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Yorkshire Green Energy Enablement (GREEN) Project

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Phase 1 Habitat Survey Report**

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Version History

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1. Introduction

1.1 Purpose of this report

- 1.1.1 This report has been produced for the purpose of presenting the results of a desk study and extended Phase 1 habitat survey undertaken to gather baseline ecological data as part of the Yorkshire Green Energy Enablement (GREEN) Project (“the Project” or “Yorkshire GREEN”).
- 1.1.2 The Project comprises new electricity infrastructure, such as new overhead lines, substations, cables and equipment to connect overhead lines to buried cables, known as Cable Sealing End Compounds (CSECs), as well as works to existing overhead lines and substations.
- 1.1.3 The Project is a Nationally Significant Infrastructure Project (NSIP) and requires consent from the Secretary of State via a Development Consent Order (DCO).
- 1.1.4 This report details the results of the desk study and extended Phase 1 habitat survey in order to inform the Environmental Statement (ES) for the Project. This report forms a technical appendix to **Chapter 8: Biodiversity, Volume 5, Document 5.2.8**.

1.2 Structure of this report

- 1.2.1 **Figure 1.2, Volume 5, Document 5.4.1** illustrates the Order Limits which form the boundary of the Project for which development consent is being sought and within which all works would take place, which is hereafter referred to as ‘land within the Order Limits’.
- 1.2.2 As part the ecological support during the DCO process, Wood has been commissioned to undertake a desk study and extended Phase 1 habitat survey of land within the Order Limits
- 1.2.3 Extended Phase 1 habitat surveys and desk studies help establish the ecological baseline, enable the early identification of potential ecological constraints, and inform additional survey and/or mitigation requirements. This extended Phase 1 habitat survey report provides a summary of the desk study data gathered (**Section 2**); the methods and results of an extended Phase 1 habitat survey (**Section 3**); and outlines the additional survey work carried out to inform the DCO application (**Section 4**). The approach broadly follows the Guidelines for Preliminary Ecological Appraisal (CIEEM)¹.
- 1.2.4 This extended Phase 1 habitat survey report should not be treated as a full ‘baseline ecological report’ in the context of Ecological Impact Assessment (EclA), since additional data or interpretation may be required to provide a robust characterisation of the ecological features within the Order Limits. However, the information in this report will contribute to the ecological baseline for the Project, in combination with the additional data gathered (i.e. results of the protected species surveys).

¹ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. Second edition. (online). Available at: [REDACTED] (Accessed October 2022).

- 1.2.5 Species are referred to by their common names followed by their scientific names when used for the first time in this report text. A separate list of scientific names is provided in **Annex 8B.1**.

2. Desk Study

Desk studies involve the collection and interpretation of existing biodiversity data from various sources. The data provides information on ecological features potentially present within the Order Limits and the surrounding area and helps identify features that may require particular attention during any field surveys.

2.1 Data gathering methodology

2.1.1 The Study Area encompasses the area over which all desk-based data was gathered. Due to the presence of multiple ecological features and many potential effects, the level and type of data collection varies across the Study Area. The Study Area comprises:

- land within the Order Limits (as shown on **Figure 1.2, Volume 5, Document 5.4.1**);
- the desk study areas (known as “areas of search”) for sites designated for their nature conservation interest at the international, European, national and local levels (as described in **Box 1**);
- the area of search for legally protected and notable ecological features;
- the area of search for any legally controlled species; and
- the survey area for field surveys (described in **Section 4**).

2.2 Approach

2.2.1 A data-gathering exercise was undertaken in June 2021^{2,3} to obtain information relating to statutory and non-statutory biodiversity sites; species or habitats of principal importance for the conservation of biodiversity (SPIs or HPIs); legally protected and controlled species; and other conservation-notable habitats or species (see **Boxes 1 and 2**). The scope of the data collection was based on best practice guidance and a high-level overview of the types of ecological features present, the environmental changes, and the potential effects that could occur during the construction and operation of the Project, and included data within the following areas of search:

- statutory designated biodiversity sites of national and international importance in and up to 2km outside of the Order Limits, extended to:
 - 20km for internationally important sites with ornithological interest;

² This is considered sufficient in respect of both age and geographical spread when combined with the ongoing surveys which provide up to date, accurate species data within the Order Limits.

³ Since the publication of the PEIR, the Order Limits have been refined to reflect the final design of the Project. All biodiversity features have been rescoped, and where impacts of the Project could result in potentially significant effects, they have been included in the data collation, survey and assessment. This includes features located within and outside the Order limits, as detailed in **Chapter 8: Biodiversity, Volume 5, Document 5.2.8**.

- 10km for nationally important sites with ornithological interest;
- 10km for internationally and nationally important sites with bat interest;
- other statutory and non-statutory designated biodiversity sites of nature conservation interest in and up to 2km of the Order Limits;
- records of confirmed bat roosts in and within 5km of the Order Limits;
- existing European Protected Species Mitigation Licences (EPSL) granted within 5km of the Order Limits for bats, and within 2km of the Order Limits for other species;
- legally protected species, SPIs or other conservation-notable species recorded within 2km of the Order Limits; and
- HPIs or other conservation-notable habitats recorded within 2km of the Order Limits.

2.2.2 The geographical context of the Order Limits was also examined using the relevant Ordnance Survey maps and freely-available aerial photographs. These were used to identify features that may be important locally for protected or conservation-notable species, such as potential migration or dispersal routes, or any potential receptors of site-derived pollutants in the wider landscape.

2.2.3 The sources of desk study information are summarised in **Table 2.1**.

Water bodies

2.2.4 Following discussions with Natural England, the Project will join the great crested newt (GCN) (*Triturus cristatus*) district level licencing (DLL) scheme⁴. As a result, no GCN field surveys (e.g. Habitat Suitability Index assessments, presence/likely absence and/or population size class assessments) are required. However, prior to confirmation that DLL would be employed on the Project, an initial a desk-based exercise to identify water bodies suitable for GCN⁵ within 250m of the Order Limits was undertaken as 250m is recognised as being towards the upper limit of the distance that most adult GCN typically disperse around breeding ponds⁶. The results of this exercise are given to provide context for the DLL approach.

2.2.5 In addition, watercourses within the Order Limits and 50m buffer were identified from 1:10,000 OS maps to inform the extended Phase 1 habitat survey and the potential requirement for protected species surveys such as otter (*Lutra lutra*) and water vole (*Arvicola amphibius*).

Important Hedgerows

2.2.6 Hedgerows which meet certain criteria and qualify as ‘important’ are protected under The Hedgerow Regulations 1997. These criteria relate to “archaeology and history” and to “wildlife and landscape”, and a hedgerow can qualify as important under either

⁴ Natural England and Defra (2022). Great crested newts: district level licensing schemes for developers and ecologists (online). Available at:

<https://www.gov.uk/government/publications/great-crested-newts-district-level-licensing-schemes-for-developers> (Accessed October 2022).

⁵ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature (now Natural England), Peterborough.

⁶ Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001). Great Crested Newt Conservation Handbook. Froglife, Halesworth.

category. Hedgerows that may require removal as part of the Project⁷ were therefore assessed to identify whether they may qualify as ‘important’. A two-phased desk-based review was undertaken.

