



# **ENVIRONMENTAL STATEMENT – VOLUME 3 – APPENDIX 8.1**

## **Preliminary Ecological Appraisal Report**

### **Drax Bioenergy with Carbon Capture and Storage**

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations, 2009 – Regulation (5(2)(a))

Document Reference Number: 6.3.8.1

Applicant: Drax Power Limited

PINS Reference: EN010120



REVISION: 01

DATE: May 2022

DOCUMENT OWNER: WSP UK Limited

AUTHOR: N. Ferguson

APPROVER: P. Peterson

PUBLIC

# TABLE OF CONTENTS

---

<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1. Background.....	1
1.2. Project Background.....	1
1.3. Ecological Background.....	1
1.4. Scope of Report .....	2
1.5. Relevant Legislation and Policy .....	3
<b>2. METHODS .....</b>	<b>4</b>
2.1. Overview .....	4
2.2. Desk Study.....	4
2.3. Habitat Survey.....	5
2.4. Protected Species Assessment.....	6
2.5. Notes.....	6
<b>3. RESULTS .....</b>	<b>8</b>
3.1. Desk Survey.....	8
3.2. Habitat Survey.....	11
3.3. Protected and Notable Species Assessment .....	17
<b>4. DISCUSSION .....</b>	<b>22</b>
4.2. Habitats.....	22
4.3. Protected and Notable Species.....	22
<b>REFERENCES .....</b>	<b>23</b>
<b>APPENDICES.....</b>	<b>31</b>
Appendix A - Target Notes .....	32
Appendix B - Photographs .....	33
Appendix C – Plant species recorded .....	36
Appendix D – Legally protected and priority species within 2km the Site Boundary (data from NEYEDC) .....	41
Appendix E – European Protected Species Licences .....	43

## FIGURES

---

Figure 1 - Site Boundary .....	25
Figure 2 - Statutory Designated Sites .....	26
Figure 3 - Non-Statutory Designated Sites.....	27
Figure 4 - Habitats of Principal Importance and Ancient Woodland .....	28
Figure 5 - Protected and Notable Species Records .....	29

Figure 6 - Phase 1 Habitat Survey Results ..... 30

**TABLES**

---

Table 3.1 - Internationally and Nationally Designated Sites within 5km-15 km of the Site Boundary..... 9

Table 3.2 - Non-Statutory Designated Sites within 2km of the Site Boundary..... 10

Table 3.3 - Priority habitats within 2km of the Site Boundary ..... 11

## EXECUTIVE SUMMARY

---

WSP UK Ltd. (WSP) was commissioned by Drax Power Limited undertake a Preliminary Ecological Appraisal (PEA) to support an application for a Development Consent Order (DCO) to install post combustion carbon capture technology at up to two of the existing 600 MWe biomass power generating units at the Drax Power Station in Selby, North Yorkshire (hereafter referred to as the 'Proposed Scheme').

The 'Site' (at the time of survey) was the Drax Power Station and up to 30 m from the boundary of the Proposed Scheme, with an additional area of land to the east, comprising Carr Lane and Redhouse Lane, ending at the jetty at the bank of the River Ouse (hereafter referred to as the 'Survey Area'). This PEA aims to identify the presence of statutory and non-statutory designated sites within, or in proximity to, the Site. The report also aims to provide detailed habitat information for the Site and an assessment of the Site's potential to support notable and protected species. This report's secondary aim is to verify and update ecological data already available for the Site, and identify any notable changes in relation to habitat composition of the Site.

Ten Internationally protected sites were present within 15 km of the Site, the closest of which was the River Derwent Special Area of Conservation (SAC), located approximately 0.16 km to the north-east. The other sites included: Lower Derwent Valley SAC, Special Protection Area (SPA) and Ramsar, Humber Estuary SAC, SPA and Ramsar, Skipwith Common SAC and Thorne and Hatfield Moors SAC and SPA.

Six nationally important sites were present within 2 km of the Site, the closest of which included the River Derwent Site of Special Scientific Interest (SSSI), again 0.16 km to the north-east. The other sites included Lower Derwent Valley National Nature Reserve (NNR), Eskamhorn Meadows SSSI, Barn Hill Meadows SSSI, Humber Estuary SSSI and Barlow Common Local Nature Reserve (LNR).

The majority of the Site within the Drax Power Station area was dominated by areas of hard standing, existing buildings and other power station infrastructure, with small areas of grassland, plantation woodland and standing water. The land outside of the Drax Power Station was found to contain a range of habitats, including arable farmland and grassland; hedgerows and treelines; areas of scrub; standing water; areas of semi-natural and plantation woodland; and the bankside and in-channel habitats of the River Ouse and minor streams/drainage ditches.

Habitats present were suitable for the following species: amphibians (including great crested newts *Triturus cristatus*), bats, badger *Meles meles*, reptiles, birds, invertebrates, otter *Lutra lutra* and water vole *Arvicola amphibius*. The presence of Invasive Non-Native Species were also recorded including Himalayan balsam *Impatiens glandulifera*, and *Cotoneaster* sp.

The ecological impact assessment and any recommendations for mitigation and/or enhancement measures recommended as part of the PEA, will be set out in the Environmental Statement that will accompany the DCO application for the Proposed Scheme.



# 1. INTRODUCTION

---

## 1.1. BACKGROUND

- 1.1.1. WSP UK Ltd. (hereafter referred to as 'WSP') was commissioned by Drax Power Limited to conduct a Preliminary Ecological Appraisal (PEA) of an area surrounding Drax Power Station, located near Drax, Selby (centred on National Grid Reference SE 663 272, shown on **Figure 1**).

## 1.2. PROJECT BACKGROUND

- 1.2.1. Drax Power Limited intends to install post combustion carbon capture technology at up to two of the existing 600 MWe biomass power generating units at the Drax Power Station in Selby, North Yorkshire (hereafter referred to as the 'Proposed Scheme'). This will remove up to 95% of the carbon dioxide from the flue gas, resulting in overall negative emissions of greenhouse gases.
- 1.2.2. The Proposed Scheme includes the following:
- a. Carbon capture infrastructure at the Drax Power Station;
  - b. Compression and treatment of carbon dioxide at the Drax Power Station to allow connection to a National Grid carbon dioxide transport system; and
  - c. Environmental Mitigation Area to the north of the Drax Power Station.
- 1.2.3. A full description of the Proposed Scheme (as of the time of writing) is given in the Environmental Impact Assessment Scoping Report for the Proposed Scheme (WSP, 2021). The footprint of the Proposed Scheme is herein referred to as the 'Site Boundary' and highlighted by the Order Limits on **Figure 1**.
- 1.2.4. The Site is approximately 290 ha and is split into the following parcels:
- a. Drax Power Station Site – the land occupied by the Drax Power Station;
  - b. Environmental Mitigation Area – the land within the Site Boundary that may be used for environmental mitigation for the Proposed Scheme. This parcel is located to the north and northeast of the Drax Power Station; and
- 1.2.5. Laydown Area – temporary area required during the construction phase of the Proposed Scheme for temporary works including the short-term storage of materials and temporary locations of construction offices, warehouses, workshops, open air storage areas, parking and related activities, which will be reinstated to its original state following demobilisation. Laydown Areas are situated to the east of the Drax Power Station, across New Road and within the Drax Power Station Site.

## 1.3. ECOLOGICAL BACKGROUND

- 1.3.1. Existing information on likely baseline conditions was available for two previous projects that share a partial boundary with the Proposed Scheme, these are:
- a. Flue Gas Desulphurisation (FGD) Planning Application, with a Town and Country Planning Act application submitted to Selby District Council (SDC) in September 2020 (WSP, 2020); and

- b.** The Drax Repower project, which was granted a Development Consent Order (DCO) by the Secretary of State (SoS) in October 2019 (WSP, 2018a-c).
- 1.3.2. Aerial mapping and publicly available data sources<sup>1</sup> were also used to identify and update relevant pre-existing ecological records. This included using the Multi-Agency Geographic Information for the Countryside (MAGIC) web portal to identify statutory designated nature conservation sites. The MAGIC portal was also used to confirm areas included on the Ancient Woodland inventory and Priority Habitat Inventory.
- 1.3.3. Much of the land within the Drax Power Station site is dominated by areas of hard standing, existing buildings and other power station infrastructure, although some limited areas of semi-natural habitats also occur. The land surrounding the Drax Power Station contains a range of habitats, including arable farmland and grassland; hedgerows and treelines; areas of scrub; standing water (ponds); areas of semi-natural and plantation woodland; semi-improved neutral grassland and the bankside and in-channel habitats of the River Ouse and minor streams/drainage ditches.
- 1.3.4. Initial wintering bird surveys (WSP, 2020) associated with the existing Drax Jetty have identified use of fields close to Redhouse Lane by lapwing (*Vanellus vanellus*). Marsh harrier (*Circus aeruginosus*) were also recorded along the River Ouse on two occasions during these surveys.
- 1.3.5. Great crested newt (*Triturus cristatus*) have also been recorded to the north of the Drax Power Station, within the Site Boundary. These were recorded during surveys for the FGD Planning Application in June 2020 (WSP, 2020a). Peregrine falcon (*Falco peregrinus*) have also been recorded breeding on the main stack of the Drax Power Station in previous years and were recorded on Site during surveys in spring 2020 (WSP, 2022).

## 1.4. SCOPE OF REPORT

- 1.4.1. Drax Power Limited commissioned WSP to complete a PEA of land within the Site Boundary and up to 30 m from the Site Boundary, with an additional area of land to the east, comprising Carr Lane and Redhouse Lane, ending at the jetty at the bank of the River Ouse (hereafter referred to as the 'Survey Area'). The brief was:
  - a.** To provide baseline ecological information to inform the Proposed Scheme with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
  - b.** To identify and recommend further ecological input requirements and surveys to inform the Proposed Scheme.
- 1.4.2. Information on ecological mitigation and further survey recommendations are not discussed within this report are instead discussed in detail within the Environmental Statement.

---

<sup>1</sup> [www.magic.gov.uk](http://www.magic.gov.uk); [www.jncc.defra.gov.uk](http://www.jncc.defra.gov.uk);

## **1.5. RELEVANT LEGISLATION AND POLICY**

- 1.5.1. This PEA has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which protected sites, habitats and species are derived in England.
- 1.5.2. The context and applicability of each item is explained as appropriate in the relevant sections of the report.
- a.** The Environment Act 2021 (HMSO, 2021)
  - b.** The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations) (Her Majesty's Stationary Office (HMSO), 2019);
  - c.** The Wildlife and Countryside Act 1981 (as amended) (WCA) (HMSO, 1981);
  - d.** Countryside and Rights of Way (CROW) Act 2000 (HMSO, 2000);
  - e.** The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006);
  - f.** The Protection of Badgers Act 1992 (HMSO, 1992);
  - g.** The Hedgerows Regulations 1997 (HMSO, 1997);
  - h.** The Wild Mammals (Protection) Act 1996 (HMSO, 1996);
  - i.** The UK Post-2010 Biodiversity Framework (2011-2020) (Joint Nature Conservation Committee (JNCC) and Department for Environment, Food & Rural Affairs (DEFRA), 2012);
  - j.** Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011);
  - k.** UK Biodiversity Action Plan (UKBAP) (JNCC Biodiversity Reporting and Information Group, 2008)<sup>2</sup>;
  - l.** The National Planning Policy Framework (NPPF) 2019 (Department for Communities and Local Government (DCLG), 2012);
  - m.** Selby District Local Plan (SDLP) 2005 (retained policies) (Selby District Council, 2005); and;
  - n.** The Selby District Core Strategy Local Plan 2013 (Selby District Council, 2013).

---

<sup>2</sup> The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework; however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

## 2. METHODS

---

### 2.1. OVERVIEW

- 2.1.1. This PEA has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017a, 2017b and 2018), and Joint Nature Conservation Committee (JNCC, 2016); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute (2013).

This PEA is based on the following information:

- a. An ecological desk study;
- b. A habitat survey and;
- c. A protected/notable species assessment for species identified within the Survey Area.

### 2.2. DESK STUDY

- 2.2.1. The desk study was undertaken in March 2021 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties.
- 2.2.2. For the purpose of the desk study exercise, records were collated within various radii around the Site Boundary. This approach is consistent with the CIEEM's PEA guidelines (CIEEM, 2017) and CIEEM's Guidelines for Accessing and Using Biodiversity Data in the UK (CIEEM, 2016).
- 2.2.3. To provide the baseline data for the ecological desk study, the following information was requested from the North & East Yorkshire Ecological Data Centre (NEYEDC):
- a. Records of legally protected and notable species within 2 km of the Site Boundary; and
  - b. Records of non-statutory sites designated for nature conservation value within 2 km of the Site Boundary (such as Local Wildlife Sites (LWSs)).
- 2.2.4. Analysis of species data was limited to records from the last 10 years.
- 2.2.5. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of statutory designated habitats (such as Sites of Species Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)) within 5 km of the Site Boundary. This search was extended to 15 km for designated sites of international importance (Special Areas of Conservation (SACs) and Special Protection Areas (SPA)) and internationally designated Ramsar sites. The search was also extended to 30 km for SACs with bats as a qualifying feature.
- 2.2.6. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of European Protected Species licences previously granted within 2 km of the Site Boundary.

- 2.2.7. Freely downloadable datasets (available from Natural England) were consulted for information regarding Habitats of Principal Importance (HPI) within 1km and woodland listed on the Ancient Woodland Inventory (AWI).
- 2.2.8. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 500 m of the Site Boundary. This is because 500 m is the distance that, in the absence of significant barriers to their dispersal, great crested newts are known to disperse from their breeding ponds. Natural England recommends that where development-related activity is proposed within 500 m of a waterbody, its potential to support great crested newts should be taken into account (English Nature, 2001).
- 2.2.9. The findings of the desk study have been incorporated within Section 3 of this report, the results of which are illustrated on **Figures 2 - 5**.

