDC data search returned no recent records of notable plant species listed on Schedule 8 of The Wildlife & Countryside Act 1981 (as amended). Six historical records that include Schedule 8 species were returned in the data search dating between 1990 and 1998. All six records relate to bluebell which were recorded in woodland parcels bordering the Site. Woodlands containing bluebell include Jowland Whin near Quosquo Hall NY Deleted SINC, Kerrick Spring Wood NY Deleted SINC, Sand Pitt Wood and Barffs Close Plantation NY SINC, Cobble Croft Wood NY SINC, Barlow Common LNR/YWT Reserve/NY SINC and Common Plantation NY SINC.

Fish

3.4.27 No notable fish species were returned since 2005 in the NEYEDC data search. One historical record of European eel *Anguilla anguilla* was returned in 2003 in the River Ouse and River Derwent confluence. A single bullhead record was also returned in 2002 in the River Ouse.

3.4.28 European eel is listed in England under Section 41 of the NERC Act 2006. The bullhead is comparatively rare at a European scale, making the UK population of European significance. It is listed under Annex II of the Habitats Directive for protection through site designation and SACs have been designated specifically to protect bullhead.

Mammals

3.4.29 The data search also returned recent records consisting of brown hare *Lepus europaeus*, red squirrel *Sciurus vulgaris* and polecat *Mustela putorius* within 2km of the Site since 2005. Brown hare returned five recent records and one historical record in surrounding habitats, with one record being located within the north-eastern part of the Site. The species was also identified within the Site during the extended habitat survey. Red squirrel records include two observations in 2011 approximately 825m north-west of the Site in woodland habitats near the Drax Power Station. Polecat consists of a single record in 2007 located directly adjacent to the Site boundary on the A1041.

3.4.30 A single historical record of hedgehog *Erinaceus europaeus* was also returned in the data search. This record from 2002 was located 2km north-west of the Site.

3.4.31 Red squirrel records received from NEYEDC include two observations in 2011 approximately 825m north-west of the Site in woodland habitats near the Drax Power Station.

3.4.32 Red squirrels are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Brown hare, polecat, red squirrel and hedgehog are also listed in England under Section 41 of the NERC Act 2006. Brown hare is further listed under the Selby Biodiversity Action Plan.

Invertebrates

3.4.33 The data received from NEYEDC returned 20 records of invertebrate species within 2km of the Site. Most notable species returned include two records of small heath *Coenonympha pamphilus* and one record of wall *Lasiommata megera*. Notable invertebrate records were recorded primarily at Drax Power Station and Barlow Common. Historical notable invertebrate species returned include shaded broad-bar *Scotopteryx chenopodiata* and cinnabar *Tyria jacobaeae*. Neither species record was within the Site.

3.4.34 Small heath, wall, shaded broad-bar and cinnabar are listed in England under Section 41 of the NERC Act 2006.

Habitat Suitability

Flora

3.4.35 Bluebell was recorded within the Site during the habitat surveys in some field margins, as well as in several neighbouring woodlands, such as Kerrick Spring Wood.

Fish

3.4.36 No on-Site habitat is considered suitable to support European eel or bullhead. No other notable fish species were identified during the habitat surveys.

Mammals

3.4.37 The habitats on Site provide opportunities for notable mammal species such a hedgehog, brown hare, and polecat. Habitats most suitable for these species include hedgerows, tree lines, field margins, scrub, dry ditches and woodlands.

3.4.38 Red squirrel records received are located significantly outside of the current known range of the species[36] and are considered likely to represent escaped or deliberately released animals, therefore local populations of the species are not considered likely within or surrounding the Site.

3.4.39 Brown hare were noted in several places during the various on-Site surveys and therefore confirmed to be regularly on-Site. Hedgehog are considered likely to be frequently present within the Site, whilst red squirrel and polecat are less likely to be recorded frequently, if present.

Invertebrates

3.4.40 The arable fields subject to regular agricultural management are considered unlikely to support a notable invertebrate assemblage, while woodlands and boundary hedgerows, ditches, ponds, field margins and trees are considered more likely to support a more diverse range of species associated with such habitats.

3.5 Invasive non-native species

Legislation

3.5.1 These species are listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended), it is an offence to plant or otherwise cause them to grow in the wild. This includes allowing the species to grow/spread, spreading the species or transferring polluted ground material from one area to another.

3.5.2 Any Schedule 9 plant species or soil/waste containing this species is classed as controlled waste under the Environmental Protection Act (Duty of Care) Regulations 1991, which requires a permit issued by the Environment Agency to transfer polluted material off-site to a registered waste facility. If waste soils containing invasive species are to be transferred from Site it is likely that the disposal of these soils will need to be permitted by the Environment Agency, in order to achieve legislative compliance.

3.5.3 Section 14(4A) of the Wildlife and Countryside Act (1981), as inserted by Section 23 of the Infrastructure Act 2015, enables species control agreements and orders to be made by environmental authorities to ensure that landowners take action on Schedule 9 invasive non-native species, or permit others to enter the land and carry out those operations, to prevent their establishment and spread. The Species Control Provisions: Code of Practice for England sets out how the provisions should be applied by environmental authorities in England.

3.5.4 Species such as American mink *Neovison vison* and grey squirrel *Sciurus carolinensis* are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) Section 14(1) of the WCA makes it illegal to release or allow to escape into the wild any animal listed in Schedule 9 of the Act.