- 2.2.7 The first phase identified hedgerows as ‘important’ on the basis of the ‘archaeology and history’ criteria set out at Schedule 1 of the Hedgerows Regulations 1997 (see **Annex 8B.5**).
- 2.2.8 Any hedgerows not recorded as ‘important’ on the basis on the ‘archaeology and history’ were subject to a second assessment to identify hedgerows as ‘potentially important’ on the basis of “wildlife and landscape” criteria also set out at Schedule 1 (**Annex 8B.5**). Using the extended Phase 1 habitat survey results (**Section 3**), hedgerows recorded as species-rich are deemed to be ‘potentially important’.
- 2.2.9 Any hedgerows that are not assessed as ‘important’ on the basis of “archaeology and history” criteria, or ‘potentially important’ on the basis of “wildlife and landscape” criteria are classed as ‘not important’.

⁷ As listed in **Arboriculture Impact Assessment, Volume 5, Document 5.3.3I**

Box 1 - Designated Biodiversity Sites, and Priority Habitats and Species

Statutory Biodiversity Sites

European sites: Important biodiversity sites designated under international law or treaties. European sites are any **Special Area of Conservation** (SAC) from the point at which the European Commission and the UK Government agree the site as a 'Site of Community Importance' (SCI) (if this was before 31 Jan 2020); any classified **Special Protection Area** (SPA); and any **candidate SAC** (cSAC). The term 'European site' is also commonly used when referring to **potential SPAs** (pSPAs), to which the provisions of Article 4(4) of *Directive 2009/147/EC* (the 'new wild birds directive') apply; and to **possible SACs** (pSACs) and listed **Ramsar** sites, to which the provisions of the Habitats Regulations are applied a matter of Government policy (National Planning Policy Framework - NPPF para. 176; TAN 5 para. 5.1.3; SPP para. 136) when considering development proposals that may affect them.

Sites of Special Scientific Interest (SSSIs): Nationally important sites notified under the *Wildlife and Countryside Act 1981* (as amended) that provide the best examples of the UK's flora, fauna, or geological or physiographical features (note, this assessment focuses on those sites notified for their biodiversity interest).

National Nature Reserves (NNRs): Nationally important sites notified under the *National Parks and Access to the Countryside Act 1949* and the *Wildlife and Countryside Act 1981* (as amended); in practice most NNRs are SSSIs also.

Local Nature Reserves (LNRs): Locally important sites that are designated under the *National Parks and Access to the Countryside Act 1949* with the objective of encouraging their use for the study, research, or enjoyment of nature.

Non-statutory Biodiversity Sites

Non-statutory biodiversity sites in Yorkshire are known as Local Wildlife Sites (LWSs), Sites of Importance for Nature Conservation (SINCs) and Sites of Ecological Interest (SEIs) and are safeguarded by the policy provisions in Local Plans and Local Development Frameworks.

Yorkshire Wildlife Trust (YWT) Reserves are sites that have a value for wildlife and are protected and restored by the YWT.

Royal Society for the Protection of Birds (RSPB) Reserves are sites that have a value for wildlife and are protected and restored by the RSPB.

Candidate SINCs are those sites found to meet the criteria for designation as a SINC but have not yet been designated, however should be dealt with in the same way as a SINC in the planning process.

Deleted SINCs are those sites previously designated as SINCs which no longer qualify against the SINC selection guidelines following the most recent botanical survey and assessment process.

Deleted SINCs have been included within this desk study as they are still likely to have value for wildlife and it may be possible to enhance deleted SINC sites with appropriate management in order to return the site condition to a level which meets the SINC qualifying criteria.

Box 1 (cont.) - Designated Biodiversity Sites, and Priority Habitats and Species

Other Important Habitats or Species

Species or habitats of “principal importance for the conservation of biodiversity” are those listed by Natural England pursuant to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (as amended). They are commonly referred to (respectively) as ‘Section 41’ habitats/species or SPIs/HPIs.

Other conservation-notable habitats and species would include:

Species listed as being of conservation concern in the relevant UK Red Data Book (RDB)/Red List (RL) or the Birds of Conservation Concern Red List (RL) (Eaton et al. 2009).

Ancient woodland (i.e. areas that have been under continuous woodland cover since at least 1600 listed on the Ancient Woodland Inventory (AWI));

Nationally Rare and Nationally Scarce species in the UK, which are species recorded from, respectively, 1-15 and 16-100 hectares (10x10km squares of the UK national grid).

Populations of birds comprising at least 1% of the relevant British breeding/wintering population (where data are available).

- Habitats and species listed by the relevant Local Biodiversity Action Plan (LBAP); and
- Other species or assemblages such as large populations of animals considered uncommon or threatened in a wider context.

Box 2 - Legally Protected and Controlled Species

Legal Protection

Many species of animal and plant receive some degree of legal protection. For the purposes of this report, legal protection refers to:

Species included on Schedules 5 and 8 of the *Wildlife and Countryside Act 1981* (as amended), excluding species that are only protected in relation to their sale (see Sections 9[5] and 13[2] of the Act);

Species included on Schedules 2 and 5 of the *Conservation of Habitats and Species Regulations 2017*;

Hedgerows, some of which are protected under The Hedgerow Regulations 1997; and Badgers (*Meles meles*), which are protected under the *Protection of Badgers Act 1992*.

Legal Control

Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) lists species of animal that it is an offence to release or allow to escape into the wild (for example grey squirrel (*Sciurus carolinensis*)) and species of plant that it is an offence to plant or otherwise cause to grow in the wild (for example, Japanese knotweed (*Fallopia japonica*)).

Table 2.1 – Sources of desk-study information

Aspect	Data	Sources
Statutory sites	<ul style="list-style-type: none"> • Boundary data. • Citations. • Other site information (e.g. Conservation Objectives; Site Improvement Plans; Condition Assessments; Views about Management; etc.) 	<ul style="list-style-type: none"> • Magic mapping⁸: • Joint Nature Conservation Committee (JNCC): Information on UK Protected Areas⁹ • Natural England (NE): Information on protected areas and designated sites.
Non-statutory sites	<ul style="list-style-type: none"> • Boundary data. • Citations. 	Local Biodiversity Records Centres: <ul style="list-style-type: none"> • West Yorkshire Ecology Service (WYES) • North and East Yorkshire Ecological Data Centre (NEYEDC)
Other sites and habitats (including water body locations)	<ul style="list-style-type: none"> • Boundary data. 	<ul style="list-style-type: none"> • Magic mapping⁸. • Google earth mapping.
Species records	<ul style="list-style-type: none"> • Location data. 	Local Biodiversity Records Centres: <ul style="list-style-type: none"> • WYES. • NEYEDC. • The Species Recovery Trust.

2.3 Desk study results

Designated sites

2.3.1 There are 10 statutory designated nature conservation sites within the Study Area (see **Figure 8.1, Volume 5, Document 5.4.8**), with a further 44 non-statutory sites¹⁰ comprising four Local Wildlife Sites (LWS), two Sites of Ecological Importance (SEI), 30

⁸ Defra (2022). Magic maps (online). Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed October 2022).