## **2.3. HABITAT SURVEY**

- 2.3.1. A Phase 1 habitat survey was carried out by two ecologists. The survey covered the Site Boundary and up to 30 m of the surrounding landscape, with an additional area to the east along Carr Lane – Redhouse Lane (referred to as the ‘Survey Area’). The Site Location Plan is shown on **Figure 1** which displays the Site Boundary, the Survey Area is displayed on **Figure 6**. Where land access was restricted, a visual assessment was made remotely at distance, and cross referenced with aerial photography (Google Earth Pro), where possible. The purpose of the survey was to determine any potential ecological constraints and to identify whether further ecological surveys or assessments are required.
- 2.3.2. A list of plant species was compiled (Appendix C). The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019). Where appropriate consideration was given to whether habitats qualify, or could qualify, as HPI following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2008).
- 2.3.3. The survey results were digitised using Geographic Information Systems (GIS) and are presented as Phase 1 habitat maps (**Figure 6**), applying the standard habitat colour-coding and notation (JNCC, 2016).
- 2.3.4. Target notes (TN's) were made to provide information on specific features of ecological interest or habitat features too small to be mapped. These are included in Appendix A.
- 2.3.5. Any invasive plant species listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the Phase 1 habitat survey were also target noted. Detailed mapping of such species or a full survey of the Site Boundary for all invasive plant species is beyond the scope of this commission.

## **BIODIVERSITY NET GAIN CONDITION ASSESSMENT**

- 2.3.6. To inform a future Biodiversity Net Gain (BNG) assessment using the Natural England Biodiversity Metric 3.0 (hereafter referred to as BM3.0), a condition assessment of each habitat was assigned based on the information obtained during



the Phase 1 habitat survey, in accordance with the guidance. The condition assessment was undertaken using the Biodiversity Metric 3.0 Guidelines (Natural England, 2021). Habitat types mapped using the JNCC) Phase 1 habitat types, these can be translated to UK Hab classification retrospectively if required.

- 2.3.7. The River Metric (designed to assess impacts on watercourses within BM3.0) was under revision at the time of survey. As a result of this and for the purpose of this initial BNG assessment, watercourse and river habitats have been recorded although not assessed. River condition will be assessed via a modular river survey (MoRPh) prior to undertaking the BNG assessment.

## **2.4. PROTECTED SPECIES ASSESSMENT**

- 2.4.1. The potential for the Survey Area to support legally protected and notable species was assessed using the desk study results and combined with field observations during the Phase 1 habitat survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: birds (Gilbert, et al., 1998) (Bibby, et al., 2000), GCN (English Nature, 2001) (Gent & Gibson, 2003); reptiles (Froglife, 1999) (Gent & Gibson, 2003); bats (Collins, 2016) (Mitchell-Jones, 2004); badger (Harris, et al., 1989) (Roper, 2010); hazel dormouse (English Nature, 2006); otter (Chanin, 2003); water vole (Dean, et al., 2016) and invertebrates (Drake, et al., 2007) (Kirby, 2001).

## **2.5. NOTES**

- 2.5.1. Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:
- a.** Ecological survey data is typically valid for two years unless otherwise specified, for example, if conditions are likely to change more quickly due to ecological processes or anticipated changes in management.
  - b.** Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
  - c.** The Phase 1 habitat survey was carried out over multiple days; as such only a selection of all species that occur within the Site will have been recorded. However, through use of desk study information to supplement Site survey data, it is considered that an accurate assessment of the potential for the Site to support protected species or those of conservation concern was possible.
  - d.** Parts of the Site have not been subjected to a Phase 1 habitat survey during the optimal period for botanical survey (April – September) therefore it is possible that some species (including invasive non-native species) may not have been recorded.
  - e.** The Phase 1 habitat map (**Figure 6**) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats

- f. The habitat survey and the protected and notable species assessment within this PEA is based on the Site Boundary at the time of writing, displayed on **Figure 6**.

## 3. RESULTS

---

### 3.1. DESK SURVEY

#### STATUTORY DESIGNATED SITES

- 3.1.1. The desk study identified ten statutory nature conservation sites of international importance within 15 km of the Site boundary and six statutory nature conservation sites of National or Local importance within 5 km of the Site boundary. The closest internationally important designated nature conservation site is the River Derwent SAC / SSSI, located approximately 0.16 km to the north-east.
- 3.1.2. Descriptions of these sites are provided in **Table 3-1** and shown in **Figure 2**.

**Table 3.1 - Internationally and Nationally Designated Sites within 5km-15 km of the Site Boundary**

Designated Site	Designation(s)	Distance from Site Boundary	Description
<b>River Derwent</b>	SAC, SSSI	0.16 km to the north-east	The River Derwent in Yorkshire is considered to represent one of the best British examples of the classic river profile. It supports diverse communities of aquatic flora and fauna, many elements of which are nationally significant (including otter). The river is also noted for its diversity of fish species. The riverine habitat also supports an excellent breeding bird community.
<b>Barlow Common</b>	LNR	2.2 km to the west	This site was previously used for tipping ballast and has since been reclaimed. It has a mosaic of woodland, wetland, reedbeds and four large ponds. Two ponds attract wild fowl and migrating waders. 140 species of birds have been recorded on site. The colonised tip supports over 200 species of plants. This rich flora supports diverse invertebrates.
<b>Eskamhorn Meadows</b>	SSSI	2.3 km to the south-east	This is a nationally important site for species-rich neutral grassland. In addition, small numbers of curlews ( <i>Numenius arquata</i> ) and lapwings breed in the meadows.
<b>Lower Derwent Valley</b>	SPA, SAC, Ramsar, NNR	4.7 km to the north-east	The Yorkshire Derwent is considered to represent one of the best British examples of the classic river profile. It supports diverse communities of aquatic flora and fauna, many elements of which are nationally significant. During the winter the Lower Derwent is vital in maintaining internationally important population of Bewick's swans ( <i>Cygnus columbianus bewickii</i> ).
<b>Barn Hill Meadows</b>	SSSI	4.3 km to the east	Barn Hill Meadows comprise seven fields lying just to the west of Howden, in the flood plain of the Old Derwent. The site is important for its herb-rich, unimproved, neutral grassland, a habitat now uncommon in the intensively farmed landscape of Humberside and in lowland England generally.
<b>Humber Estuary</b>	SAC, SPA, SSSI, Ramsar	6.4 km to the east	<p>The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. Habitats within the Humber Estuary include Atlantic salt meadows and a range of sand dune types in the outer estuary, together with subtidal, extensive intertidal mudflats, glasswort (<i>Salicornia</i> sp.) beds and coastal lagoons. Significant fish species include river lamprey (<i>Lampetra fluviatilis</i>) and sea lamprey (<i>Petromyzon marinus</i>).</p> <p>The estuary supports important numbers of waterbirds (especially geese, ducks and waders) during the migration periods and in winter. In summer, it supports important breeding populations of bittern <i>Botaurus stellaris</i>, marsh harrier <i>Circus aeruginosus</i>, avocet <i>Recurvirostra avosetta</i> and little tern <i>Sterna albifrons</i>.</p>
<b>Skipwith Common</b>	SAC, NNR	7.2 km to the north	The northern Atlantic wet heath at Skipwith Common is the most extensive of its type in the north of England. There is a small population of marsh gentian ( <i>Gentiana pneumonanthe</i> ). The wet heath is part of transitions from open water, fen, reed and swamp to European dry heaths and other habitats. The site has great ornithological and entomological importance.
<b>Thorne &amp; Hatfield Moors</b>	SAC, SPA, SSSI	9.1 km to the south east	<p>Thorne Moor is England's largest area of raised bog, lying a few kilometres from the smaller Hatfield Moors, both within the former floodplain of the rivers feeding the Humber Estuary (Humberhead Levels), and includes the sub-components Goole Moors and Crowle Moors.</p> <p>At the time of its classification, the SPA supported 66 pairs of nightjar (<i>Caprimulgus europaeus</i>), representing at least 1.9% of the breeding population in Great Britain.</p>

## NON-STATUTORY SITES

- 3.1.3. The desk study identified nine non-statutory nature conservation sites within 2 km of the Site Boundary. A description of these sites is detailed in Table 3-2 below and displayed on **Figure 3**.
- 3.1.4. Sites of Importance for Nature Conservation (SINC) are sites important for their nature conservation value. SINC that have been deleted by the North Yorkshire SINC panel have been surveyed and assessed against the SINC selection guidelines and found not to qualify as a SINC. Some district planning authorities may still use the list of SINC in their local development plan. As such, SINC that have been deleted should be considered for any planning applications. In addition, these sites may not be of sufficient quality to qualify as a SINC but are still likely to be of higher ecological quality than other land in the area.

**Table 3.2 - Non-Statutory Designated Sites within 2km of the Site Boundary**

Designated Site	Designation(s)	Distance from Site Boundary	Description
Common Plantation	SINC	1.4 km west	No description available.
Disused Railway Embankment	SINC	0.63 km east	The site is composed of secondary scrub, tall ruderals, young broadleaved woodland and acid grassland. It no longer qualifies as a SINC, being denotified by the North Yorkshire SINC Panel in 2005.
Barmby-on-the-Marsh	LWS	1.3 km east	No description available – a ‘deleted’ wildlife site.
Brockholes	SINC	0.7 km south east	A wetland area.
Meadow East of Orchard Farm	SINC	1.2km west	An area of neutral grassland.
Barmby Pond	LWS	1.94 km north east	No description available – a ‘deleted’ wildlife site.
Cobble Croft Wood	SINC	1.4 km west	No description available.
Hagg Green Lane	SINC	1.7 km north	No description available.
Sand Pitt Wood and Barffs Close Plantation	SINC	1.9 km west	No description available.



## PRIORITY HABITATS

- 3.1.5. The desk study identified three priority habitat types within 2 km of the Site Boundary. Details of these are provided in Table 3-5 below and displayed in **Figure 4**. No records of ancient woodland were returned within 2km of the Site Boundary.

**Table 3.3 - Priority habitats within 2km of the Site Boundary**

Habitat	Approximate distance (km) of closest record
Mudflats	Immediately adjacent to the north of the Site Boundary.
Deciduous woodland	Immediately adjacent to the Site Boundary.
Traditional orchard	Immediately adjacent to the Site Boundary at Drax Abbey Farm.
Coastal and floodplain grazing marsh	1.2 km to the west of the Site Boundary.

- 3.1.6. A review of Ordnance Survey maps and aerial mapping identified several ponds to be present within 500 m of the Site Boundary of unknown flow regime. Hedgerows are also visible via aerial mapping. Both waterbodies and hedgerows are a potential HPI.
- 3.1.7. The waterbodies and areas of standing water within the Survey Area are discussed further below in Section 3.3.

## 3.2. HABITAT SURVEY

### OVERVIEW

- 3.2.1. The Survey Area comprised a mosaic of urban and natural habitats and features.
- 3.2.2. Much of the land within the Drax Power Station site is dominated by areas of hard standing, existing buildings and power station infrastructure, with small areas of grassland, plantation woodland and standing water.
- 3.2.3. The land outside of the Drax Power Station was found to contain a range of habitats, including arable farmland and grassland; hedgerows and treelines; areas of scrub; standing water; areas of semi-natural and plantation woodland; and the bankside and in-channel habitats of the River Ouse and minor streams/drainage ditches.
- 3.2.4. The following account summarises the findings of the Phase 1 habitat survey. A total of 25 Phase 1 habitat types were identified in the Survey Area, these have been mapped on **Figure 6**. A description of the dominant and notable species, the composition and management of each habitat is provided below, and an indicative species list is provided in Appendix C. Target notes are provided in Appendix A and photographs in Appendix B. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2010). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

## HABITATS

### A.1.1 Semi-Natural Broadleaved Woodland

- 3.2.5. This habitat was predominantly found along the eastern boundary of the Drax Power Station. It comprised wych elm *Ulmus glabra*, crack willow *Salix fragilis*, elder *Sambucus nigra*, hawthorn *Crataegus monogyna*, alder *Alnus glutinosa*, with an understory of bramble *Rubus fruticosus* agg., dog rose *Rosa canina*, mugwort *Artemisia vulgaris*, burdock *Arctium* sp., Yorkshire fog *Holcus lanatus*, goat willow *Salix caprea*, common restharrow *Ononis repens* and creeping cinquefoil *Potentilla reptans*.
- 3.2.6. A stand of semi natural broadleaved woodland was also located to the north of the existing Power Station immediately adjacent to the boundary fence, and was dominated by willow *Salix* sp., with hazel *Corylus avellana* and oak *Quercus* sp. also present.

### A.1.1.2 Plantation Broadleaved Woodland

- 3.2.7. Plantation broadleaved woodland was the most dominant woodland habitat within the Survey Area, predominantly scattered within the Drax Power Station and along wooded field margins. The trees were typically of immature age with signs of active management.
- 3.2.8. Trees recorded within this habitat include alder, silver birch *Betula pendula*, hornbeam *Carpinus betulus*, common hawthorn, ash *Fraxinus excelsior*, aspen *Populus tremula*, pedunculate oak *Quercus robur*, crack willow, willow sp. *Salix* sp., lime *Tilia* sp. and cherry *Prunus* sp.
- 3.2.9. The ground flora of the broadleaved plantation woodlands was generally poor, limited to areas of bramble, ivy *Hedera helix*, tufted hair grass *Deschampsia cespitosa*, cock's-foot *Dactylis glomerata* or dog rose.

### A.1.3.2 Mixed Plantation Woodland

- 3.2.10. This habitat was found within a small area to the east of the southern cooling towers, and comprised frequent Leyland cyprus *Cupressus x leylandii*, Scots pine *Pinus sylvestris*, field maple *Acer campestre* and silver birch.
- 3.2.11. The mixed plantation woodland was similar in age and structure to the broadleaved plantation woodland elsewhere within the Survey Area.
- 3.2.12. Mixed plantation woodlands were generally dominated by willow, sycamore *Acer pseudoplatanus* and Scot's pine, with alder, field maple, pedunculate oak *Quercus robur* and ash frequently encountered. Other tree species recorded included elder, beech *Fagus sylvatica*, crab apple *Malus sylvestris*, hazel and cherry.

### A.2.1 Dense/Continuous Scrub

- 3.2.13. Willow and alder are the dominant species of this habitat found on the western boundary of the northern cooling towers and within a small area to the north of the

Survey Area. Other species include silver birch, Himalayan balsam *Impatiens glandulifera*, nettle *Urtica dioica* and occasional *Buddleja* sp.