Desk Study

3.5.5 The NEYEDC returned 21 records comprising five plant species listed within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within the search area. Species returned since 2005 include Himalayan balsam (seventeen records), Canadian waterweed (one record), Japanese knotweed (one record), giant hogweed *Heracleum mantegazzianum* (one record) and Nuttall's waterweed *Elodea nuttallii* (one record). No records were returned within the Site itself.

3.5.6 Fourteen historical records relating to invasive plants species listed on Schedule 9 were returned in the data search. Records comprise of curly waterweed *Lagarosiphon major* (one record), Himalayan balsam (seven records), Japanese knotweed (three records), Nuttall's waterweed (one record) and

[36] Available at: https://www.rsst.org.uk/where-to-find-red-squirrels/ (accessed 01/06/2023)

rhododendron (two records). Of these, several were recorded directly adjacent to the Site in 1998. This included Himalayan balsam in Kerrick Spring Wood NY Deleted SINC, rhododendron in Sand Pitt Wood and Barffs Close Plantation NY SINC off the A1041 and rhododendron in Jowland Whin near Quosquo Hall NY Deleted SINC woodland bordering both Jowland Winn Lane and Sandwith Lane.

3.5.7 Records of invasive animal species listed within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) received from the NEYEDC consist of two American mink in 2011 and 2016. The closest mink record was returned approximately 1.55km north near the Drax Power Station. The second record was returned at the Selby Canal north-west of the Site.

3.5.8 Review of the NEYEDC returned species lists recorded at non-statutory designated sites identified five further invasive, non-native plant species within 2km of the Site (see **Table 3.2**). Japanese knotweed, Himalayan balsam, Canadian pondweed, unknown *Elodea* sp., and rhododendron were identified. Japanese knotweed was recorded at Barlow Common YWTR and Barlow Common NY SINC, with Himalayan balsam recorded at Brockholes NY SINC, Kerrick Spring Wood NY Deleted SINC and Oakney Woods and Ponds NY SINC. Canadian pondweed was also recorded at Brockholes NY SINC, whilst an unknown Elodea sp. was identified at Carlton Park Pond NY SINC. Rhododendron was further confirmed at Jowland Whin near Quosquo Hall NY Deleted SINC.

Survey Results

3.5.9 Invasive non-native species rhododendron and Himalayan balsam were frequently noted within and adjacent to the Site during the extended habitat surveys.

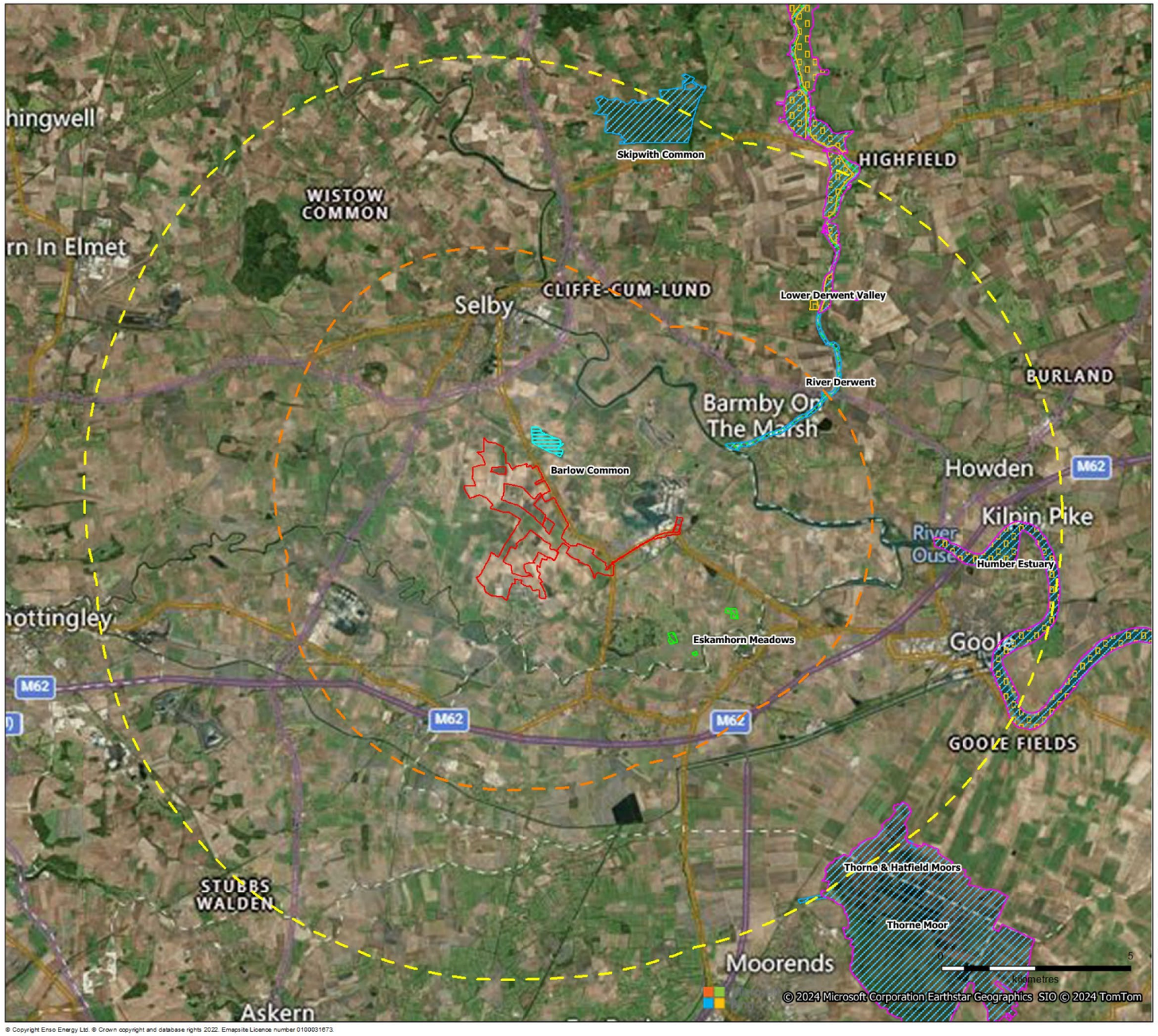
3.5.10 Rhododendron was recorded in three adjacent woodland parcels. The species was identified in abundance within a woodland located west of Jowland Winn Lane. Rhododendron was also recorded in Jowland Whin near Quosquo Hall NY Deleted SINC which borders both Jowland Winn Lane and Sandwith Lane (as returned by the NEYEDC data search in 1998). An abundance of the species was also recorded in a large woodland parcel encompassed and surrounded by the north-western part of the Site. This woodland is located 545m east of Hagg Bush Lane, 475m south of Common Lane and 500m west of Chester Court Road.