⁹ JNCC (2022). UK Protected Areas (online) Available at: <http://jncc.defra.gov.uk/page-4> (Accessed October 2022).

¹⁰ LWSs is the new term for locally designated sites and is being adopted across West Yorkshire. SEI is an old term for designated sites which is gradually being reviewed and reassessed against new LWS selection criteria and where they qualify will be replaced by LWS designation. SINC is the term given to non-statutory sites in North Yorkshire.

SINCs, and eight candidate SINCs. A further 27 deleted¹¹ SINCs have also been identified in or within 2km of the Order Limits.

2.3.2 In addition, three YWT reserves (Ledsham Bank, Moorlands and Sherburn Willows) and one RSPB reserve (Fairburn Ings; parts of which are also designated as Fairburn and Newton Ings SSSI), have also been identified within the area of search; none are located within the Order Limits.

8.1.1 The interest features of the sites are summarised in **Table 2.2**.

2.3.3 The following sites are particularly relevant to the proposals as they are located within the Order Limits:

- Overton Borrowpits SINC;
- River Ouse Candidate SINC;
- Field nr Healaugh Manor Farm Deleted SINC; and
- Disused Quarry, Newthorpe Deleted SINC.

2.3.4 Moor Lane, Stutton Verges Candidate SINC is located immediately adjacent the Order Limits, with Lord’s Quarry SINC, Shire Oaks, Healaugh SINC and Healaugh Priory Marsh Deleted SINC within 50m of the Order Limits.

Table 2.2 – Designated nature conservation sites within the relevant search areas

Key

* Location relative to the Order Limits

Site	Location*	Summary of interest features
<p>Statutory designated biodiversity sites of national and international importance within 2km of the Order Limits boundary, extended to:</p> <ul style="list-style-type: none"> • 20km for internationally important sites with ornithological interest; • 10km for nationally important sites with ornithological interest; and • 10km for internationally and nationally important sites with bat interest. 		
Lower Derwent Valley SPA	~6.19km east	<ul style="list-style-type: none"> • The site qualifies under Article 4.1 by regularly supporting nationally important numbers during the non-breeding season for: <ul style="list-style-type: none"> – Bewick’s swan (<i>Cygnus columbianus bewickii</i>); – Ruff (<i>Philomachus pugnax</i>); – golden plover (<i>Pluvialis apricaria</i>); – teal (<i>Anas crecca</i>); and – wigeon (<i>Anas crecca</i>). • The site also qualifies under Article 4.2 by regularly supporting a breeding population of:

¹¹ Deleted SINCs in North Yorkshire are former SINCs which have been assessed against the SINC selection guidelines by the North Yorkshire SINC panel and found not to qualify, though they are still likely to be of higher ecological quality than other land in the area.

Site	Location*	Summary of interest features
		<ul style="list-style-type: none"> – shoveler (<i>Anas clypeata</i>). • The site also qualifies under Article 4.2 by regularly supporting a waterfowl assemblage including: <ul style="list-style-type: none"> – Bewick’s swan; – wigeon; – teal; – golden plover; and – ruff.
Lower Derwent Valley Ramsar	~6.22km east	<ul style="list-style-type: none"> • Criterion 1: Species-rich alluvial flood meadow habitat which plays a substantial role in the hydrological and ecological functioning of the Humber Basin. • Criterion 2: A rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates and a leafhopper (<i>Cicadula ornata</i>) for which Lower Derwent Valley is the only known site in Great Britain. • Criterion 4: The site qualifies as a staging post for passage birds in spring, with nationally important numbers of ruff and whimbrel (<i>Numenius phaeopus</i>). • Criterion 5: Winter waterfowl assemblage of international importance. • Criterion 6: Peak winter counts of: <ul style="list-style-type: none"> – wigeon; and – teal.
Sherburn Willows SSSI	~0.65km south-east	<ul style="list-style-type: none"> • CG3 – Upright brome (<i>Bromus erectus</i>) lowland calcareous grassland. • S25 – Common reed (<i>Phragmites australis</i>) – hemp-agrimony (<i>Eupatorium cannabinum</i>) tall-herb fen. • S26 – Common reed – common nettle (<i>Urtica dioica</i>) tall-herb fen.
Madbanks and Ledsham Banks SSSI	~0.87km south-west	<ul style="list-style-type: none"> • CG4 – Tor-grass (<i>Brachypodium pinnatum</i>) lowland calcareous grassland. • CG5 – Upright brome – tor-grass lowland calcareous grassland.
Fairburn and Newton Ings SSSI	~1.79km south-west	<ul style="list-style-type: none"> • Aggregations of non-breeding birds – Gadwall (<i>Anas strepera</i>), mallard (<i>Anas platyrhynchos</i>), shoveler, whooper Swan (<i>Cygnus cygnus</i>).

Site	Location*	Summary of interest features
		<ul style="list-style-type: none"> • M23 – Soft rush (<i>Juncus effusus</i>)/sharp flowered rush (<i>Juncus acutiflorus</i>) – marsh bedstraw (<i>Galium palustre</i>) rush pasture. • MG13 – Creeping bent (<i>Agrostis stolonifera</i>) – marsh foxtail (<i>Alopecurus geniculatus</i>) grassland. • S12 – Bulrush (<i>Typha latifolia</i>) swamp. • S14 – Branched bur-reed (<i>Sparganium erectum</i>) swamp. • S20 – Common club-rush (<i>Scirpus lacustris</i> ssp. <i>Tabernaemontani</i>) swamp. • S4 – Common reed swamp and reed-beds. • S5 – Reed sweet grass (<i>Glyceria maxima</i>) swamp. • Variety of breeding bird species (70). • W1 – Grey willow (<i>Salix cinerea</i>) – marsh bedstraw woodland. • W16 - Oak spp.-birch spp.- wavy hair-grass (<i>Deschampsia flexuosa</i>) woodland.
Stutton Ings SSSI	~1.99km south-east	<ul style="list-style-type: none"> • M22 – blunt-flowered rush (<i>Juncus subnodulosus</i>) – marsh thistle (<i>Cirsium palustre</i>) fen meadow. • S7 – Lesser-pond sedge (<i>Carex acutiformis</i>) swamp.
Heslington Tillmire SSSI	~3.57km south	<ul style="list-style-type: none"> • Assemblages of breeding birds - Lowland damp grasslands. • M24 – Purple moor-grass (<i>Molinia caerulea</i>) – meadow thistle (<i>Cirsium dissectum</i>) fen meadow. • S27 – Bottle sedge (<i>Carex rostrata</i>) – marsh cinquefoil (<i>Potentilla palustris</i>) swamp.
River Derwent SSSI	~5.79km east	<ul style="list-style-type: none"> • Aggregations of non-breeding birds - Bewick's Swan. • Assemblages of breeding birds – Mixed. • Flowing waters - Type II: slow-flowing, naturally eutrophic lowland rivers, dominated by clays. • Invertebrate assemblage. • Otter. • Outstanding assemblage of native fish. • Outstanding dragonfly assemblage.