- 3.2.14. Outside of the main power station these were typically dominated by willow or bramble. Several areas of dense scrub were associated with woodland or comprised a mosaic with ruderal and grassland areas. Species recorded within dense scrub included silver birch, Himalayan balsam, nettle and buddleia.

### **A.2.2 Coniferous Plantation**

- 3.2.15. A line of Scot's pine has been planted along a north-south boundary, located to the north of the cooling towers.

### **A.3.1 Broadleaved Scattered Trees**

- 3.2.16. Scattered trees appear along fence lines or road boundaries. Species include common hawthorn, mature pear *Pyrus* sp., holm oak *Quercus ilex*, ash and rare instances of common beech and pedunculate oak. Whitebeam *Sorbus aria* is present over areas of amenity grassland.

### **B1.2 – Semi-improved Calcareous Grassland**

- 3.2.17. A single area of semi-improved calcareous grassland was recorded directly adjacent to the existing Drax Jetty. The grassland was moderately managed with a sward height of 40 to 60 cm. Species recorded within the grassland included Devil's-bit scabious *Succisa pratensis*, sheep's fescue *Festuca ovina*, Yorkshire fog, creeping bent *Agrostis stolonifera*, ribwort plantain *Plantago lanceolata*, common hogweed *Heracleum sphondylium* and bush vetch *Vicia sepium*.

### **B.2.2 Semi-improved Neutral Grassland**

- 3.2.18. Small areas of species-rich neutral grassland, located directly north, north-west and north-east of the northern-most cooling towers; comprise abundant ox-eye daisy *Leucanthemum vulgare* and false oat grass *Arrhenatherum elatius*, with cock's-foot, compact rush *Juncus conglomeratus*, false fox sedge *Carex otrubae*, black knapweed *Centaurea nigra*, common bent *Agrostis capillaris*, ladies bedstraw *Galium verum*, yarrow *Achillea millefolium*, hard rush *Juncus inflexus*, buttercup *Ranunculus* sp, Yorkshire fog, ragged robin *Silene flos-cuculi*, Timothy *Phleum pratense*, spotted orchid *Dactylorhiza fuchsii*, tufted hair grass, with scattered blocks of bramble and hawthorn scrub, and occasional alder.
- 3.2.19. A small area surrounding a patch of dense scrub (at **TN16** on **Figure 6**) was identified to support green winged orchid *Anacamptis morio*. Other species recorded here include abundant bird's-foot trefoil *Lotus corniculatus*, Yorkshire Fog, common ragwort *Jacobaea vulgaris*, creeping buttercup *Ranunculus repens*, frequent figwort *Scrophularia nodosa*, soft rush *Juncus effusus*, occasional cock's-foot, annual meadow-grass *Poa annua*, occasional spear thistle *Cirsium vulgare*, frequent selfheal *Prunella vulgaris* and occasional perforated St John's Wort *Hypericum perforatum*.

- 3.2.20. A larger area is located in the furthest northerly point of the Power Station, which is dominated by Yorkshire fog, with abundant brown bent *Agrostis vinealis*, and occasional soft rush, compact rush, alder and teasel *Dipsacus fullonum*, clover *Trifolium* sp. and figwort are also frequent.
- 3.2.21. A strip of semi-improved neutral grassland, encroached by scrub, is also found along the eastern boundary. Species found here include Yorkshire fog, bushgrass *Calamagrostis epigejos*, false oat grass, cock's-foot, meadow cats tail *Phleum pratense*, selfheal, hard rush, creeping thistle *Cirsium arvense*, curly dock *Rumex crispus*, fleabane *Erigeron* sp. hedge woundwort *Stachys sylvatica*, bristly oxtongue *Picris echioides*, meadow vetchling *Lathyrus pratensis*, rough-stalked meadow-grass *Poa trivialis*, nettle and spear thistle.
- 3.2.22. Another area is found within the north east boundary of the Power Station and included areas of planted ox-eye daisy, black knapweed, crested dogs tail *Cynosurus cristatus*, bird's-foot trefoil, false oat grass, hop trefoil *Trifolium campestre*, cowslip *Primula veris*, ribwort plantain, Yorkshire fog and included strips of unmown grassland with mown strips by the roadside.
- 3.2.23. An area of semi-improved neutral grassland was recorded in the north of the Survey Area adjacent to Drax Abbey Farm. The grassland was surveyed from a distance and was noted to be dominated by rough meadow-grass, with false oat grass and cock's-foot.

#### **B.4 Improved Grassland**

- 3.2.24. Several areas of improved grassland were recorded within the Survey Area, typically comprised of sheep grazed pasture. The improved grasslands were dominated by perennial rye grass *Lolium perenne*, with other species noted being limited to cock's-foot, Yorkshire fog and false oat grass recorded around the grassland edges.

#### **B.5 Marshy Grassland**

- 3.2.25. A large area of marshy grassland with scattered scrub was located within the north-west of the Survey Area, with a smaller strip extending from here to the south east. Dominant grasses included tufted hair grass, false oat grass, cock's-foot, reed canary grass *Phalaris arundinacea*, with occasional creeping thistle, common knapweed, compact rush, bulrush *Typha latifolia*, teasel, yarrow, tansy *Tanacetum vulgare*, hogweed, common sorrel *Rumex acetosa*, creeping buttercup, ribwort plantain and selfheal. The scattered scrub included hazel, common hawthorn, ash, silver birch and bramble. At the time of survey, a water level was visible due to recent high rainfall, with frequent mounds being drier and dominated by cock's-foot, false oat grass and common thistle.

#### **B.6 Poor Semi-improved Grassland**

- 3.2.26. Poor semi-improved grassland was found within the central section of the Survey Area in several scattered areas, areas along the banks of the River Ouse and in fields grazed by horses. Perennial rye grass was dominant with substantial other grasses including false oat grass, cock's-foot, Yorkshire fog, and perennial species

including rosebay willowherb *Chamaenerion angustifolium*, creeping buttercup, nettle, common knapweed, with reed canary grass and broadleaved dock *Rumex obtusifolius* located in the wetter areas; where the ground appeared waterlogged.

- 3.2.27. Poor semi-improved grassland was also grazed by horses in some areas, resulting in patches of un-vegetated ground.
- 3.2.28. Poor semi-improved grassland was also found along the banks of the River Ouse. The banks are actively managed, and the sward had been mown to a height of 20-40 cm. Cock's-foot dominates this area with Yorkshire fog and perennial species including cow parsley *Anthriscus sylvestris*, herb Robert *Geranium robertianum*, ground ivy *Glechoma hederacea*, creeping buttercup, hogweed, ribwort plantain and smooth hawk's-beard *Crepis capillaris*.
- 3.2.29. Sections of less managed grassland was found in the north west corner of a field grazed by sheep, with a sward height of 75-100 cm. Yorkshire fog dominated this habitat, with occasional cock's-foot and rare hard rush, reed canary grass, tufted hair grass, creeping thistle and sow thistle *Sonchus oleraceus*.

#### **C.3.1 Other Tall Herb and Fern – Ruderal**

- 3.2.30. Ruderal vegetation was observed on the edge of woodland in the north east corner of the Survey Area, with bramble dominating the habitat and nettle, willowherb and clover also present.
- 3.2.31. An area of ruderal was present leading to scrub on the riverbank. Himalayan balsam was present here, with occasional common reed *Phragmites australis*, reed canary grass, frequent common nettle and with bramble scrub present in patches.

#### **E.3.2 Fen – Basin mire**

- 3.2.32. A small area of basin mire was recorded near the western extent of the Site to the north of the power station. This consisted of a small area of remaining open water with common reed, bulrush and marginal willow scrub.

#### **F.1 Swamp**

- 3.2.33. An area of swamp was identified in the north-western boundary of the Survey Area. Bulrush dominated this area of standing water, with occasional common centaury *Centaureum erythraea*, frequent figwort, Yorkshire fog, alder, marsh thistle *Cirsium palustre*, ragwort and Himalayan balsam.
- 3.2.34. An area of swamp was also identified towards the centre of the Survey Area. While no standing water was visible, the swamp was entirely dominated by common reed with yellow iris *Iris pseudacorus* also present at edges.
- 3.2.35. A third area of this habitat was found within the western areas of Drax Power Station, close to two balancing ponds. Some standing water was visible here but the pond area itself was dominated by common reed, with great willowherb *Epilobium hirsutum* and cotoneaster sp. frequent at the edges.



### **G.1 Standing Water**

- 3.2.36. Ponds are present within the Survey Area and wet ditches are found in the north and west of the Survey Area, perpendicular to the River Ouse and are generally well vegetated with soft rush or common reed. Willow and hazel scrub is found at the edges of the natural ponds. Settling ponds are also present with the Drax Power Station and were noted to be almost entirely silted.

### **G.2 Running Water**

- 3.2.37. Carr Dike is within the centre of the Survey Area, north of the power station.
- 3.2.38. A small section of the River Ouse is located at the eastern extent of the Site. An unnamed ditch runs into the River Ouse and runs adjacent to Redhouse Lane.

### **J.1.1 – Cultivated / Disturbed Land – Arable**

- 3.2.39. Arable fields were recorded within the north and east of the Survey Area. These largely had very little area of field margin. A planted area of sunflower *Helianthus* sp. and other ruderal species was found along the north-western border.
- 3.2.40. A small area of waterlogged ground was also identified within the northern area of Survey Area, planted with barley. Sunflower was recorded here, alongside reed canary grass, common reed and sow thistle.

### **J.1.2 – Cultivated / Disturbed Land – Amenity Grassland**

- 3.2.41. Small, scattered patches of amenity grassland was present within the Drax Power Station and prevalent towards the south of the Survey Area.

### **J.1.4 Introduced Shrub**

- 3.2.42. Introduced shrub was found within areas of the power station largely associated with road margins and decorative planting near office buildings. Species recorded include some native species such as hawthorn and silver birch, with introduced species *Viburnum* sp and mahonia *Berberis aquifolium*.

### **J.2.1 Intact Hedge- Native, Species-rich**

- 3.2.43. A small area of native species-rich hedge was identified within the central-west section of the Survey Area, between a strip of marshy grassland and tall ruderal habitat. Species here included field maple, which dominated the hedgerow, hazel, hawthorn and dog rose.

### **J.2.3.1. Hedge with Trees - Native and Species-rich**

- 3.2.44. Two areas of tree-lined native hedges are found within the central areas of the Survey Area, comprising holly *Ilex aquifolium*, common beech, whitebeam and blackthorn *Prunus spinosa*.

#### J.2.3.2. Hedge with Trees – Species-poor

- 3.2.45. Species-poor hedges with mature trees were identified in several locations across the Survey Area. These hedgerows were dominated by common hawthorn, with no more than three other species including occasional ash, Scots pine, alder, pedunculate oak, sycamore, field maple and cherry. The understory generally comprised cleavers *Galium aparine*, cock's-foot, Yorkshire fog, ground ivy and nettle.

#### J.2.6 Dry Ditch

- 3.2.46. Dry ditches were present in the east of the Site, along woodland edges, adjacent to fields and roads. Hawthorn and bramble was present as scrub within the ditches in some places.

#### J.3.6 Buildings

- 3.2.47. The area of the site within the main power station largely consists of buildings and specific structures in used for the running of the power station.

#### J4 Bare Ground with C.3.1. Tall Ruderal

- 3.2.48. Bare earth with scattered tall ruderal species is found to the south-east of the Site, bordering the southern cooling towers. The area is also used as a construction compound. Occasional poppy *Papaver*, mullein *Verbascum* sp., ox-eye daisy and sow thistle are found here.
- 3.2.49. Bare earth being worked as part of the Drax Power station was recorded on the western boundary to the north of the main power station area.

### **3.3. PROTECTED AND NOTABLE SPECIES ASSESSMENT**

- 3.3.1. The potential for the Survey Area to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within the Survey Area. Desk study records have only been considered below if they are recent (from the last 10 years) and/or if they relate to species that may be supported by habitats within the Survey Area. A summary of desk study data is presented within **Appendix D**. Details regarding species licences are discussed below and presented within **Appendix E**. Habitats present within the Survey Area are suitable for the following species; therefore, further consideration is given below to the likelihood for these species to be present within the Survey Area:

- a. Amphibians
- b. Bats
- c. Badger
- d. Reptiles
- e. Birds
- f. Otter
- g. Water vole

## **h. Terrestrial invertebrates**

### **Amphibians**

- 3.3.2. Nine records of common toad and three of great crested newt were returned by the desk study within 2 km of the Site Boundary.
- 3.3.3. A Habitat Suitability Index (HSI) assessment was conducted at areas of standing water found within and outside of the Survey Area by WSP (WSP, 2020). The ponds were considered to offer average to excellent quality habitat for great crested newt. Suitable terrestrial habitat for foraging and sheltering was also identified within the north west of the site amongst rubble piles and within the marshy grassland.

### **Bats**

- 3.3.4. Two European Protected Species Bat Licences exist within 2 km of the Site Boundary. These include a licence for Brandt's bat *Myotis brandtii*, common pipistrelle *Pipistrellus pipistrellus*, Natterer's bat *Myotis nattereri* and whiskered bat *Myotis mystacinus*, located 1.2 km west of the Site Boundary, dated from 2014. A second record for a licence exists for Brandt's bat and whiskered bat, located 1.4 km north of the Site Boundary, dated from 2012. Both licences are for the destruction of a resting place only.
- 3.3.5. No other records of bat roosts were provided within 2 km of the Site. Twenty records of bats foraging, or flying were provided by NEYEDC. These records comprised three species of bat which were common pipistrelle; soprano pipistrelle *Pipistrellus pygmaeus* and noctule *Nyctalus noctula*. In addition, records of unidentified bats, that were not identified to species level, were provided. The closest records were all recorded to the west and north of the Site Boundary. The most recent record was of common pipistrelle, which was recorded approximately 1.5 km north-west of the site in 2018.
- 3.3.6. The treeline field margins located in the north of the Site provide suitable habitat for foraging and commuting bats. Watercourses may also provide foraging and commuting resource for bats within the area.
- 3.3.7. None of the buildings were noted to provide suitable features that could be utilised for roosting bats, however numerous trees were considered to offer suitable roosting habitat. These were identified across the Survey Area, predominantly within the east and the north, and the locations were identified as target notes (TN) and are shown on **Figure 6**:
  - a. TN2 – a mature oak along a field boundary within the eastern Survey Areas. It had broken limbs on an eastern aspect
  - b. TN6 – a mature oak along a field boundary to the east of the Drax Power Station, initially appears to be well managed.
  - c. TN8 – a mature oak with visible wounds and damage, located along a field boundary north of the Drax Power Station
  - d. TN16 – a large mature ash tree with multiple features suitable for roosting bats, situated along a field boundary in the north of the Survey Area

- e. TN22 – a heavily ivy-clad mature tree on the corner of a woodland, within an area of scrub in the west of the Survey Area.