3.5.11 Himalayan balsam was identified in abundance throughout the Site and wider area, primarily occurring in ditch, pond and woodland habitats. The species was recorded in one on-Site woodland (W1) and eight woodlands surrounding the Site. Woodland W3 which is partly on-Site also possesses Himalayan balsam, however the invasive species is located within areas of woodland outside the Site boundary. With rhododendron, the species was also recorded in woodland located west of Jowland Winn Lane, where it was most abundant in the woodland's northern section. A large woodland block located 215m north-west of this woodland also contains the species. Further off-Site woodlands containing Himalayan balsam include Kerrick Spring Wood and a small plantation 290m north-west of Kerrick Spring Wood. This small woodland is located along ditches D14 and D20, with the invasive species dispersing from the wood into the on-Site D20. Additional woodlands bordering the Site that possess dense areas of Himalayan balsam includes a small woodland copse located 110m south-west of the roundabout connecting the A1041 and A645, as well as a woodland located at the northern Site boundary adjacent to P24. Sand Pitt Wood and Barffs Close Plantation NY SINC was also recorded with Himalayan balsam. An additional woodland containing the invasive species is located 120m south of the Site and 205m south-west of Kerrick Spring Wood. Here, Himalayan balsam has also spread into the adjacent off-Site ditch.

3.5.12 On-Site ditches containing the species include ditches D10, D21 and D29 at the southern boundary, ditch D31 north-west of pond P9 and in a small region directly north-west of ditch D31. The species is also abundant at pond P28, which occurs at the south-western Site boundary. Himalayan balsam is also potentially present in scrub habitat south of the Drax Power Station and north of the A645 where

the proposed underground cable corridor to the grid connection is located. Two additional off-Site ditches supporting the species are found 180m and 360m west of the Site.

FIGURE 8.1: STATUTORY DESIGNATED SITES



Key

- Site Boundary
- 10km buffer
- 5km buffer

Designated Sites

- Special Protection Areas (SPA)
- Special Areas of Conservation (SAC)
- Sites of Special Scientific (SSSI)
- Local Nature Reserves (LNR)
- Ramsar Site