Site	Location*	Summary of interest features
Derwent Ings SSSI	~7.63km south-east	<ul style="list-style-type: none"> • Aggregations of breeding birds - Gadwall, garganey (<i>Anas querquedula</i>), pochard (<i>Aythya ferina</i>), ruff, shoveler, tufted duck (<i>Aythya fuligula</i>). • Aggregations of non-breeding birds - Bewick's swan, golden plover, mallard, pochard, ruff, teal, wimbrel, and wigeon. • Assemblages of breeding birds - Lowland damp grasslands. • Invertebrate assemblage. • MG11 – red fescue (<i>Festuca rubra</i>) – creeping bent – silverweed (<i>Potentilla anserina</i>) grassland. • MG13 – Creeping bent – marsh foxtail grassland. • MG4 – Meadow foxtail – great burnet grassland. • MG8 – crested dog's-tail – marsh marigold grassland. • Outstanding dragonfly assemblage. • S28 – Reed canary grass (<i>Phalaris arundinacea</i>) tall-herb fen. • S5 – Reed sweet grass swamp. • Vascular plant assemblage.
Melbourne and Thornton Ings SSSI	~9.64km south-east	<ul style="list-style-type: none"> • Aggregations of breeding birds - gadwall, garganey and pintail (<i>Anas acuta</i>). • Aggregations of non-breeding birds - Bewick's swan, teal and wigeon. • M22 – Blunt-flowered rush – marsh thistle fen meadow. • M23 – Soft rush/sharp flowered rush – marsh bedstraw rush pasture. • M27 – meadowsweet (<i>Filipendula ulmaria</i>)– wild angelica (<i>Angelica sylvestris</i>) mire. • MG13 – Creeping bent – marsh foxtail grassland. • MG8 – crested dog's-tail – marsh marigold grassland. • Otter. • Outstanding dragonfly assemblage. • S28 – Reed canary grass tall-herb fen. • S5 – Reed sweet grass swamp. • Variety of breeding bird species (70). • Variety of wintering bird species (90).

Site	Location*	Summary of interest features
		<ul style="list-style-type: none"> W6 – Black alder (<i>Alnus glutinosa</i>) – common nettle woodland. W7 – Black alder – ash (<i>Fraxinus excelsior</i>) – yellow pimpernel (<i>Lysimachia nemorum</i>) woodland.
Non-statutory biodiversity sites of nature conservation interest within 2km of the Order Limits		
Overton Borrowpits SINC	Within the Order Limits	The site comprises two linear borrow pits. The eastern pit is fringed by false-oat (<i>Arrhenatherum elatius</i>) grassland and dense scrub, with species-rich fen meadow on the pit floor. The pit to the west is dominated by dense grey sallow scrub with species-poor grassland on the periphery. There is a small area of fen-meadow which supports fleabane (<i>Pulicaria dysenterica</i>), marsh orchids and sedges.
River Ouse Candidate SINC	Within the Order Limits	<p>The river is designated for migratory fish including Atlantic salmon, sea and river lamprey and eel. The river is also known to support otter and is likely to provide an important foraging resource for local bat populations including Daubenton's, noctule and pipistrelle breeding roosts within York city.</p> <p>The river and its banks support several nationally uncommon riverine invertebrates such as: depressed river mussel, <i>Sialis nigripes</i> (an alderfly), <i>Ceraclea sensilis</i> (a caddis fly), <i>Argogorytes fargei</i> (a digger wasp), whirligig beetle (<i>Gyrinus urinator</i>), <i>Bembidion littorale</i> (a ground beetle), the scarab beetle (<i>Ageiallia sabuleti</i>), the dance fly (<i>Hilara pseudochorica</i>), and the stiletto fly (<i>Psilocephala rustica</i>). The riparian zone is nationally important for tansy beetle.</p>
Moor Lane, Stutton verges Candidate SINC	~1m south-east	New site, not yet surveyed by the relevant local authority, no citation available.
Shire Oaks, Healaugh SINC	~24m south	Ancient woodland dominated by oak (<i>Quercus</i> sp), sycamore (<i>Acer pseudoplatanus</i>) and ash. Calcareous pockets are dominated by dog's mercury (<i>Mercurialis perennis</i>) and some wood avens (<i>Geum urbanum</i>), enchanter's nightshade (<i>Circaea lutetiana</i>) and false brome (<i>Brachypodium sylvaticum</i>). Only on the eastern edge is true oak wood flora present including bluebell (<i>Hyacinthoides non-scripta</i>), broad buckler fern (<i>Dryopteris dilatata</i>) and wood sorrel (<i>Oxalis acetosella</i>). Two felled areas are dominated by American (<i>Epilobium ciliatum</i>) and hoary (<i>Epilobium parviflorum</i>) willowherb. Deep open drains have abundant watercress (<i>Nasturtium officinale</i>), water plantain (<i>Alisma plantago-aquatica</i>) and water starwort (<i>Callitriche stagnalis</i>).

Site	Location*	Summary of interest features
Lord's Quarry SINC	~42m east	Never surveyed – no citation available.
Osbalwick Meadow Candidate SINC	~62m west	Two small ridge and furrow meadows. The grassland ranges from poorly drained furrows that are wet in winter through to a drier, sandy, slightly acid fine leaved sward. At the time of survey the grassland is not in good condition, being heavily but selectively grazed by horses and there are extensive patches of dock and nettle but there is also a good overall flora. There are two old ponds in the field that are moderately diverse in aquatic plants though grazed by horses. The site scores 11/8 under Criteria Gr4 for neutral species rich grasslands of which at least six have a frequency of 'occasional' or above. The site may also qualify under Criteria Gr1 for the presence of MG5 grassland.
Smaws Wood SINC	~0.10km west	The site is an intact wood with mature broad-leaved trees and occasional conifers. A good amount of deadwood is present. Signs of new tree planting. The west side appears to be more species-rich than the east.
Huddlestone Old Wood (Lotherton Woodlands) SINC	~0.12km south-west	This site consists of broad-leaved plantations to the south with enclaves of mixed. Sycamore is the most abundant species.
Bullen Wood SINC	~0.14km west	Ancient calcareous woodland dominated by sycamore, beech (<i>Fagus sylvatica</i>), larch (<i>Larix</i> sp.) and poplar (<i>Populus</i> sp.). The canopy is dense and in need of thinning. The understory is sparse and is comprised of hazel (<i>Corylus avellana</i>), hawthorn (<i>Crataegus monogyna</i>) and ash. The field layer is dominated by dog's mercury and false brome. The south-west area also has tufted hair-grass (<i>Deschampsia cespitosa</i>) and brambles (<i>Rubus fruticosus</i> agg). Ramsons (<i>Allium ursinum</i>) is occasional throughout. Enchanter's nightshade is also frequent and herb-paris (<i>Paris quadrifolia</i>) is notable in the north-east.
Scrub South West of Low Park Farm SINC	~0.17km north-east	Citation has not been requested ¹² .
Crag Wood SINC	~0.18km south-east	No citation available.
Osbalwick Crossing, Murton	~0.29km north	Citation has not been requested.

¹² Following the initial screening of sites within 2km of the Site, only citations for those SINC/candidate SINC/deleted SINC which have the potential to be affected by the Project were requested from the Local Biodiversity Records Centres in line with a proportional approach to data collation. As a minimum this included those sites within 0.10km of the Site.