### **Badger**

- 3.3.8. Twenty-four records of badger were provided within 2 km of the Site within the last 10 years. The most recent record was recorded approximately 100 m west of the Site in 2018.
- 3.3.9. Evidence of badger was recorded within the Survey Area; however, the locations have not been disclosed for welfare purposes and the results will be presented separately in a confidential document.
- 3.3.10. Suitable foraging and commuting habitats were present including semi-natural broadleaved woodland, both broadleaved and mixed plantation woodlands and wooded and hedgerow field margins.

### **Reptiles**

- 3.3.11. Twenty reptile records were returned within 2 km of the Site, all of which were for grass snake *Natrix Helvetica*. The most recent record was approximately 800 m north-west of the Site in 2018.
- 3.3.12. The neutral grassland located within the Woodstore area of the Drax Power Station provides suitable habitat reptiles amongst the rubble piles, which offer basking and refuge opportunities.
- 3.3.13. Across the Survey Area, the connecting habitats of woodland, watercourses, scrub and grassland all provide foraging and sheltering opportunities for reptiles.

### **Birds**

- 3.3.14. The River Derwent SSSI lies within 0.16 km north-east of the Site Boundary and is noted for its riverine habitat which supports an excellent breeding bird community. The Humber Estuary SPA, SSSI and Ramsar located 4.9 km to the east is notified in part for its internationally and nationally important numbers of waterbirds during the migration periods and in winter. In summer, it is noted for supporting important breeding populations of bittern *Botaurus stellaris*, marsh harrier *Circus aeruginosus*, avocet *Recurvirostra avosetta* and little tern *Sterna albifrons*.
- 3.3.15. A total of 25 records of protected and notable bird species were returned within 2 km of the Site and records of Schedule 1 bird species such as barn owl *Tyto alba* and peregrine falcon *Falco peregrinus* were identified adjacent to the Site Boundary.
- 3.3.16. During the surveys conducted in 2020 (WSP, 2020), it was considered possible that peregrine falcon could be nesting on the large vent stack within the Drax Power Station. Several nests of swallow were identified on Site during this time.
- 3.3.17. All woodland and scrub habitats were considered to offer suitable nesting habitat for more common bird species.

### Otter

- 3.3.18. No records of otter were returned by the desk study; however it was considered that the River Ouse at TN1 does provide suitable couch opportunities beneath the jetty, with potential foraging or lay-up areas available along the connecting Carr Dike within the north of the Survey Area. The River Ouse is also connected to the River Derwent SAC, which has listed otter as one of the qualifying species for this site. The Humber Estuary, directly connected to the River Ouse, is also known to support otter.

### Water Vole

- 3.3.19. Thirteen records of water vole were returned by the desk study, with the closest record lying 400 m of the Site Boundary.
- 3.3.20. All waterbodies and ditches within the Survey Area were considered to offer suitable habitat for water vole.

### Terrestrial Invertebrates

- 3.3.21. Six records of invertebrate species were returned within 2 km of the Site. One record is of a small heath *Coenonympha pamphilus* approximately 55 m west of the Site. The small heath butterfly is a species of principle importance (SPI) under Section 41 of the NERC Act. It can be found in a variety of habitats which typically include; heathland, downland and coastal dunes, but it can also be found on road verges, moorland and in woodland rides. Caterpillar foodplants include fine grasses, especially fescues *Festuca* spp., meadow-grasses *Poa* spp., and bents *Agrostis* spp.
- 3.3.22. The neutral grassland located within the Woodstore area of the power station provides suitable habitat for a range of terrestrial invertebrates.
- 3.3.23. Terrestrial invertebrates recorded within the Survey Area include meadow Brown *Maniola jurtina*, gatekeeper *Pyronia tithonus*, ringlet *Aphantopus hyperantus*, small tortoiseshell *Aglais urticae*, red admiral *Vanessa atalanta*, small skipper *Thymelicus sylvestris*, large white *Pieris brassicae*, small white *Pieris rapae*, broad-bodied chaser *Libellula depressa*, brown hawker *Aeshna grandis*, banded demoiselle *Calopteryx splendens*, cinnabar moth *Tyria jacobaeae* caterpillars, common field grasshopper *Chorthippus brunneus*, common green grasshopper *Omocestus viridulus* and Roesel's bush cricket *Roeseliana roeselii*.

### Plants

- 3.3.24. No protected and/or notable results for vascular plant species were returned during the desk study.
- 3.3.25. Green winged orchid is present within neutral grassland surrounding a patch of dense scrub, located at TN24. This species is classified as Near Threatened on the Vascular Plant Red Data List for Great Britain.



### **Invasive Non-Native Species**

- 3.3.26. Eighteen records of invasive non-native plants were recorded within 2 km of the Site. Those listed were giant hogweed *Heracleum mantegazzianum*, Himalayan balsam and rhododendron *Rhododendron ponticum*.
- 3.3.27. Himalayan balsam was recorded within the Survey Area, generally in areas of dense scrub or tall ruderal habitats. *Cotoneaster* sp. was recorded in an area of swamp close to two balancing ponds within the Drax Power Station. At the time of survey, it was not possible to identify the cotoneaster to species level, as it was not fruiting or flowering (which aids identification). However, its form and leaf arrangement are similar to species listed as invasive non-native species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to plant or otherwise cause to grow any species listed on Schedule 9 of the Act and therefore for the purpose of this assessment, the cotoneaster recorded on Site has been treated as an invasive species.

## **4. DISCUSSION**

---

- 4.1.1. This section provides a summary of the findings of the PEA for relevant habitats and species. It does not discuss mitigation or recommendations for further survey, which will be discussed within the Ecology Chapter of the Environmental Statement.

### **4.2. HABITATS**

- 4.2.1. The Phase 1 habitat survey identified 25 habitats within the Survey Area.
- 4.2.2. Six Habitats of Principal Importance (HPI) were identified as part of the PEA. These include lowland deciduous mixed woodland, ponds and hedgerows (including species-rich hedgerows); which were recorded within the Survey Area, mudflats were identified along the banks of the River Ouse, traditional orchards were identified to the south east of the Site Boundary and coastal and floodplain grazing marsh was identified to the west.

### **4.3. PROTECTED AND NOTABLE SPECIES**

- 4.3.1. The results of the desk study, Phase 1 habitat Survey and protected species assessment highlighted the potential presence of several protected species or species of conservation concern within the Survey Area. These include amphibians, bats, badger, water vole, reptiles, birds, terrestrial invertebrates and vascular plants.
- 4.3.2. The legal protection afforded to these species is outlined within Appendix D.

## REFERENCES

---

- BCT (2014). Artificial Lighting and Wildlife – Interim Guidance: Recommendations to help minimise the impact of artificial lighting. BCT, London.
- Bibby C.J, Burgess N.D, Hill D.A, Mustoe S.H. (2000) Bird Census Techniques. Second Edition. Elsevier Ltd.
- Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough
- CIEEM (2017a). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017b). Guide to Ecological Surveys and Their Purpose. CIEEM, Winchester.
- Construction Industry Research and Information Association (CIRIA). (2015). Environmental good practice on site (fourth edition) (C741). Charles, P., Edwards, P (eds). CIRIA, London.
- CIEEM (2019), Advice Note: On the Lifespan of Ecological Reports and Surveys. CIEEM. Winchester Collins J. (ed.) (2016). Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.
- Construction Industry Research and Information Association (CIRIA). (2015). Environmental good practice on site (fourth edition) (C741). Charles, P., Edwards, P (eds). CIRIA, London.
- Dean, M., Strachan, R., Gow, D. and Andrews R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds. Fiona Matthews and Paul Chanin. The Mammal Society, London.
- English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.
- Environment Agency (EA). (2014). Pollution Prevention Guidance. Available online at: <https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg> [Accessed 30/03/2020].
- Froglife (1999). Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice sheet 10. Froglife, Halesworth.
- Gent, A. and Gibson, S. (2003). Herpetofauna Workers Manual. JNCC. Peterborough.
- Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. The Royal Society for the protection of Birds (RSPB) Sandy, Bedfordshire.
- Harris S, Cresswell P and Jefferies D (1991). (Report) Surveying Badgers. The Mammal Society, Bristol.

HMSO (Her Majesty's Stationary Office) (1981). Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000). HMSO, Norwich.

HMSO (1990). Environmental Protection Act.

HMSO (1991). Environmental Protection (Duty of Care) Regulations 1991.

HMSO (1992). The Badgers Act.

HMSO (1996). The Wild Mammals (Protection) Act. HMSO, London.

HMSO (1997). The Hedgerows Regulations, SI 1997/1160. HMSO, London.

HMSO (2006). Natural Environment and Rural Communities Act. HMSO, Norwich.

HMSO (2010). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations

Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC, Peterborough.

NYCC (2008). Craven Biodiversity Action Plan.

Mitchell- Jones, A.J (2004). Bat Mitigation Guidelines. English Nature.

Roper, T.J. (2010). Badger. Harper Collins.

The Town and Country Planning Act (2015). Schedule 2, Part 9, Class A (Development by highways authorities) of the Town and Country Planning (General Permitted Development) Order 2015 (as amended). HMSO, London

WSP (2022) Wintering Bird Survey, Drax Bioenergy with Carbon Capture and Storage

WSP (2020). Flue Gas Desulphurisation (FGD) Demolition: Ecological Impact Assessment.

WSP (2018a) The Drax Power (Generating Stations) Order, Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire. Appendix 9.1: Preliminary Ecological Appraisal

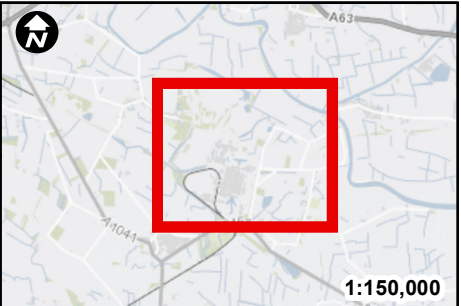
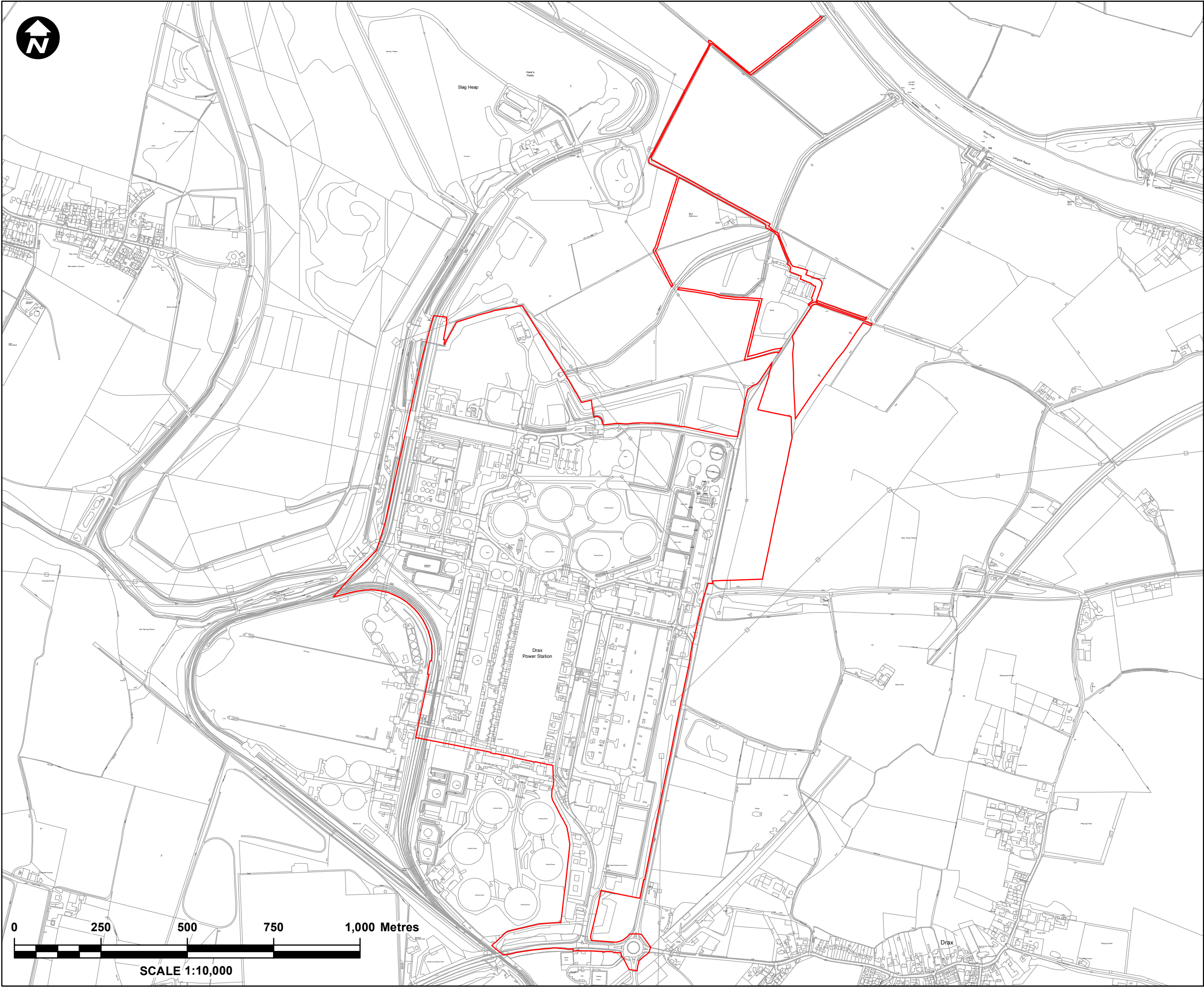
WSP (2018b). The Drax Power (Generating Stations) Order, Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire. Appendix 9.4: Badger Survey