N
W E
S

HELIOS RENEWABLE ENERGY PROJECT

Project Title: Helios Renewable Energy Project

Drawing Title: Statutory Designated Sites

DRWG No	Rev	Sht no

Drawn by	Checked by
HD	HF

Scale	Date
1:95,000 @ A3	12/03/2024

FIGURE 8.2: NON-STATUTORY DESIGNATED SITES

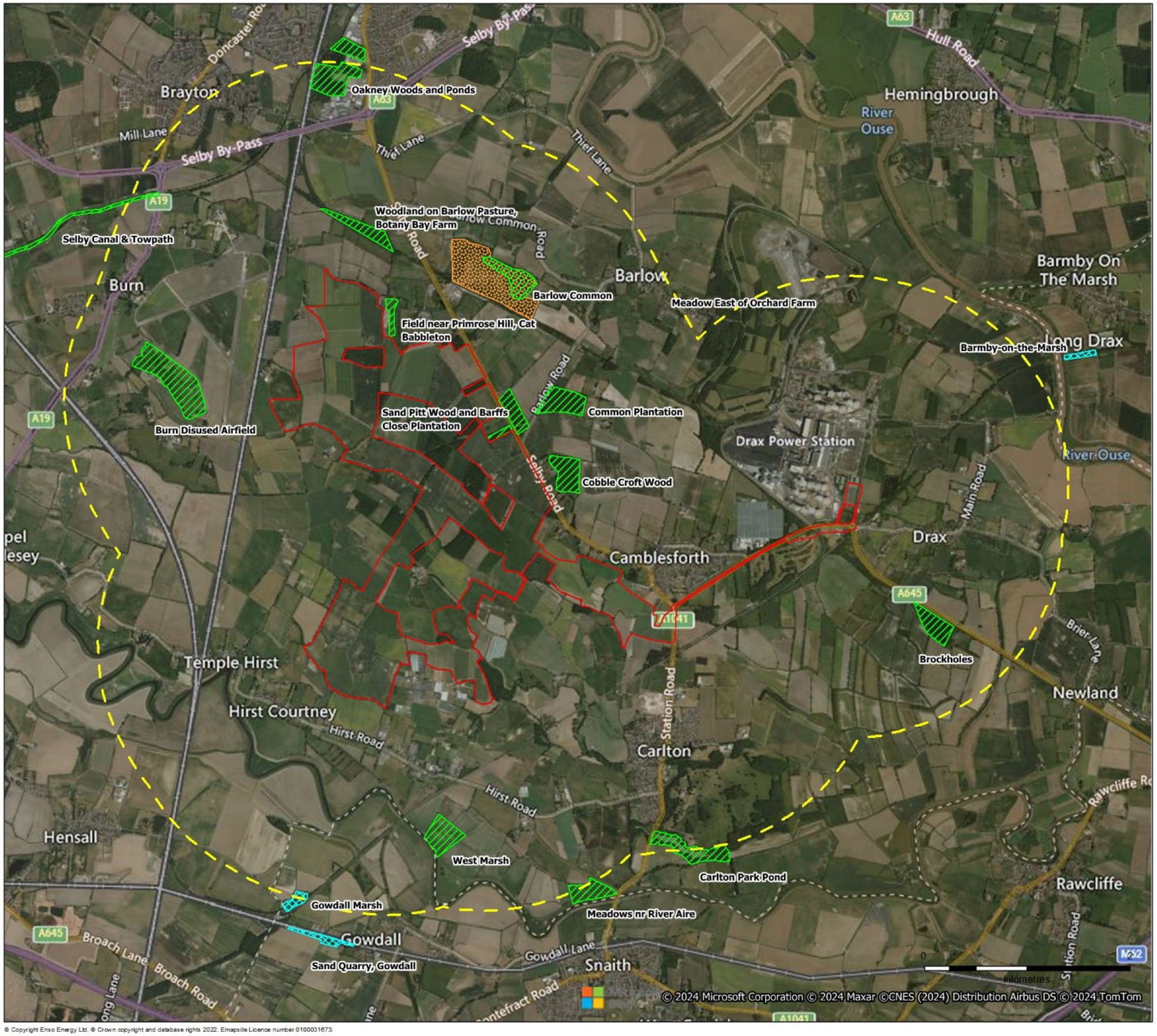


FIGURE 8.3 – HABITAT PLAN - OVERVIEW