Site	Location*	Summary of interest features
Way Candidate SINC		
Bank on Laith Staid Lane SINC	~0.43km north	Citation has not been requested.
Healaugh Marsh SINC	~0.48km east	Citation has not been requested.
Moorlands YWT Reserve	~0.54km south	The site is a small woodland with species such as rhododendrons (<i>Rhododendron</i> sp.), azaleas, snowdrops (<i>Galanthus</i> sp.), bluebells, primrose (<i>Primula vulgaris</i>) and wood sorrel. Bat boxes on site have been utilised by common pipistrelle (<i>Pipistrellus pipistrellus</i>) and brown long-eared (<i>Plecotus auritus</i>) with soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), Brandt's (<i>Myotis brandtii</i>) and Daubenton's bat (<i>Myotis daubentonii</i>) also recorded on the site.
Newthorpe Quarry SINC	~0.79km west	Citation has not been requested.
Sherburn Willows YWT Reserve	~0.80km south-east	Citation has not been requested.
Wormstall Wood LWS	~0.81km south-west	Citation has not been requested.
Newthorpe Farm Grassland and Verge SINC	~0.83km north-west	Citation has not been requested.
Ledsham Bank YWT Reserve	~0.86km south-west	The site is situated in a valley on the magnesium limestone, supporting pyramidal (<i>Anacamptis pyramidalis</i>), common spotted (<i>Dactylorhiza fuchsia</i>) and fragrant orchids (<i>Gymnadenia conopsea</i>). Other typical limestone plants have been recorded on site, including yellow dyer's greenweed (<i>Genista tinctoria</i>), which is rare in the county. The site is managed to enhance the limestone grassland.
Hazel Wood SINC	~0.99km west	Citation has not been requested.
Hayton Wood SINC	~1.01km west	Citation has not been requested.
Murton Meadow Candidate SINC	~1.09km north-east	Citation has not been requested.
Wilstrop Wood and Ditches SINC	~1.06km north-west	Citation has not been requested.
Renshaw Wood, Towton SINC	~1.18km east	Citation has not been requested.

Site	Location*	Summary of interest features
Pond at Betteras Hill Road SINC	~1.20km east	Citation has not been requested.
Rawcliffe Ings Dyke SINC	~1.22km south-east	Citation has not been requested.
Bramham Park LWS	~1.47km south-west	Citation has not been requested.
Bramham Park SEI	~1.47km south-west	Citation has not been requested.
Hartly Wood and Castle Hills LWS	~1.48km west	The site consists of two large plantation woodlands surrounded by arable fields and hawthorn/hazel hedges. The site supports a number of species which are rare or uncommon in West Yorkshire such as Mountain melick (<i>Melica nutans</i>). The woodland supports a good range of breeding birds.
Hartly Wood/Castle Hills SEI	~1.48km west	Citation has not been requested.
Hessay Churchyard SINC	~1.50km south-east	Citation has not been requested.
Seavy Carr Wood SINC	~1.57km south-east	Citation has not been requested.
Grassland by Cock Beck SINC	~1.59km south-east	Citation has not been requested.
Coburnhill Wood LWS	~1.61km west	Citation has not been requested.
Bywater Wood SINC	~1.61km south-east	Citation has not been requested.
Frog Hall Quarry SINC	~1.64km south-west	Citation has not been requested.
Byram Park (Part in Brotherton) SINC	~1.66km south	Citation has not been requested.
Fairburn Ings RSPB Reserve	~1.67km south-west	A former industrial site rich in heritage and an important site for breeding and wintering wildfowl.
Byram Park SINC	~1.68km south	Citation has not been requested.
Carr Wood SINC	~1.72km east	Citation has not been requested.
Stutton Railway Track Candidate SINC	~1.73km south-east	Citation has not been requested.

Site	Location*	Summary of interest features
Land adjacent to Cock Beck SINC	~1.76km south	Citation has not been requested.
Town Pond Shirbutt Lane (HY4) SINC	~1.84km south-east	Citation has not been requested.
Ring Rd Embankment Millfield Lane A1237 SINC	~1.90km south	Citation has not been requested.
Poppleton Glassworks (5-30) SINC	~1.92km south	Citation has not been requested.
Poppleton Ings South – Ditch Candidate SINC	~1.96km south-east	Citation has not been requested.
Copse Meadow, Rawcliffe Ings Candidate SINC	~1.98km south-east	Citation has not been requested.
Deleted non-statutory biodiversity sites of nature conservation interest within 2km of the Order Limits boundary		
Field nr Healaugh Manor Farm Deleted SINC	Within the Order Limits	This site is bordered by a plantation of coniferous species (Scots Pine (<i>Pinus sylvestris</i>)) with occasional deciduous species (crack willow (<i>Salix fragilis</i>), hawthorn, elder (<i>Sambucus nigra</i>)). The predominant herb layer comprises tall neutral grassland. A dyke transverses the site and snowberry (<i>Symphoricarpos albus</i>) forms local enclaves.
Disused Quarry, Newthorpe Deleted SINC	Within the Order Limits	Disused magnesium limestone quarry filled with dense scrub supressing calcareous flora. The scrub consists of ash, hawthorn, elder and blackthorn (<i>Prunus spinosa</i>). There are only a few remnants of calcareous flora such as tor grass and upright brome found on grassy banks.
Healaugh Priory Marsh Deleted SINC	~41m west	The site consists of central marshland bounded to the north and south by dense scrub woodland of various willow (<i>Salix</i> sp.), oak and ash species. The marshland is in the intermediate stage of drying out, lacking any true wetland species and colonised by coarse herbage; meadowsweet and wild angelica. The proximity of the woodland indicates the water table will progressively lower and new willow is likely to invade.
Towton Dale Fields Deleted SINC	~0.11km south-east	This site comprises semi-improved neutral grassland. The area is cattle-grazed and dominated by ryegrass. The woodland area of the site is dominated by even-aged sycamore and has a disturbed herb layer made up of species such as dog's mercury, wood anemone

Site	Location*	Summary of interest features
		(<i>Anemonoides nemorosa</i>), wood false brome (<i>Brachypodium sylvaticum</i>) and early purple orchid (<i>Orchis mascula</i>). The grassland is surrounded by a dense to discontinuous hawthorn hedge.
Castle Hill Wood Deleted SINC	~0.12km north-east	This plantation woodland has a canopy dominated by sycamore and ash. There is good regeneration of ash and sycamore with dead felled timber throughout.
Field at Betteras Hill Road Deleted SINC	~0.42km north-east	Citation has not been requested.
Wood on Whin Lane nr Steeton Hall Deleted SINC	~0.46km east	Citation has not been requested.
Roadside Verge near Lotherton Park Farm Deleted SINC	~0.46km west	Citation has not been requested.
Meadow near Hillam Gates Level Crossing Deleted SINC	~0.51km east	Citation has not been requested.
Crow Hill, Lead Hall Farm Deleted SINC	~0.53km north-west	Citation has not been requested.
Castle Hill Deleted SINC	~0.65km east	Citation has not been requested.
Field at side of Hillam Gates Level Crossing Deleted SINC	~0.72km north-east	Citation has not been requested.
Copley Lane Quarry Deleted SINC	~0.91km east	Citation has not been requested.
Daniel Hartlet's Wood Deleted SINC	~0.93km west	Citation has not been requested.
Renshaw Wood Deleted SINC	~1.00km east	Citation has not been requested.
Wood near Wingate Hill Farm Deleted SINC	~1.02km south-east	Citation has not been requested.
Brickyard Pond Deleted SINC	~1.02km south-east	Citation has not been requested.
Ringhay Wood Deleted SINC	~1.03km west	Citation has not been requested.