WSP (2018c) The Drax Power (Generating Stations) Order, Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire. Appendix 9.5: Reptile Survey

**Figure 1 - Site Boundary**







**Key:**  
 Order Limits

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(a)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



**PROJECT TITLE**  
**DRAX BECCS  
DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
ORDER LIMITS

**DRAWING STATUS**  
**FOR ISSUE**

<b>DRAWN</b> LH	<b>CHECKED</b> BS	<b>APPROVED</b> MM	<b>AUTHORISED</b> NA
--------------------	----------------------	-----------------------	-------------------------

<b>SCALE @ A3 SIZE</b> 1:10,000	<b>DATE</b> 13/05/2022	<b>REVISION</b> P01
------------------------------------	---------------------------	------------------------

**DRAWING NUMBER**  
**FIGURE 1**



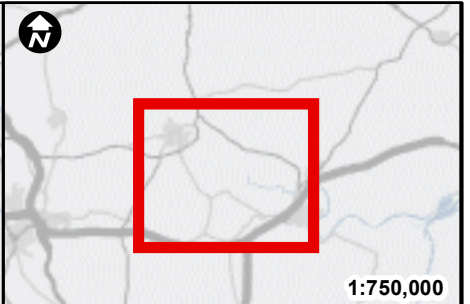
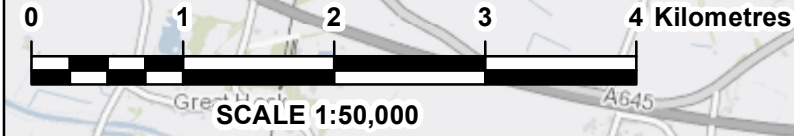
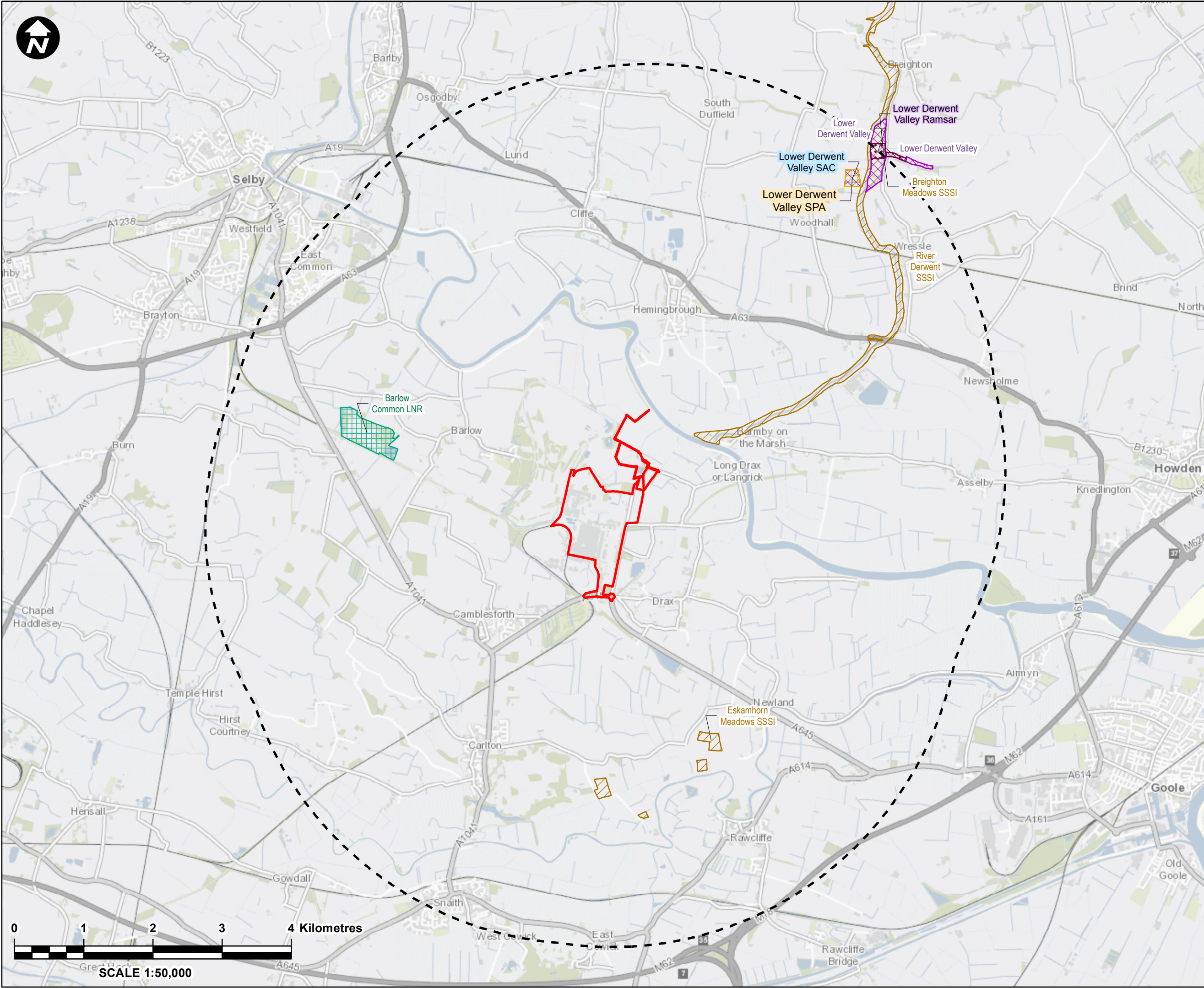
**Figure 2 - Statutory Designated Sites**











- Key:**
- Order Limits
  - 5 km Buffer
  - Local Nature Reserve (LNR)
  - National Nature Reserve (NNR)
  - Special Protection Area (SPA)
  - Special Area of Conservation (SAC)
  - Ramsar Site - Wetland of International Importance
  - Site of Special Scientific Interest (SSSI)

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



**PROJECT TITLE**  
**DRAX BECCS  
DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
STATUTORY DESIGNATED SITES  
(SHEET 2 OF 2)

**DRAWING STATUS**  
**FOR ISSUE**

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	DC	LR

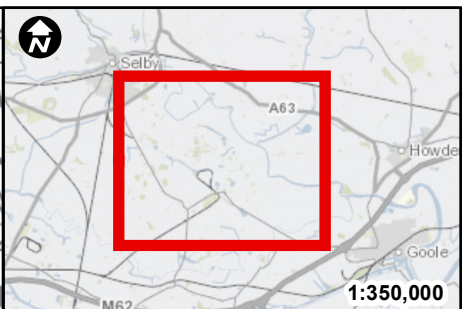
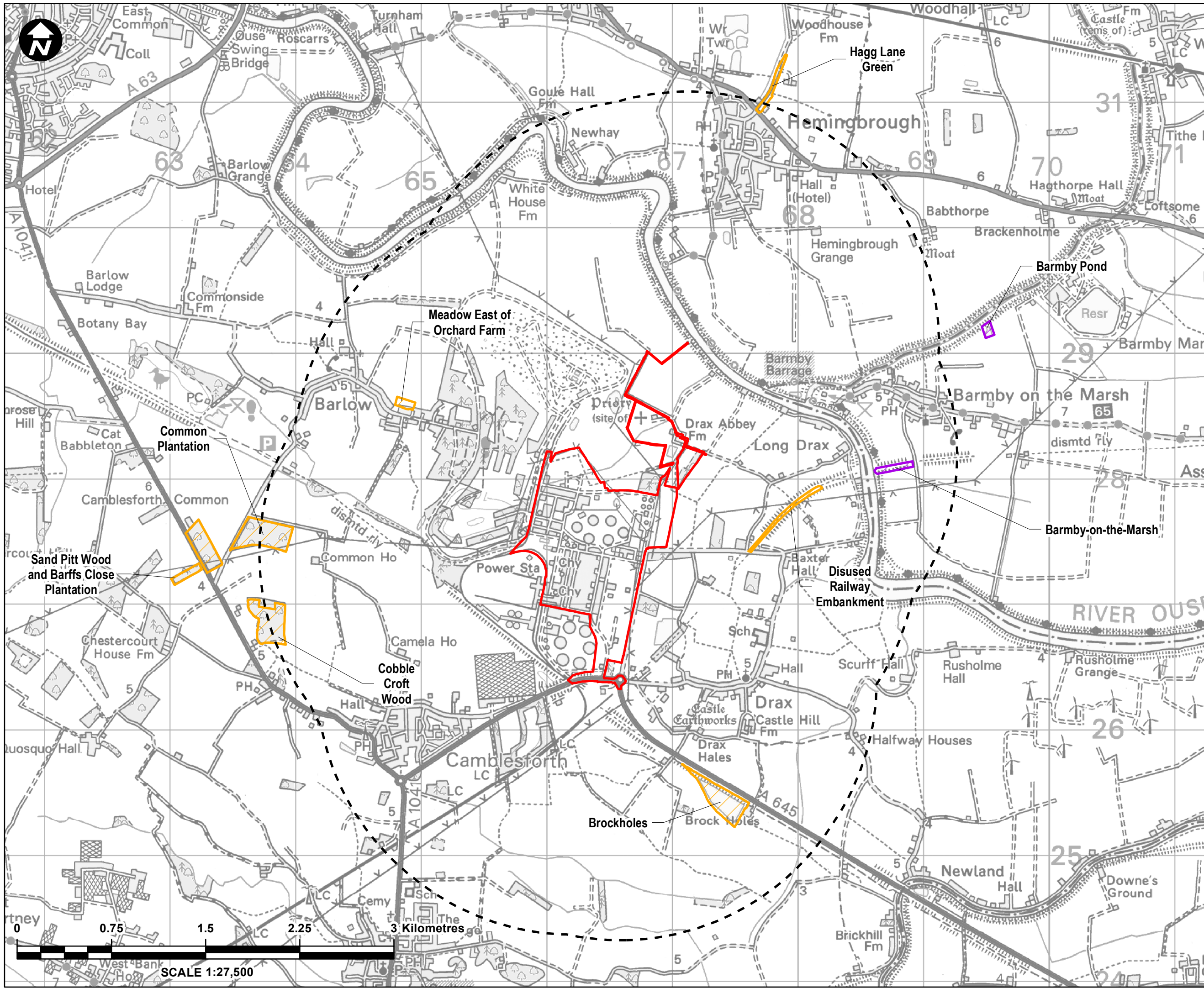
SCALE @ A3 SIZE	DATE	REVISION
1:50,000	13/05/2022	P01

**DRAWING NUMBER**  
**FIGURE 2**



**Figure 3 - Non-Statutory Designated Sites**





- Key:**
- Order Limits
  - 2 km Study Area
  - Local Wildlife Site
  - Sites of Importance for Nature Conservation

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



**PROJECT TITLE**  
**DRAX BECCS  
DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
NON-STATUTORY DESIGNATED  
SITES

**DRAWING STATUS**  
FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	DC	LR

SCALE @ A3 SIZE	DATE	REVISION
1:27,500	13/05/2022	P01

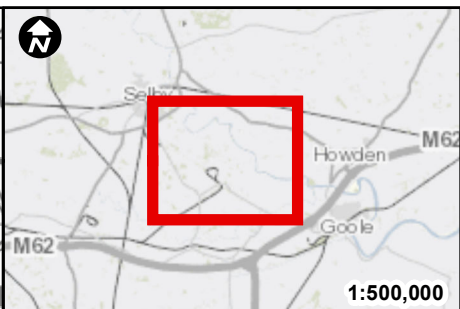
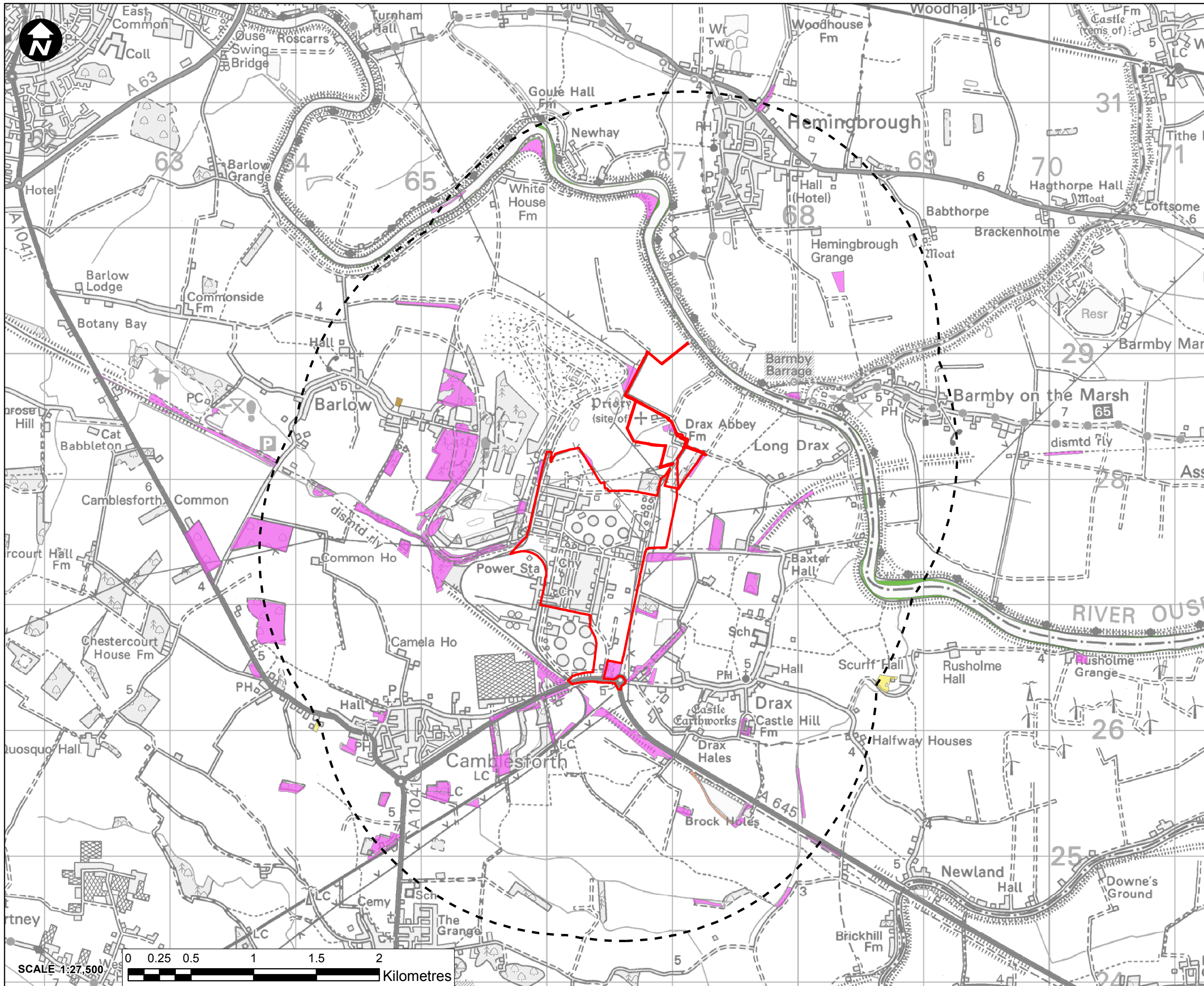
**DRAWING NUMBER**