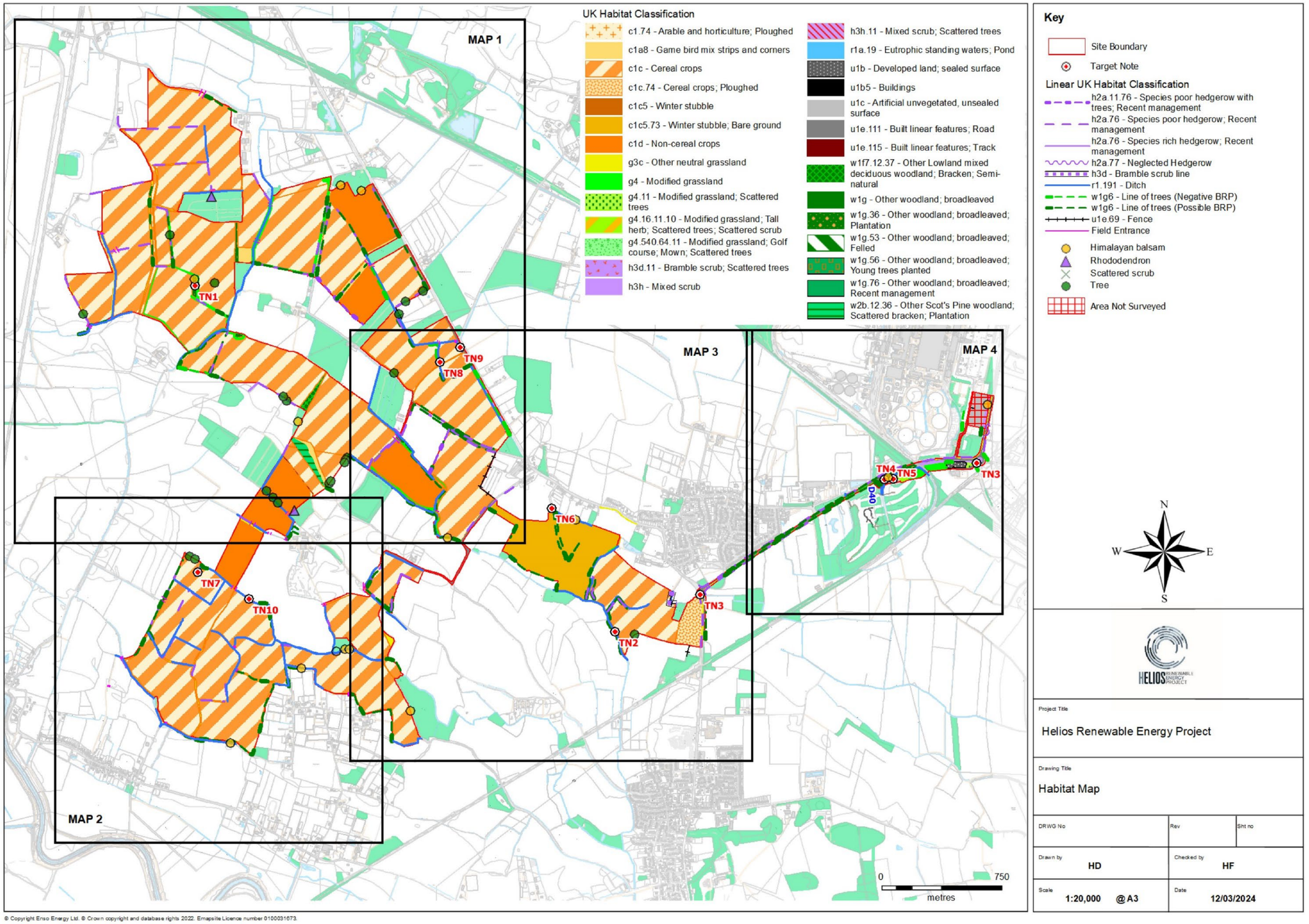


FIGURE 8.4 – HABITAT PLAN - MAP 1

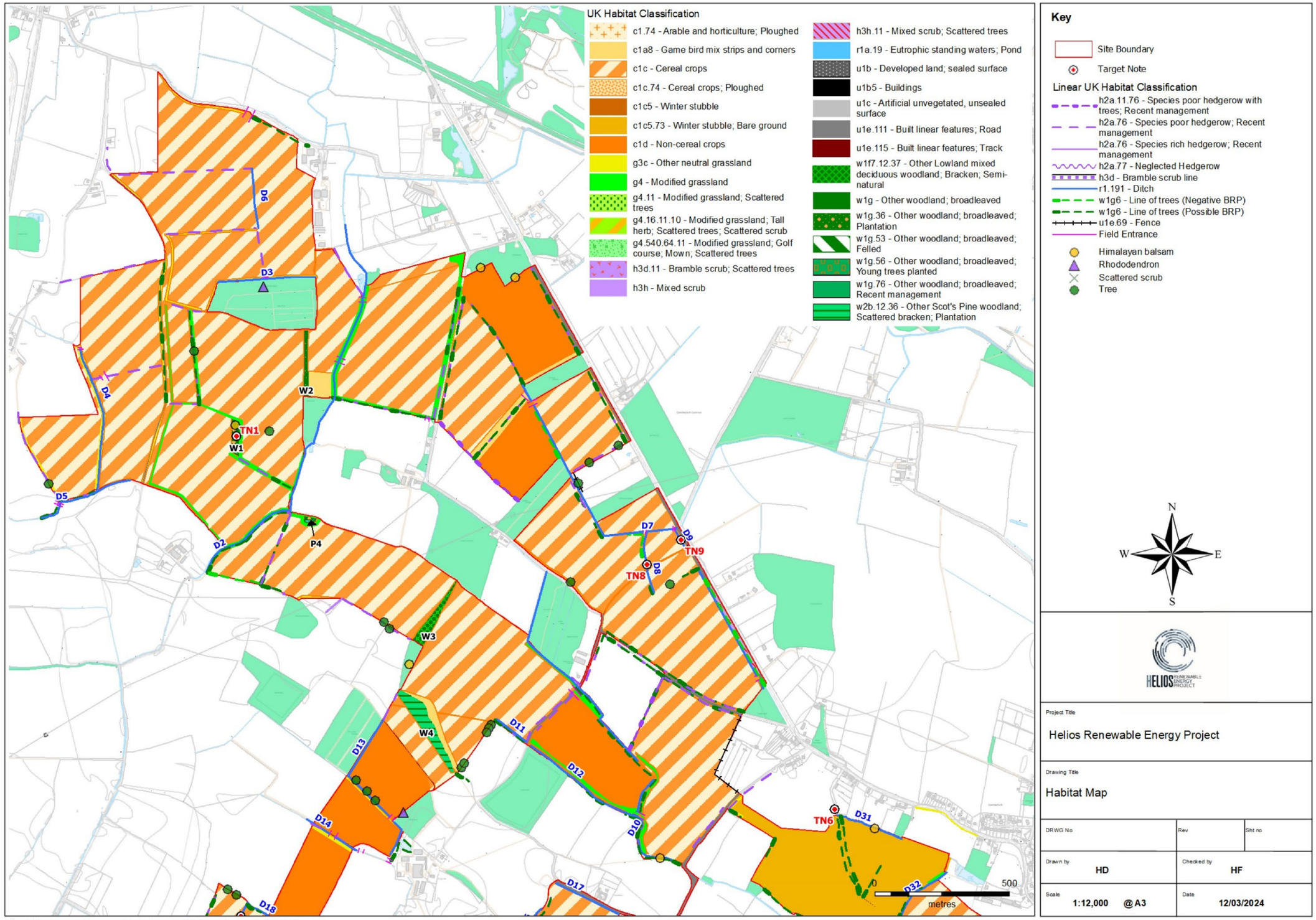


FIGURE 8.5 – HABITAT PLAN - MAP 2