Site	Location*	Summary of interest features
South of Cock Beck Deleted SINC	~1.19km west	Citation has not been requested.
Area around Cock Beck, Mill Lane Deleted SINC	~1.23km south-east	Citation has not been requested.
Willow Carr, Cock Bridge Deleted SINC	~1.29km south-east	Citation has not been requested.
The Rein, South of Cock Beck Deleted SINC	~1.57km west	Citation has not been requested.
Monk Fryston Churchyard Deleted SINC	~1.72km north-east	Citation has not been requested.
Catterton Rash Deleted SINC	~1.75km south-east	Citation has not been requested.
Dalton Wood Deleted SINC	~1.76km south-east	Citation has not been requested.
Lower & Upper Woods Deleted SINC	~1.80km east	Citation has not been requested.
Pond East of A63 Deleted SINC	~1.93km north-east	Citation has not been requested.

Species records

2.3.5 **Table 2.3** provides a summary of the key species records that are dated within the last ten years¹³, principally:

- protected species;
- SPIs;
- nationally rare or UK red-list species; and
- other records notable in a local context (e.g. LBAP species; species other than those above, which are identified by the data provider as being locally significant; records suggesting potentially significant local populations).

¹³ i.e. since 2011; this focuses on those records most likely to be relevant to the Project and the current land-use baseline.

Table 2.3 – Key species records from past ten years

Species	No. of records	Closest record	Protection*	Other conservation criteria*
Mammals				
Brandt's bat	1	~1.60km west	HR, WCA	LBAP
Brown long-eared bat	18	~60m north-west	HR, WCA	LBAP
Common pipistrelle	17	~0.27km south-west	HR, WCA	LBAP
Daubenton's bat	2	~0.64km south-east	HR, WCA	LBAP
Leisler's bat (<i>Nyctalus leisleri</i>)	1	~1.60km west	HR, WCA	LBAP
Noctule bat (<i>Nyctalus noctula</i>)	12	~60m north-west	HR, WCA	LBAP
Pipistrelle species	17	~60m north-west	HR, WCA	LBAP
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	25	~60m north-west	HR, WCA	LBAP
Unidentified bat	11	~0.30km south	HR, WCA	LBAP
Additional bat roost records 2-5km from Order Limits (soprano pipistrelle, brown long-eared bat, common pipistrelle, whiskered bat (<i>Myotis mystacinus</i>) and unidentified bat species)	17	~2.39km west	HR, WCA	N/A
Otter	22	Within the Order Limits	HR, WCA	LBAP
Water vole	3	~0.51km west	WCA	SPI, RL, LBAP
Badger (<i>Meles meles</i>)	12	Within the Order Limits	PBA	N/A
Brown hare (<i>Lepus europaeus</i>)	2	~1.60km north-west	-	SPI, LBAP
Harvest mouse (<i>Micromys minutus</i>)	1	~0.98km south-east	-	SPI, RL, LBAP
Hedgehog (<i>Erinaceus europaeus</i>)	7	~0.35km north	-	SPI, RL
Reptiles & Amphibians				
GCN	16	Within the Order Limits	HR, WCA	LBAP

Species	No. of records	Closest record	Protection*	Other conservation criteria*
Grass snake (<i>Natrix natrix</i>)	1	~1.99km east	WCA	SPI
Common toad (<i>Bufo bufo</i>)	4	~0.64km south-east	-	SPI, LBAP
Fish				
Barbel (<i>Barbus barbus</i>)	2	~0.61km north-west	HR	N/A
Grayling (<i>Thymallus thymallus</i>)	1	~0.87km east	HR	LBAP
Brown/sea trout (<i>Salmo trutta</i>)	3	~3m south-east	-	SPI
European eel (<i>Anguilla anguilla</i>)	6	~3m north-west	-	SPI, RL, LBAP
Sea lamprey	1	~0.83km north	-	SPI, LBAP
Bullhead (<i>Cottus gobio</i>)	5	~3m south-east	-	LBAP
Invertebrates				
White-clawed crayfish (<i>Austropotamobius pallipes</i>)	1	~1.52km west	WCA	SPI, RL, LBAP
Tansy beetle	213	Within the Order Limits	- -	SPI, RL, LBAP
Depressed river mussel (<i>Pseudanodonta complanata</i>)	2	~0.64km north	- -	SPI, RL, LBAP
Cinnabar (<i>Tyria jacobaeae</i>)	1	~1.99km south-east	-	SPI, LBAP
Dark-barred twin-spot carpet (<i>Xanthorhoe faregate</i>)	1	~0.82km south	-	SPI
Dot moth (<i>Melanchra persicariae</i>)	1	~0.73km south	-	SPI
Green-brindled crescent (<i>Allophytes oxyacanthae</i>)	1	~0.73km south	-	SPI
Oak hook-tip (<i>Watsonalla binaria</i>)	1	~0.82km south	-	SPI
Rosy rustic (<i>Hydraecia micacea</i>)	2	~0.73km south	-	SPI
September thorn (<i>Ennomos erosaria</i>)	1	~1.89km north	-	SPI

Species	No. of records	Closest record	Protection*	Other conservation criteria*
Small phoenix (<i>Ecliptopera silaceata</i>)	1	~0.73km south	-	SPI
Caddis fly (<i>Ceraclea senilis</i>)	1	~0.74km south	-	Nationally notable
Plants				
Round-headed leek (<i>Allium sphaerocephalon</i>)	1	~1.83km west	WCA	RL
Thistle broomrape (<i>Orobanche reticulata</i>)	1	~62m east	WCA	SPI, RL
Pasqueflower (<i>Pulsatilla vulgaris</i>)	3	~1.17km south-west	-	SPI, RL, LRDB
Rare spring-sedge (<i>Carex ericetorum</i>)	5	~1.18km south-west	-	SPI, RL
Autumn gentian (<i>Gentianella amarella</i>)	6	~1.10km west	-	RL
Autumn lady's-tresses (<i>Spiranthes spiralis</i>)	2	~1.33 km west	-	RL, LRDB
Bladder-sedge (<i>Carex intumescense</i>)	1	~1.56km south-east	-	RL
Carline thistle (<i>Carlina vulgaris</i>)	3	~1.10km west	-	RL
Common cudweed (<i>Filago vulgaris</i>)	3	~1.10km west	- -	RL
Common rock-rose (<i>Helianthemum nummularium</i>)	4	~1.33km west	- -	RL
Corn mint (<i>Mentha arvensis</i>)	2	~1.56km south-east	- -	RL
Crosswort (<i>Cruciata laevipes</i>)	7	~0.36km north	- -	RL
Devil's-bit scabious (<i>Succisa pratensis</i>)	2	~1.12km west	- -	RL
Dyer's greenweed	3	~1.26km west	- -	RL
Eyebright (<i>Euphrasia officinalis</i>)	2	~1.33km west	- -	RL, LRDB
Field garlic (<i>Allium vineale</i>)	5	~0.13km south-east	- -	RL