**FIGURE 3**

**Figure 4 - Habitats of Principal Importance and Ancient Woodland**







- Key:**
- Order Limits
  - 2 km Study Area
  - Coastal and floodplain grazing marsh
  - Deciduous woodland
  - Lowland fens
  - Mudflats
  - Traditional orchard

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)

Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. Contains OS data © Crown Copyright and database right 2020



**PROJECT TITLE**  
**DRAX BECCS DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY - APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
HABITATS OF PRINCIPAL IMPORTANCE

**DRAWING STATUS**  
FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	DC	LR

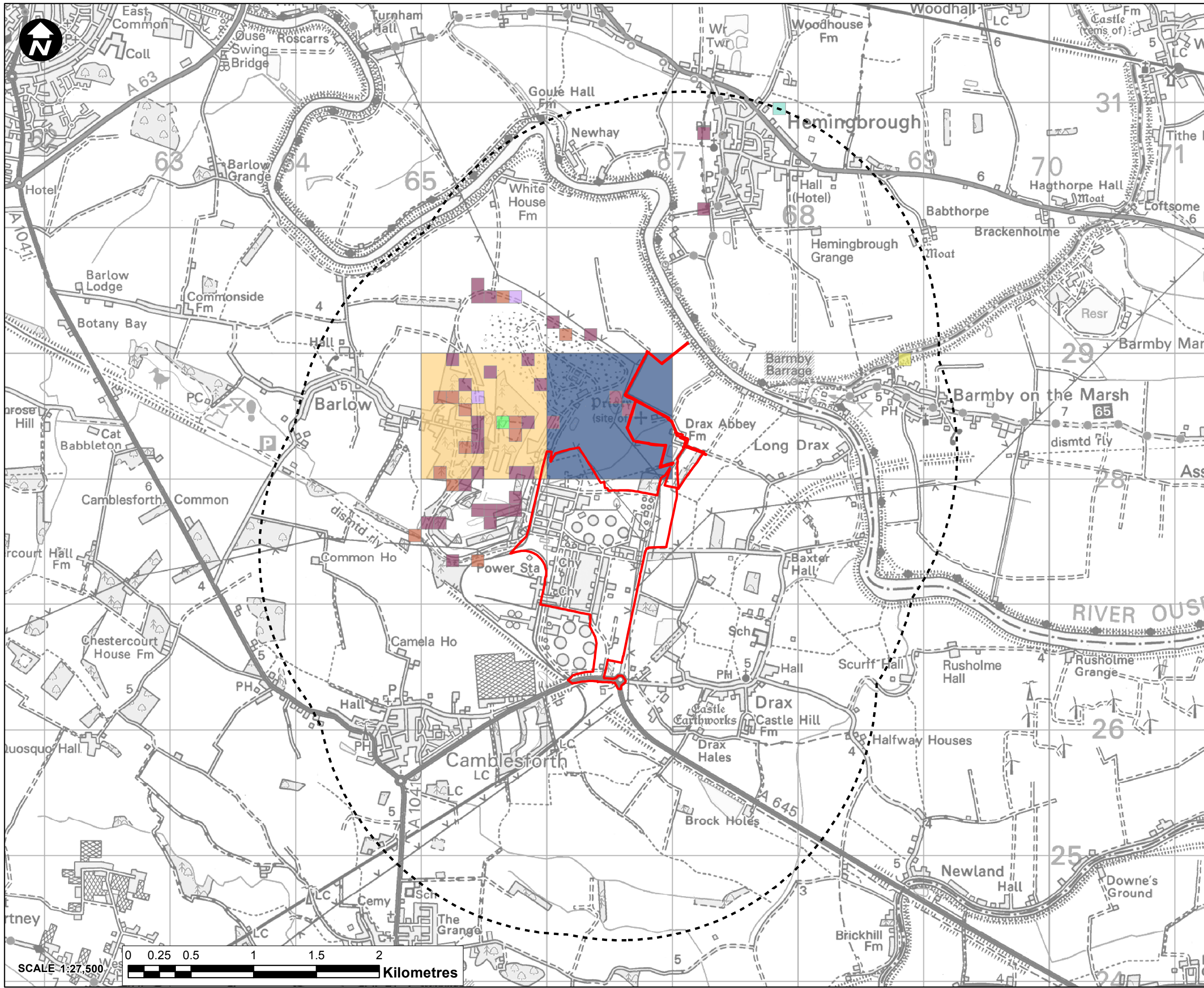
SCALE @ A3 SIZE	DATE	REVISION
1:27,500	13/05/2022	P01



**DRAWING NUMBER**  
**FIGURE 4**

**Figure 5 - Protected and Notable Species Records**




















1:350,000

**Key:**



-  Order Limits
-  2 km Study Area

**Species Type**

-  Amphibian
-  Bird
-  Flowering Plant
-  Insect - Beetle (Coleoptera)
-  Insect - Butterfly
-  Insect - Caddis Fly (Trichoptera)
-  Marine Mammal
-  Reptile
-  Terrestrial Mammal

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(a)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



PROJECT TITLE

**DRAX BECCS  
DCO**

DRAWING TITLE

ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PROTECTED AND NOTABLE SPECIES  
RECORDS

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	DC	LR

SCALE @ A3 SIZE	DATE	REVISION
1:27,500	13/05/2022	P01

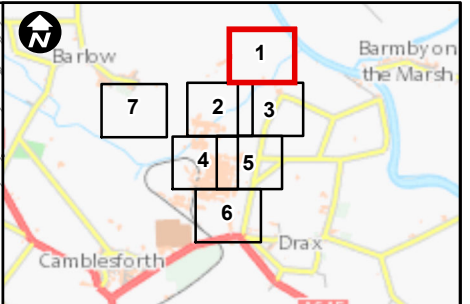
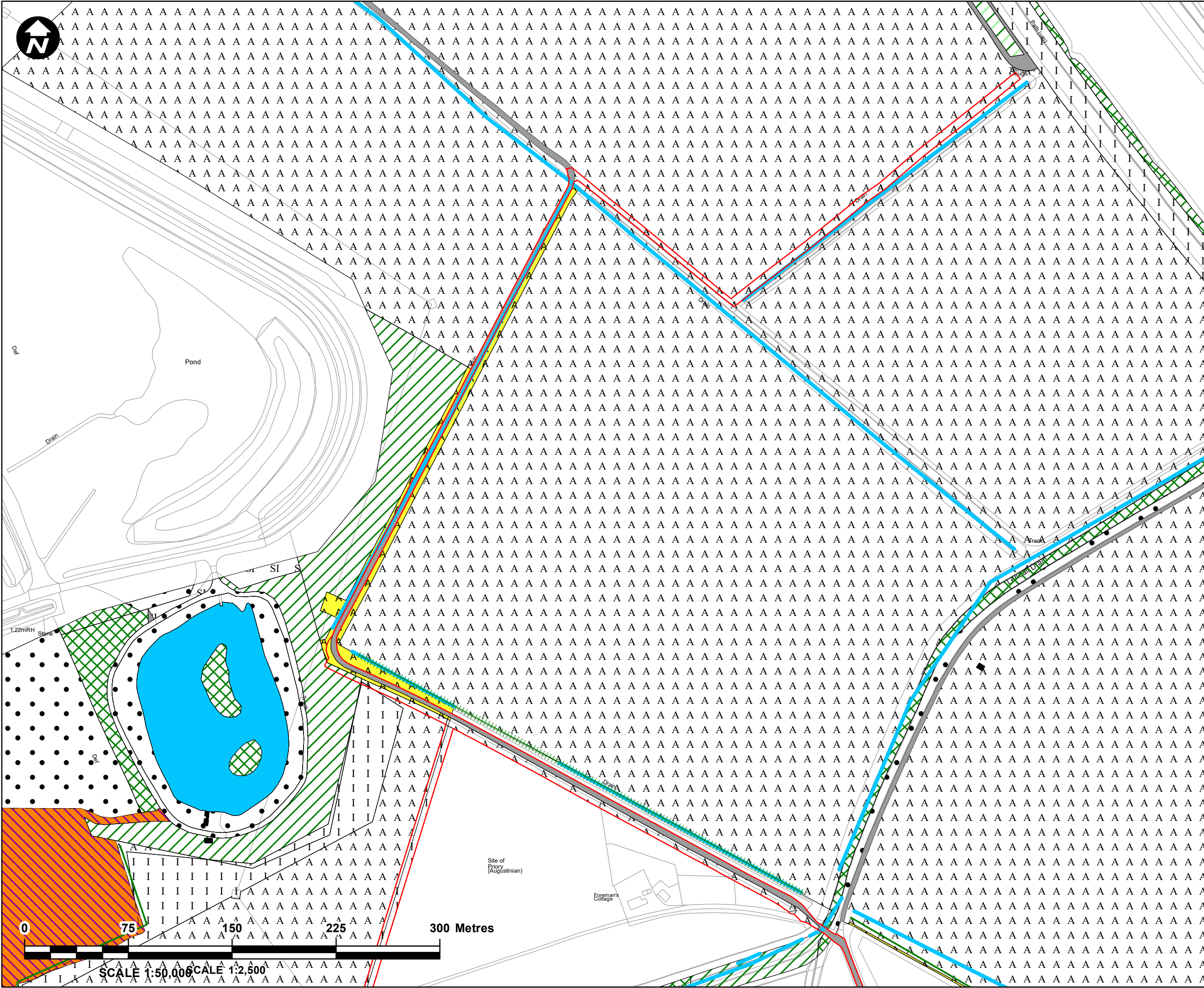
DRAWING NUMBER

FIGURE 5

**Figure 6 - Phase 1 Habitat Survey Results**







- Key:**
- Order Limits
  - Running water
  - Intact hedge - species-poor
  - Hedge with trees - species-poor
- Phase 1 Habitats**
- Broadleaved woodland - plantation
  - Mixed woodland - plantation
  - Scrub - dense/continuous
  - Improved grassland
  - Marsh/marshy grassland
  - Poor semi-improved grassland
  - Running water
  - Hard standing
  - Cultivated/disturbed land - arable
  - Cultivated/disturbed land - amenity grassland
  - Buildings
  - Bare ground

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



**PROJECT TITLE**  
**DRAX BECCS  
DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PHASE 1 HABITATS  
(SHEET 1 OF 7)

**DRAWING STATUS**  
**FOR ISSUE**

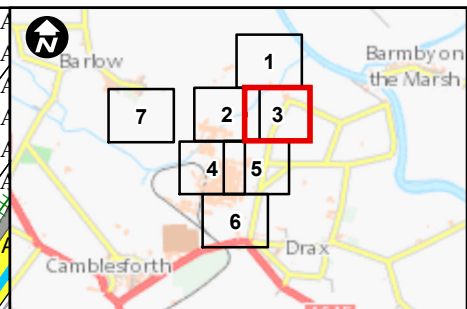
DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	LR	PP

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	13/05/2022	P01

**DRAWING NUMBER**  
**FIGURE 6**







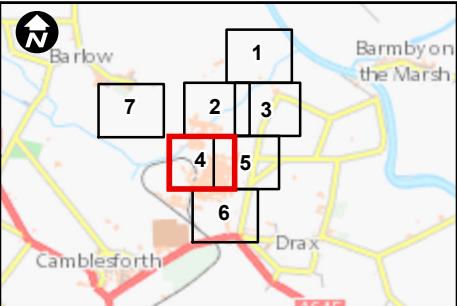
- Key:**
- Order Limits
  - Broadleaved Parkland/scattered trees
  - Running water
  - Intact hedge - species-poor
  - Hedge with trees - native species-rich
  - Hedge with trees - species-poor
  - Dry ditch
- Phase 1 Habitats**
- Broadleaved woodland - semi-natural
  - Broadleaved woodland - plantation
  - Mixed woodland - plantation
  - Scrub - dense/continuous
  - Broadleaved Parkland/scattered trees
  - Neutral grassland - semi-improved
  - Improved grassland
  - Poor semi-improved grassland
  - Swamp
  - Hard standing
  - Cultivated/disturbed land - arable
  - Cultivated/disturbed land - amenity grassland
  - Buildings
  - Bare ground

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



PROJECT TITLE			
DRAX BECCS DCO			
DRAWING TITLE			
ES VOL 3 - CHAPTER 8 ECOLOGY - APPENDIX 8.1 PRELIMINARY ECOLOGICAL APPRAISAL PHASE 1 HABITATS (SHEET 3 OF 7)			
DRAWING STATUS			
FOR ISSUE			
DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	LR	PP
SCALE @ A3 SIZE		DATE	REVISION
1:2,500		13/05/2022	P01
DRAWING NUMBER			
FIGURE 6			



- Key:
- Order Limits
  - Hedge with trees - native species-rich
  - Phase 1 Habitats
    - Broadleaved woodland - semi-natural
    - Broadleaved woodland - plantation
    - Mixed woodland - plantation
    - Scrub - dense/continuous
    - Broadleaved Parkland/scattered trees
    - Neutral grassland - semi-improved
    - Swamp
    - Standing water
    - Hard standing
    - Cultivated/disturbed land - amenity grassland
    - Introduced shrub
    - Buildings
    - Bare ground