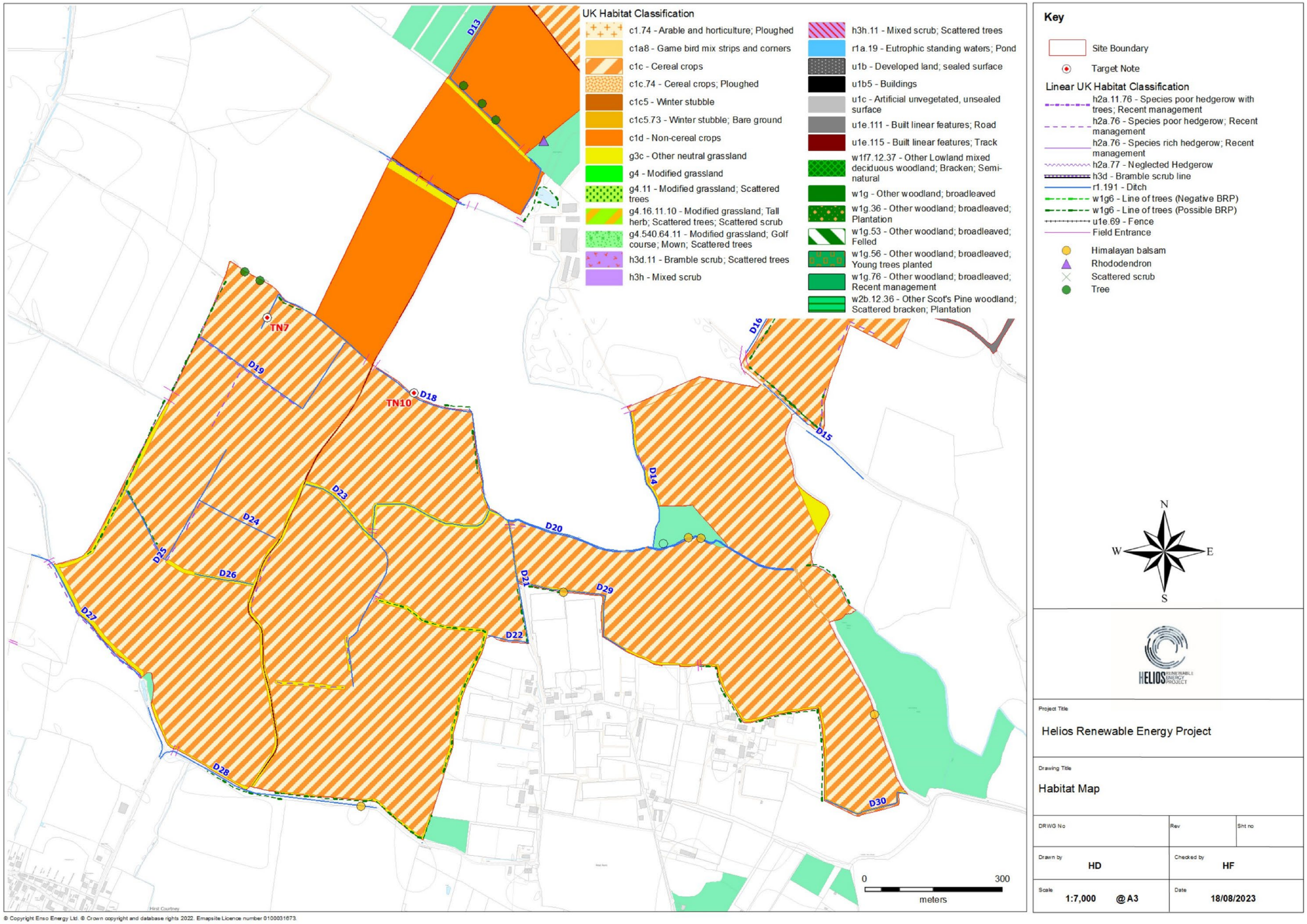


FIGURE 8.6 – HABITAT PLAN - MAP 3

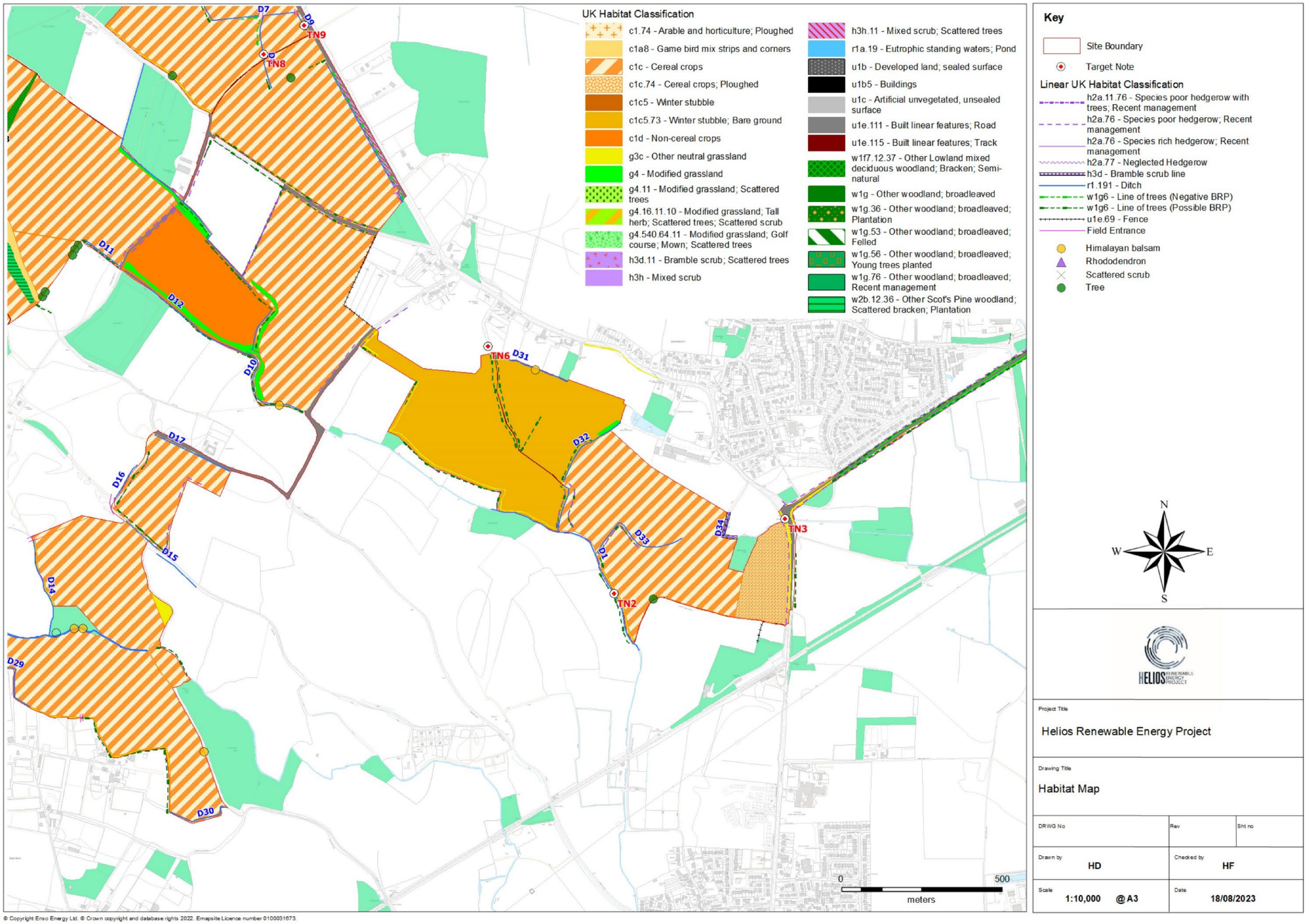
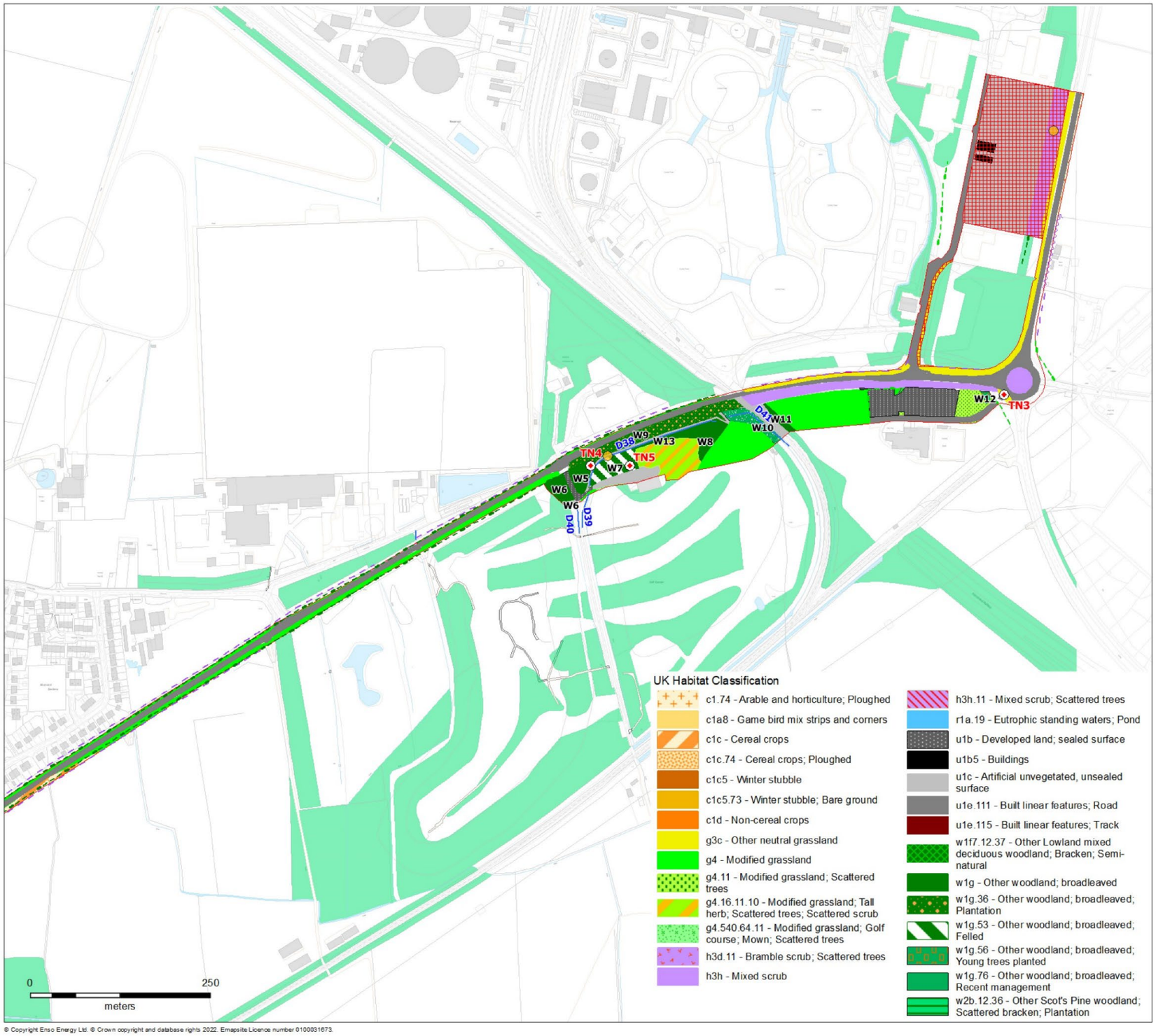