Species	No. of records	Closest record	Protection*	Other conservation criteria*
Field scabious (<i>Knautia arvensis</i>)	4	~0.84km west	- -	RL
Flea sedge (<i>Carex pulicaris</i>)	1	~1.83km west	-	RL
Harebell (<i>Campanula rotundifolia</i>)	3	~0.84km south-east	-	RL
Heath speedwell (<i>Veronica officinalis</i>)	1	~1.83km west	-	RL
Hoary plantain (<i>Plantago media</i>)	4	~1.12km west	-	RL
Lady's-mantle (<i>Alchemilla mollis</i>)	1	~1.50km west	-	RL
Quaking-grass (<i>Briza media</i>)	9	~0.80km north-east	-	RL
Sainfoin (<i>Onobrychis viciifolia</i>)	1	~0.98km south-east	-	RL
Sanicle (<i>Sanicula europaea</i>)	5	~0.64km south-east	-	RL
Tormentil (<i>Potentilla erecta</i>)	1	~1.83km west	-	RL
Wild pansy (<i>Viola tricolor</i>)	1	~1.49km west	-	RL
Wild strawberry (<i>Fragaria vesca</i>)	15	~1.10km west	-	RL
Wood-sorrel	2	~0.64km south-east	-	RL
Cowslip (<i>Primula veris</i>)	23	~2m north	-	LBAP
Herb-paris	1	~1.50km west	-	LBAP, LRDB
Small scabious (<i>Scabiosa columbaria</i>)	1	~1.90km west	-	LRDB
Birds				
Barn owl (<i>Tyto alba</i>)	5	~90m north-west	WCA Schedule 1	LBAP
Kingfisher (<i>Alcedo atthis</i>)	1	~1.52km north-west	WCA Schedule 1	LBAP
Peregrine (<i>Falco peregrinus</i>)	2	~1.06km south-east	HR, WCA Schedule 1	-

Species	No. of records	Closest record	Protection*	Other conservation criteria*
Red kite (<i>Tyto alba</i>)	7	~6m north-east	HR, WCA Schedule 1	RL, LBAP
Yellowhammer (<i>Emberiza citronella</i>)	1	~1.33km west	-	SPI, RL, LBAP
Grey wagtail (<i>Motacilla cinerea</i>)	1	~1.52km north-west	-	RL
Mallard	1	~1.89km west	-	RL
Invasive Non-Native Species				
American mink (<i>Neovison vison</i>)	2	~1.10km east	Sch 9 of WCA	-
Canadian waterweed (<i>Elodea canadensis</i>)	2	~1.56km south-east	Sch 9 of WCA	-
Curly waterweed (<i>Lagarosiphon major</i>)	1	~1.94km west	Sch 9 of WCA	-
Grey squirrel	3	~0.60km south-west	Sch 9 of WCA	-
False-acacia (<i>Robinia pseudoacacia</i>)	1	~1.83km north	Sch 9 of WCA	-
Giant hogweed (<i>Heracleum mantegazzianum</i>)	6	~2m north	Sch 9 of WCA	-
Himalayan balsam (<i>Impatiens glandulifera</i>)	33	Within the Order Limits	Sch 9 of WCA	-
Japanese rose (<i>Rosa rugosa</i>)	1	~1.99km south-east	Sch 9 of WCA	-
Nuttall's waterweed (<i>Elodea nuttallii</i>)	3	~1.56km south-east	Sch 9 of WCA	-
Rhododendron	2	~1.28km north-west	Sch 9 of WCA	-
American skunk-cabbage (<i>Lysichiton americanus</i>)***	1	~0.82km south	-	-
Canadian goldenrod (<i>Solidago canadensis</i>)***	1	~0.84km south-east	-	-
Turkey oak (<i>Quercus cerris</i>)***	2	~0.36km north	-	-

Table notes

- Absence of species records does not indicate absence from the Order Limits or local area.

Key.

*List of acronyms in columns 4 and 5:

- PBA – Protection of Badgers Act 1992.
- WCA – Wildlife and Countryside Act 1981 (as amended)
- HR – Conservation of Habitats and Species Regulations 2017 (as amended) or The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- SPI – Species of Principal Importance; see Box 1
- LBAP – Local BAP species for North and West Yorkshire
- RL – Red List species; see Box 1
- LRDB – Local Red Data Book (WYJS)

*** Plant species not listed on Schedule 9 of Wildlife and Countryside Act 1981 (as amended) but are listed on GB non-native species secretariat

Existing European Protected Species Mitigation Licences (EPSL)

2.3.6 The desk study identified 25 EPSL for bat and one EPSL for otter. These are summarised in **Table 2.4**. The location of these records relative to the Order Limits is shown on **Figure 8.3, Volume 5, Document 5.4.8**.

Table 2.4 – EPSL licence returns records from past ten years

Species	Year	Record Type	Grid reference	Distance and direction from the Order Limits	Notes
Bat	2010-2012	EPSL	SE 4730 4649	~0.55km south-west	EPSM2010-2217 ¹⁴ ; brown long-eared bat; destruction of a resting place
Bat	2017-2018	EPSL	SE 5771 5871	~0.98km east	2017-31243-EPS-MIT; Brandt's, brown long-eared bat, common pipistrelle, soprano pipistrelle, whiskered bat (<i>Myotis mystacinus</i>); impact on breeding site; damage of breeding site; destruction of resting place

¹⁴ EPSM stands for European Protected Species Mitigation licence

Species	Year	Record Type	Grid reference	Distance and direction from the Order Limits	Notes
Bat	2012-2014	EPSL	SE 4751 2812	~1.21km south-west	EPSM2012-5102; common pipistrelle; destruction of a resting place
Bat	2012-2014 (covers two licences)	EPSL	SE 4240 4211	~1.41km west	EPSM2013-6199; EPSM2012-4628; soprano pipistrelle; destruction of resting place
Bat	2017	EPSL	SE 5080 5012	~1.55km east	2017-29761-EPS-MIT; common and soprano pipistrelle; impact on breeding site; damage of breeding site; damage of resting place; destruction of breeding site; destruction of a resting place
Bat	2013-2015	EPSL	SE 4710 2781	~1.60km south-west	EPSM2013-6358; common and soprano pipistrelle and brown long-eared bat; destruction of a resting place
Bat	2014-2021 (covers three licences)	EPSL	SE 4480 4493	~2.54km north-west	2014-1487-EPS-MIT; 2014-1487-EPS-MIT-1; 2014-1487-EPS-MIT-2; brown long-eared, common pipistrelle, Natterer's bat (<i>Myotis nattereri</i>), soprano pipistrelle and Daubenton's bat; destruction of resting place
Bat	2013-2015	EPSL	SE 4500 3087	~1.99km west	EPSM2012-5319; soprano pipistrelle and brown long-eared bat; destruction of a resting place
Bat	2015-2020	EPSL	SE 4510 4611	~2.34km north-west	2014-5878-EPS-MIT; common pipistrelle;