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



PROJECT TITLE  
**DRAX BECCS  
DCO**

DRAWING TITLE  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PHASE 1 HABITATS  
(SHEET 4 OF 7)

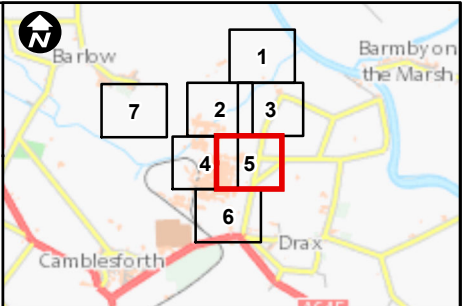
DRAWING STATUS  
**FOR ISSUE**

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	LR	PP

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	13/05/2022	P01

DRAWING NUMBER  
**FIGURE 6**





- Key:
- Order Limits
  - Running water
  - Intact hedge - species-poor
  - Hedge with trees - species-poor
  - Dry ditch
- Phase 1 Habitats**
- Broadleaved woodland - semi-natural
  - Broadleaved woodland - plantation
  - Mixed woodland - plantation
  - Scrub - dense/continuous
  - Broadleaved Parkland/scattered trees
  - Neutral grassland - semi-improved
  - Poor semi-improved grassland
  - Standing water
  - Hard standing
  - Cultivated/disturbed land - arable
  - Cultivated/disturbed land - amenity grassland
  - Introduced shrub
  - Buildings
  - Bare ground

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



PROJECT TITLE  
**DRAX BECCS  
DCO**

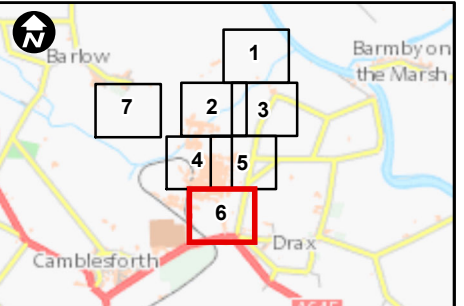
DRAWING TITLE  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PHASE 1 HABITATS  
(SHEET 5 OF 7)

DRAWING STATUS  
**FOR ISSUE**

DRAWN LH	CHECKED BS	APPROVED LR	AUTHORISED PP
-------------	---------------	----------------	------------------

SCALE @ A3 SIZE 1:2,500	DATE 13/05/2022	REVISION P01
----------------------------	--------------------	-----------------

DRAWING NUMBER  
**FIGURE 6**



- Key:**
- Order Limits
  - Intact hedge - native species-rich
  - Intact hedge - species-poor
  - Phase 1 Habitats**
  - Broadleaved woodland - semi-natural
  - Broadleaved woodland - plantation
  - Coniferous woodland - semi-natural
  - Coniferous woodland - plantation
  - Mixed woodland - plantation
  - Broadleaved Parkland/scattered trees
  - Neutral grassland - semi-improved
  - Standing water
  - Running water
  - Hard standing
  - Cultivated/disturbed land - amenity grassland
  - Introduced shrub
  - Buildings
  - Bare ground

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of  
Ordnance Survey on behalf of HMSO.  
Contains OS data © Crown Copyright and  
database right 2020



**PROJECT TITLE**  
**DRAX BECCS  
DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY -  
APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PHASE 1 HABITATS  
(SHEET 6 OF 7)

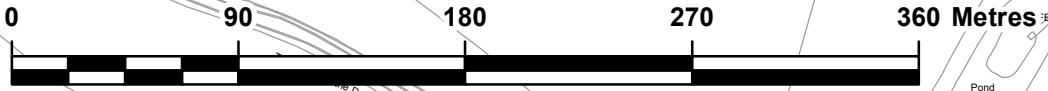
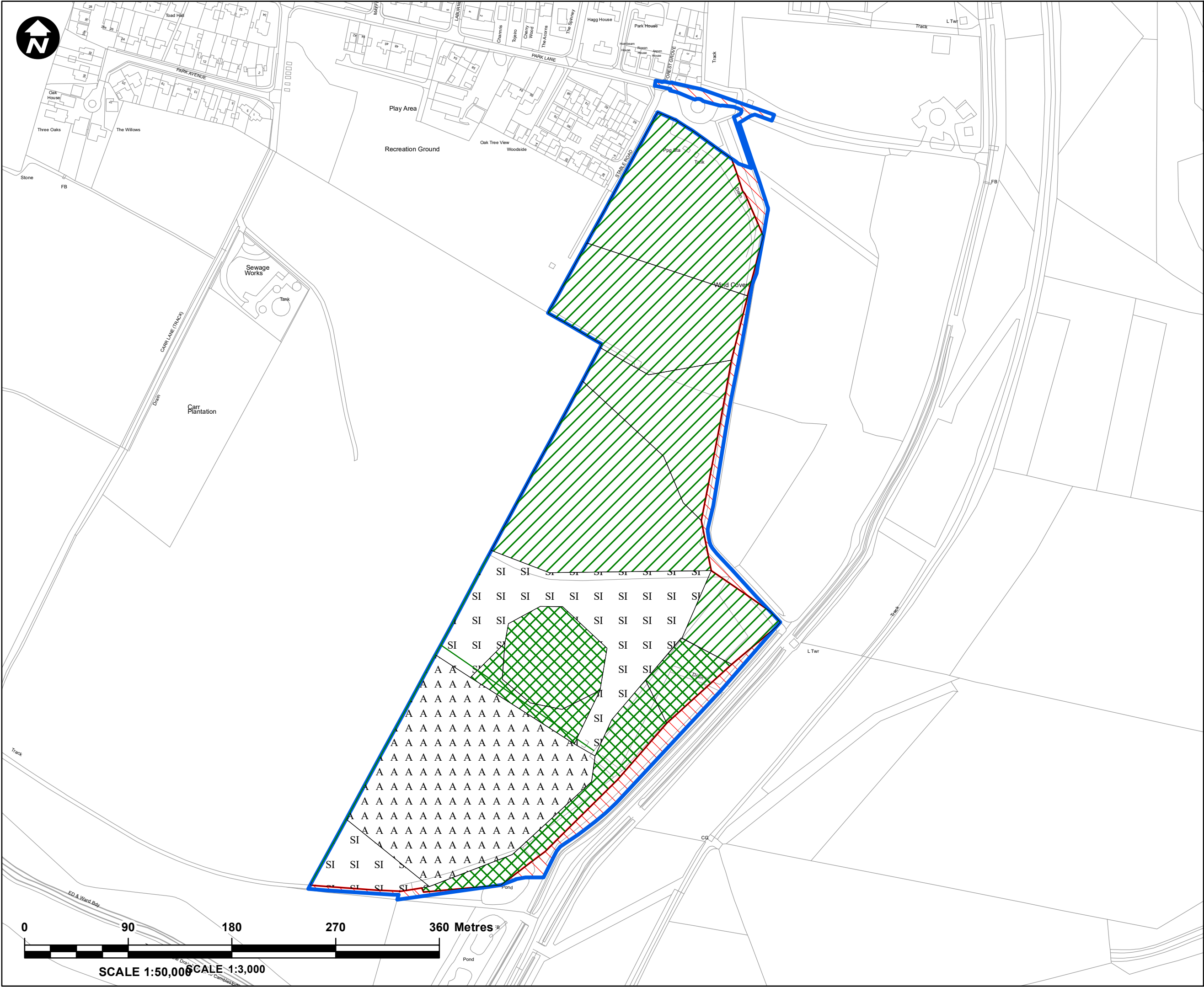
**DRAWING STATUS**  
**FOR ISSUE**

DRAWN	CHECKED	APPROVED	AUTHORISED
LH	BS	LR	PP

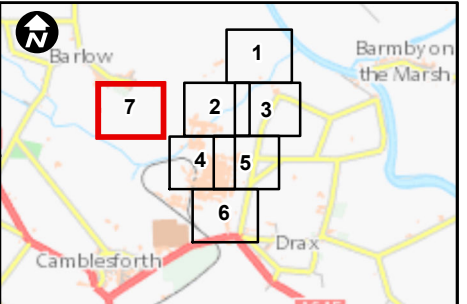
SCALE @ A3 SIZE	DATE	REVISION
1:2,500	13/05/2022	P01

**DRAWING NUMBER**  
**FIGURE 6**





SCALE 1:50,000 SCALE 1:3,000



- Key:**
- Off-Site Habitat Provision Area
  - Off-Site Habitat Provision Access Track
  - Intact hedge - species-poor
- Phase 1 Habitats**
- A Cultivated/disturbed land - arable
  - X Broadleaved woodland - plantation
  - SI Poor semi-improved grassland
  - X Scrub - dense/continuous

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(l)

Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. Contains OS data © Crown Copyright and database right 2020



**PROJECT TITLE**  
**DRAX BECCS DCO**

**DRAWING TITLE**  
ES VOL 3 - CHAPTER 8 ECOLOGY - APPENDIX 8.1  
PRELIMINARY ECOLOGICAL APPRAISAL  
PHASE 1 HABITATS  
(SHEET 7 OF 7)

**DRAWING STATUS**  
**FOR ISSUE**

DRAWN LH	CHECKED BS	APPROVED LR	AUTHORISED PP
-------------	---------------	----------------	------------------

SCALE @ A3 SIZE 1:3,000	DATE 13/05/2022	REVISION P01
----------------------------	--------------------	-----------------

**DRAWING NUMBER**  
**FIGURE 6**

## APPENDICES

---



## APPENDIX A - TARGET NOTES

Target Note	Description
<b>TN1</b>	Possible otter section with camera trap opportunities. Under section of peer offers couch opportunities. Good access to river and terrestrial environments.
<b>TN2</b>	Solitary oak within field hedge and fence line. Broken limbs on eastern aspect. Knothole at 4m. Requires full inspection. Moderate potential.
<b>TN3</b>	Potential water vole signs.
<b>TN4</b>	Mammal path.
<b>TN5</b>	Mammal path.
<b>TN6</b>	Oak on field margin. Unable to access. Requires assessment. Closer inspection reveals tree to be managed well.
<b>TN7</b>	Mammal push through. Deer droppings present.
<b>TN8</b>	Oak tree with visible wounds and damage. Requires a full assessment. Classed as moderate
<b>TN 9</b>	Sheet piling along river in final section near road.
<b>TN10</b>	Rubble pile offering potential great crested newt and amphibian hibernation opportunity.
<b>TN11</b>	Mammal push through beneath chain link fence.
<b>TN12</b>	Large mature ash tree. Multiple features suitable for roosting bats.
<b>TN14</b>	Heavily ivy clad tree on the corner of woodland. Bat potential. No suitability to climb.
<b>TN15</b>	Yellow wood ant mound – grassland creation use
<b>TN15</b>	Area used for storage of straw bales
<b>TN14</b>	Himalayan balsam present around straw bales. No green winged orchid observed
<b>TN16</b>	Location of green winged orchid.

## APPENDIX B - PHOTOGRAPHS



B-1, located at TN1 at the platform



B-2, located at TN1 at the platform



B-3, located at TN1 at the platform



B-4, located at TN1 at the platform



B-5, located at TN1 below the platform



B-6, located at TN1 below the platform





B-7 at TN1, at edge of river      B-8 at TN2, Oak with moderate bat roosting potential



B-9 at TN6, oak in distance



B-10 at TN6, well managed oak



B-11 at TN7, showing mammal path roosting potential



B-12 at TN8, mature oak with moderate bat roosting potential





B-21 at TN9 showing sheet piling



B-22 at TN9 embankment



B-27 at TN12, ash tree suitable for bats

B-34, poison dart frog, at TN13



B-37 at TN14, heavy ivy growth on trees potential



B-38 at TN14, tree with bat roosting

## APPENDIX C – PLANT SPECIES RECORDED

Taxon	Vernacular	DAFOR
<b>A.1.1 Semi-natural Broadleaved Woodland</b>		
<i>Alnus glutinosa</i>	alder	F
<i>Arctium sp.</i>	burdock	O
<i>Artemisia vulgaris</i>	mugwort	O
<i>Crataegus monogyna</i>	common hawthorn	F
<i>Holcus lanatus</i>	Yorkshire fog	O
<i>Ononis repens</i>	common restharrow	R
<i>Potentilla reptans</i>	creeping cinquefoil	O
<i>Rosa canina</i>	dog-rose	F
<i>Rubus fruticosus agg.</i>	bramble	F
<i>Salix caprea</i>	goat willow	F
<i>Salix fragilis</i>	crack willow	F
<i>Sambucus nigra</i>	elder	F
<i>Ulmus glabra</i>	Wych elm	F
<b>A.1.1.2 Plantation Broadleaved Woodland</b>		
<i>Alnus glutinosa</i>	alder	D-F
<i>Betula pendula</i>	Silver birch	D-F
<i>Carpinus betulus</i>	hornbeam	O
<i>Crataegus monogyna</i>	common hawthorn	F
<i>Fraxinus excelsior</i>	ash	O
<i>Populus tremula</i>	aspen	D-F
<i>Quercus robur</i>	pedunculate oak	O-F
<i>Salix fragilis</i>	crack willow	D
<i>Salix sp.</i>	willow	A-O
<i>Tilia sp.</i>	lime	F
<i>Prunus sp.</i>	cherry	O
<b>A.1.3.2 Mixed Plantation Woodland</b>		
<i>Acer campestre</i>	Field maple	F
<i>Betula pendula</i>	silver birch	F
<i>Carpinus betulus</i>	hornbeam	O
<i>Cupressus x leylandii</i>	Leylandii	F
<i>Pinus sylvestris</i>	Scots pine	F
<i>Salix fragilis</i>	crack willow	D
<i>Tilia sp.</i>	lime	F
<b>A.2.1 Dense/Continuous Scrub</b>		
<i>Alnus glutinosa</i>	alder	A-O
<i>Betula pendula</i>	silver birch	A-F-O
<i>Buddleja davidii</i>	buddleia	O
<i>Impatiens glandulifera</i>	Himalayan balsam	A
<i>Rubus fruticosus agg.</i>	bramble	D
<i>Salix sp.</i>	willow	D-F
<i>Urtica dioica</i>	nettle	A
<b>A.2.2 Coniferous Plantation</b>		