FIGURE 8.7 – HABITAT PLAN - MAP 4



Key

- Site Boundary
- Target Note

Linear UK Habitat Classification

- h2a.11.76 - Species poor hedgerow with trees; Recent management
- h2a.76 - Species poor hedgerow; Recent management
- h2a.76 - Species rich hedgerow; Recent management
- h2a.77 - Neglected Hedgerow
- h3d - Bramble scrub line
- r1.191 - Ditch
- w1g6 - Line of trees (Negative BRP)
- w1g6 - Line of trees (Possible BRP)
- u1e.69 - Fence
- Field Entrance
- Himalayan balsam
- Rhododendron
- Scattered scrub
- Tree
- Area Not Surveyed

UK Habitat Classification

- c1.74 - Arable and horticulture; Ploughed
- c1a8 - Game bird mix strips and corners
- c1c - Cereal crops
- c1c.74 - Cereal crops; Ploughed
- c1c5 - Winter stubble
- c1c5.73 - Winter stubble; Bare ground
- c1d - Non-cereal crops
- g3c - Other neutral grassland
- g4 - Modified grassland
- g4.11 - Modified grassland; Scattered trees
- g4.16.11.10 - Modified grassland; Tall herb; Scattered trees; Scattered scrub
- g4.540.64.11 - Modified grassland; Golf course; Mown; Scattered trees
- h3d.11 - Bramble scrub; Scattered trees
- h3h - Mixed scrub
- h3h.11 - Mixed scrub; Scattered trees
- r1a.19 - Eutrophic standing waters; Pond
- u1b - Developed land; sealed surface
- u1b5 - Buildings
- u1c - Artificial unvegetated, unsealed surface
- u1e.111 - Built linear features; Road
- u1e.115 - Built linear features; Track
- w1f7.12.37 - Other Lowland mixed deciduous woodland; Bracken; Semi-natural
- w1g - Other woodland; broadleaved
- w1g.36 - Other woodland; broadleaved; Plantation
- w1g.53 - Other woodland; broadleaved; Felled
- w1g.56 - Other woodland; broadleaved; Young trees planted
- w1g.76 - Other woodland; broadleaved; Recent management
- w2b.12.36 - Other Scot's Pine woodland; Scattered bracken; Plantation

N
W
E
S

HELIOS RENEWABLE ENERGY PROJECT

Project Title: Helios Renewable Energy Project

Drawing Title: Habitat Map

DRWG No	Rev	Sht no

Drawn by	Checked by
HD	HF

Scale	Date
1:15,000 @A3	18/08/2023

Annex 1

ANNEX 3. PHOTOGRAPHS

Photographs	
	
Photograph 1: Typical arable landscape.	**Photograph 2:** Gamebird mix planted strip.
	
Photograph 3: On-Site grassland field margin.	**Photograph 4:** On-Site golf course comprising mown, modified grassland and scattered trees.
	
Photograph 5: A typical intact, managed hedgerow within the Site, here containing scattered trees.	**Photograph 6:** An on-Site line of trees; here dominated by mature oak trees.

	
Photograph 7: Typical on-Site ditch (D2).	**Photograph 8:** Himalayan balsam located in close proximity to the Site.
	
Photograph 9: P34 located in close Site proximity.	**Photograph 10:** An on-Site mixed plantation woodland comprised of immature trees (W1). Pictured in the distance are artificial beehives.
	
Photograph 11: Bluebells recorded in neighbouring woodland parcel.	**Photograph 12:** Rhododendron within an adjacent woodland

Photograph 13: The neighbouring Drax Power Station north of the A645. Habitats contain dense scrub and scattered trees north of the fence line.

Photograph 14: A645 road and adjacent woodland habitat.

Photograph 15: A typical track distributed throughout the Site.

Photograph 16: TN1 – On-Site artificial beehive.

Photograph 17: TN2 – Fallen crack willow tree with negligible bat roost potential. Lies over a ditch section.

Photograph 18: TN3 – Species-rich grass verge with orchid rosettes.

Photograph 19: TN4 – Felled trunks, roots and branches of poplars. Considered good refugia potential for great crested newt.

Photograph 20: TN5 – Multiple log piles on the ground. Considered good refugia potential for great crested newt.

Photograph 21: TN6 – Dead tree with holes and cracks. High bat roost potential.

Photograph 22: TN7 – Ash tree with high bat roost potential.