Taxon	Vernacular	DAFOR
<i>Pinus sylvestris</i>	Scots pine	A
<b>A.3.1 Broadleaved Scattered Trees</b>		
<i>Crataegus monogyna</i>	common hawthorn	F
<i>Pyrus sp.</i>	pear	F
<i>Quercus ilex</i>	holm oak	F
<i>Fraxinus excelsior</i>	ash	R
<i>Fagus sylvatica</i>	common beech	R
<i>Quercus robur</i>	pedunculate oak	R
<b>B1.2 – Semi-improved Calcareous Grassland</b>		
<i>Agrostis stolonifera</i>	creeping bent	O
<i>Festuca ovina</i>	sheep's fescue	O
<i>Heracleum sphondylium</i>	common hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	O
<i>Plantago lanceolata</i>	ribwort plantain	O
<i>Succisa pratensis</i>	devil's-bit scabious	O
<i>Vicia sepium</i>	bush vetch	O
<b>B.2.2 Semi-improved Neutral Grassland</b>		
<i>Achillea millefolium</i>	yarrow	O
<i>Agrostis capillaris</i>	common bent	O
<i>Agrostis vinealis</i>	brown bent	A
<i>Alnus glutinosa</i>	alder	O
<i>Anacamptis morio</i>	green winged orchid	R
<i>Arrhenatherum elatius</i>	false oat grass	A-O
<i>Calamagrostis epigejos</i>	bushgrass	O
<i>Carex otrubae</i>	false fox sedge	O
<i>Centaurea nigra</i>	black knapweed	O
<i>Cirsium arvense</i>	creeping thistle	O
<i>Cirsium vulgare</i>	spear thistle	O
<i>Cirsium vulgare</i>	spear thistle	O
<i>Crataegus monogyna</i>	hawthorn	O
<i>Cynosurus cristatus</i>	crested dogs tail	O
<i>Dactylis glomerata</i>	cock's-foot	F-O
<i>Dactylorhiza fuchsii</i>	spotted orchid	O
<i>Deschampsia cespitosa</i>	tufted hair grass	O
<i>Dipsacus fullonum</i>	teasel	O
<i>Erigeron sp</i>	fleabane	O
<i>Galium verum</i>	ladies bedstraw	O
<i>Holcus lanatus</i>	Yorkshire fog	A-F
<i>Hypericum perforatum</i>	Perforated St John's Wort	O
<i>Jacobaea vulgaris</i>	common ragwort	A
<i>Juncus conglomeratus</i>	compact rush	O
<i>Juncus conglomeratus</i>	compact rush	O
<i>Juncus effusus</i>	soft rush	F-O
<i>Juncus inflexus</i>	hard rush	O
<i>Juncus inflexus</i>	hard rush	O



<b>Taxon</b>	<b>Vernacular</b>	<b>DAFOR</b>
<i>Lathyrus pratensis</i>	meadow vetchling	O
<i>Leucanthemum vulgare</i>	ox-eye daisy	A
<i>Lotus corniculatus</i>	bird's-foot trefoil	A
<i>Phleum pratense</i>	Timothy	O
<i>Phleum pratense</i>	meadow cats tail	O
<i>Picris echioides</i>	bristly oxtongue	O
<i>Poa annua</i>	Annual meadow-grass	F
<i>Poa trivialis</i>	rough-stalked meadow-grass	O
<i>Poa trivialis</i>	rough meadow-grass	D
<i>Primula veris</i>	cowslip	O
<i>Prunella vulgaris</i>	selfheal	F
<i>Ranunculus repens</i>	creeping buttercup	O
<i>Rubus fruticosus agg.</i>	bramble	O
<i>Rumex crispus</i>	curly dock	O
<i>Scrophularia sp</i>	figwort	F
<i>Silene flos-cuculi</i>	ragged robin	O
<i>Stachys sylvatica</i>	hedge woundwort	O
<i>Trifolium campestre</i>	hop trefoil	O
<i>Trifolium sp.</i>	clover	F
<i>Urtica dioica</i>	nettle	O
<b>B.4 Improved Grassland</b>		
<i>Arrhenatherum elatius</i>	false oat grass	O
<i>Dactylis glomerata</i>	cock's-foot	O
<i>Holcus lanatus</i>	Yorkshire fog	O
<i>Lolium perenne</i>	perennial rye grass	D
<b>B.5 Marshy Grassland</b>		
<i>Achillea millefolium</i>	yarrow	O
<i>Arrhenatherum elatius</i>	false oat grass	D
<i>Centaurea nigra</i>	common knapweed	O
<i>Cirsium arvense</i>	creeping thistle	O
<i>Dactylis glomerata</i>	cock's-foot	D
<i>Deschampsia cespitosa</i>	tufted hair grass	D
<i>Dipsacus fullonum</i>	teasel	O
<i>Heracleum sphondylium</i>	hogweed	O
<i>Juncus conglomeratus</i>	compact rush	O
<i>Phalaris arundinacea</i>	reed canary grass	D
<i>Plantago lanceolata</i>	ribwort plantain	O
<i>Prunella vulgaris</i>	selfheal	O
<i>Ranunculus repens</i>	creeping buttercup	O
<i>Rumex acetosa</i>	common sorrel	O
<i>Tanacetum vulgare</i>	tansy	O
<i>Typha latifolia</i>	bulrush	O
<b>B.6 Poor Semi-improved Grassland</b>		
<i>Anthriscus sylvestris</i>	cow parsley	F
<i>Arrhenatherum elatius</i>	false oat grass	F

Taxon	Vernacular	DAFOR
<i>Centaurea nigra</i>	common knapweed	O
<i>Chamaenerion angustifolium</i>	rosebay willowherb	O
<i>Crepis capllaris</i>	smooth hawk's-beard	O
<i>Dactylis glomerata</i>	cock's-foot	D-F
<i>Geranium robertianum</i>	Herb Robert	F
<i>Glechoma hederacea</i>	ground ivy	F
<i>Heracleum sphondylium</i>	hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	D-F
<i>Lolium perenne</i>	Perennial rye grass	D
<i>Phalaris arundinacea</i>	reed canary grass	O
<i>Plantago lanceolata</i>	ribwort plantain	O
<i>Ranunculus repens</i>	creeping buttercup	O
<i>Ranunculus repens</i>	creeping buttercup	O
<i>Rumex obtusifolius</i>	broadleaved dock	O
<i>Urtica dioica</i>	common nettle	O
<b>C.3.1 Other Tall Herb and Fern – Ruderal</b>		
<i>Chamaenerion angustifolium</i>	rosebay willowherb	O
<i>Impatiens glandulifera</i>	Himalayan balsam	O
<i>Phalaris arundinacea</i>	reed canary grass	O
<i>Phragmites australis</i>	common reed	O
<i>Rubus fruticosus agg.</i>	bramble	D-O
<i>Trifolium sp.</i>	clover	O
<i>Urtica dioica</i>	common nettle	F
<b>E.3.2 Fen – Basin mire</b>		
<i>Phragmites australis</i>	common reed	F
<i>Salix sp.</i>	willow	O
<i>Typha latifolia</i>	bulrush	F
<b>F.1 Swamp</b>		
<i>Alnus glutinosa</i>	alder	F
<i>Centaurea erythraea</i>	common centaury	O
<i>Cirsium palustre</i>	marsh thistle	F
<i>Epilobium hirsutum</i>	great willowherb	F
<i>Holcus lanatus</i>	Yorkshire fog	F
<i>Impatiens glandulifera</i>	Himalayan balsam	O
<i>Iris pseudacorus</i>	yellow iris	O
<i>Jacobaea vulgaris</i>	ragwort	F
<i>Phragmites australis</i>	common reed	D
<i>Scrophularia nodosa</i>	figwort	F
<i>Typha latifolia</i>	bulrush	D
<b>G.1 Standing Water</b>		
<i>Corylus avellana</i>	hazel	O
<i>Juncus effusus</i>	soft rush	D
<i>Phragmites australis</i>	common reed	D

Taxon	Vernacular	DAFOR
<i>Salix sp</i>	willow	O
<b>J.1.4 Introduced Shrub</b>		
<i>Berberis aquifolium</i>	mahonia	O
<i>Betula pendula</i>	silver birch	O
<i>Crataegus monogyna</i>	hawthorn	O
<i>Viburnum sp.</i>	viburnum	O
<b>J.2.1 Intact Hedge- Native, Species-rich</b>		
<i>Acer campestre</i>	field maple	D
<i>Corylus avellana</i>	hazel	F
<i>Crataegus monogyna</i>	hawthorn	F
<i>Rosa canina</i>	dog-rose	F
<b>J.2.3.1. Hedge with Trees- Native and Species-rich</b>		
<i>Fagus sylvatica</i>	common beech	O
<i>Ilex aquifolium</i>	holly	O
<i>Prunus spinosa</i>	blackthorn	O
<i>Sorbus aria</i>	whitebeam	O
<b>J.2.3.2. Hedge with Trees – Species-poor</b>		
<i>Acer campestre</i>	field maple	O
<i>Acer pseudoplatanus</i>	sycamore	O
<i>Alnus glutinosa</i>	alder	O
<i>Crataegus monogyna</i>	common hawthorn	D
<i>Dactylis glomerata</i>	cock's-foot	F
<i>Fraxinus excelsior</i>	ash	O
<i>Galium aparine</i>	cleavers	F
<i>Glechoma hederacea</i>	ground ivy	O
<i>Holcus lanatus</i>	Yorkshire fog	O
<i>Pinus sylvestris</i>	Scots pine	O
<i>Prunus sp.</i>	cherry	O
<i>Quercus robur</i>	pedunculate oak	O
<i>Urtica dioica</i>	common nettle	O
<b>J4 Bare Ground with C.3.1. Tall Ruderal</b>		
<i>Papaver sp.</i>	poppy	O
<i>Sonchus oleraceus</i>	sow thistle	O
<i>Verbascum sp.</i>	mullein	O



## APPENDIX D – LEGALLY PROTECTED AND PRIORITY SPECIES WITHIN 2KM THE SITE BOUNDARY (DATA FROM NEYEDC)

Records of protected and notable species within 2 km of the Proposed Scheme are summarised in the table below and shown on **Figure 5**.

Species group	Species		Legal/priority status*	Total number of records within 2km of the Proposed Scheme
	Common name	Scientific name		
<b>Terrestrial mammal</b>	Eurasian Badger	Meles meles	BA	24
	European Water Vole	Arvicola amphibius	Selby_LBAP; S.41; WACA-Sch5	13
	American Mink	Neovison vison	Selby_LBAP; INNS	1
	Brown Hare	Lepus europaeus	Selby_LBAP; S.41	6
	Common Pipistrelle	Pipistrellus pipistrellus	Selby_LBAP; HR; WACA-Sch5	10
	Noctule Bat	Nyctalus noctula	Selby_LBAP; S.41; HR; WACA-Sch5	2
	Soprano Pipistrelle	Pipistrellus pygmaeus	Selby_LBAP; S.41; HR; WACA-Sch5	2
	Unidentified Bat	Myotis	Selby_LBAP; HR; WACA-Sch5	6
<b>Birds</b>	Corn Bunting	Emberiza calandra	Selby_LBAP	1
	Cuckoo	Cuculus canorus	S.41	2
	Eurasian Skylark	Alauda arvensis	S.41	3
	Fieldfare	Turdus pilaris	WACA-Sch1	1
	Grey Partridge	Perdix perdix	Selby_LBAP; S.41	1
	Kingfisher	Alcedo atthis	WACA-Sch1	1
	Lesser Redpoll	Acanthis cabaret	S.41	1
	Linnet	Linaria cannabina	Selby_LBAP	2
	Peregrine	Falco peregrinus	WACA-Sch1	1
	Redwing	Turdus iliacus	WACA-Sch1	1
	Snipe	Gallinago gallinago	Selby_LBAP	1

Species group	Species		Legal/priority status*	Total number of records within 2km of the Proposed Scheme
	Common name	Scientific name		
	Spotted Flycatcher	Muscicapa striata	S.41	1
	Starling	Sturnus vulgaris	Selby_LBAP	2
	Tree Sparrow	Passer montanus	Selby_LBAP; S.41	1
	Western Barn Owl	Tyto alba	Selby_LBAP; WACA-Sch1	2
	Western Marsh Harrier	Circus aeruginosus	WACA-Sch1	2
	Yellowhammer	Emberiza citrinella	Selby_LBAP; S.41	2
<b>Reptiles</b>	Grass Snake	Natrix helvetica	S.41; WACA-Sch5*	20
<b>Amphibians</b>	Common Toad	Bufo bufo	S.41	9
	Great Crested Newt	Triturus cristatus	Selby_LBAP; S.41; HR; WACA-Sch5	3
<b>Invertebrates</b>	Small Heath	Coenonympha pamphilus	S.41	1
<b>Plants</b>	Giant Hogweed	Heracleum mantegazzianum	INNS	4
	Indian (Himalayan) Balsam	Impatiens glandulifera	INNS	11
	Rhododendron ponticum	Rhododendron ponticum	INNS	3
<p>Key</p> <p>HR - included on Schedules 2 or 5 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</p> <p>WACA-Sch1- included on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)</p> <p>WACA-Sch5 - included on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)</p> <p>WACA-Sch5* - included on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) with respect to killing or injury only.</p> <p>INNS - included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)</p> <p>BA - Badgers Act 1992</p> <p>S41 - Species of Principal Importance for the Conservation of Biological Diversity in England (excluding birds)</p> <p>Selby_LBAP – Selby Local Biodiversity Action Plan species</p>				

## APPENDIX E – EUROPEAN PROTECTED SPECIES LICENCES

Records of EPS licences granted within 2 km of the Site Boundary are summarised in Table below.

Type	Species	Reference	Description	Approximate distance and orientation (km)
Bat	Brandt's bat <i>Myotis brandtii</i> , common pipistrelle, Natterer's bat <i>Myotis nattereri</i> and whiskered bat <i>Myotis mystacinus</i> .	2014-3615-EPS-MIT	Licence Start Date 26/09/2014 Licence End Date: 12/09/2019 Allows destruction of resting place only	1.2km west
	Brandt's bat and whiskered bat.	EPSM2012-5171	Licence Start Date: 13/11/2012 Licence End Date: 31/08/2013 Allows destruction of resting place only	1.4km north