Species	Year	Record Type	Grid reference	Distance and direction from the Order Limits	Notes
					destruction of a resting place
Bat	2016-2021	EPSL	SE 4487 4630	~2.59km north-west	2016-24939-EPS-MIT; 2016-24939-EPS-MIT-1; common and soprano pipistrelle; damage of resting place; destruction of resting place
Bat	2015-2019	EPSL	SE 5059 3670	~3.43km east	2014-4918-EPS-MIT; common pipistrelle; destruction of a resting place
Bat	2013-2014	EPSL	SE 4471 2800	~3.43km south-west	EPSM2011-2852; common pipistrelle, brown long-eared bat and Daubenton's bat; destruction of a resting place
Bat	2013-2014	EPSL	SE 6039 5220	~3.48km west	EPSM2013-6327; common pipistrelle; destruction of a resting place
Bat	2017-2030	EPSL	SE 6001 5190	~3.94km west	2017-31011-EPS-MIT; common pipistrelle; impact on breeding site; damage of breeding site; destruction of a resting place
Bat	2014-2016	EPSL	SE 4618 5532	~4.02km north-west	2014-164-EPS-MIT; brown long-eared bat, common pipistrelle and Natterer's bat; destruction of a resting place
Bat	2012-2014	EPSL	SE 6230 5892	~4.08km east	EPSM2012-4802; common pipistrelle and brown long-eared bat; destruction of a resting place

Species	Year	Record Type	Grid reference	Distance and direction from the Order Limits	Notes
Bat	2014-2020	EPSL	SE 4350 2891	~4.08km south-west	2014-4418-EPS-MIT; brown long-eared bat, common pipistrelle, Natterer's bat and soprano pipistrelle; impact on a breeding site; damage of a breeding site; damage of a resting place; destruction of a resting place
Bat	2013-2014	EPSL	SE 6150 5550	~4.20km north-west	EPSM2013-5983; brown long-eared bat; destruction of a resting place
Bat	2010-2011	EPSL	SE 5288 2668	~4.20km south-east	EPSM2009-1563; brown long-eared bat; impact on a breeding site; destruction of a breeding site; destruction of a resting place
Bat	2012	EPSL	SE 5150 4173	~4.41km south-east	EPSM2011-3498; common pipistrelle and Natterer's bat; destruction of a resting place
Bat	2014-2015	EPSL	SE 5371 4801	~4.44km east	2014-901-EPS-MIT; common pipistrelle; Natterer's bat and soprano pipistrelle; destruction of a resting place
Bat	2010-2012	EPSL	SE 6098 5612	~4.45km east	EPSM2010-1693; common pipistrelle; destruction of a resting place
Bat	2017	EPSL	SE 5379 4778	~4.51km east	2016-27078-EPS-MIT; common pipistrelle and Natterer's bat; 2027-2017; destruction of a resting place

Species	Year	Record Type	Grid reference	Distance and direction from the Order Limits	Notes
Bat	2016	EPSL	SE 5849 6472	~4.59km north	2016-26617-EPS-MIT; common pipistrelle and Natterer's bat; impact on breeding site; damage of breeding site; destruction of resting place
Bat	2013-2018	EPSL	SE 5409 4852	~4.85km east	EPSM2013-6433; common pipistrelle, soprano pipistrelle, brown long-eared bat, whiskered bat and Natterer's bat; destruction of breeding site; destruction of a resting place
Otter	2013	EPSL	SE 4771 4409	~0.11km north-east	EPSM2012-5196; destruction of a resting place

Habitats and features

Order Limits context

2.3.7 A review of freely-available web-based aerial photography shows that the Order Limits are located in a rural landscape with habitat features typical of the north and east of Yorkshire, including:

- large areas of arable;
- arable field margins usually associated with a network of hedgerows;
- pasture;
- scattered areas of small woodlands; and
- a network of ditches and waterways.

2.3.8 These features provide suitable habitat linkages to and around the land within the Order Limits for a range of species including, but not limited to bats, water voles, otters and badgers. Land within the Order Limits appears unexceptional at the landscape scale, supporting a similar range of habitats and features to the surrounding area.

Notable habitats and networks

- 2.3.9 A review of the MAGIC website identified the following HPI and notable habitat types within approximately 2km of the Order Limits (see **Figure 8.2, Volume 5, Document 5.4.8**):
- Ancient woodland (semi-natural and replanted), the closest parcel being within the Order Limits;
 - deciduous woodland¹⁵, the closest parcel being within the Order Limits;
 - traditional orchard, the closest parcel being within the Order Limits;
 - coastal floodplain grazing marsh, the closest parcel being within the Order Limits;
 - lowland fens, the closest being within the Order Limits;
 - open mosaic habitats on previously developed land (draft), the closest parcel being approximately 18m south-east of the Order Limits;
 - lowland calcareous grassland, the closest being approximately 0.85km south-east of the Order Limits; and
 - wood pasture and parkland, the closest of being approximately 1.18km north of the Order Limits.

Water bodies

- 2.3.10 Three hundred and thirty water bodies (223 ponds and 107 ditches) were identified within 250m of the Order Limits.

Important Hedgerows

- 2.3.11 105 hedgerows/sections of hedgerow are to be removed. Of these, 85 hedgerows are identified as 'important' under Criteria 3(a) and 5(a) of 'archaeology and history' criteria, and nine are identified as 'potentially important' with respect to 'wildlife and landscape' criteria. The remaining eleven hedgerows are assessed to be 'not important'. Details are provided in **Annex 8B.4** and shown on **Figure 8.6, Volume 5, Document 5.4.8**.

¹⁵ The desk study identified that woodland within the area of search is recorded on the Priority Habitat Inventory (PHI) as being "deciduous woodland" priority habitat. PHI is a spatial dataset which describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 HPIs in England. Lowland mixed deciduous woodland is the Section 41 habitat type likely to best describe the woodland habitat within the area of search. However, the Section 41 habitat definition for lowland mixed deciduous woodland focuses predominantly on semi-natural woodlands. Consequently, until a field survey 'ground truths' the woodland parcels it is unknown whether those habitats recorded within the Site are considered to qualify as either Section 41 or LBAP habitat.

3. Extended Phase 1 Habitat Survey

Phase 1 habitat survey is an established field-scale vegetation survey method that classifies land parcels into various habitat categories. The survey is typically ‘extended’ to identify other relevant biodiversity features, such as the potential for legally protected species to use a site.

3.1 Survey area

- 3.1.1 The extended Phase 1 habitat survey encompassed the land within the Order Limits and a 50m buffer (where accessible).
- 3.1.2 The buffer accounts for the potential for ecological features occurring outside of the Order Limits to be impacted by the Project (for example rest sites of species such as bats and otter which could potentially be indirectly disturbed by distant activities).

3.2 Methods

- 3.2.1 A Phase 1 habitat survey¹⁶ of the land within the Order Limits and 50m buffer (where access was permitted and possible) was undertaken during 2021 and 2022 as part of the following site visits:
 - 10 May – 14 May 2021;
 - 01 June – 04 June 2021;
 - 09 June – 11 June 2021;
 - 21 June – 24 June 2021;
 - 05 July – 08 July 2021;
 - 02 August – 05 August 2021;
 - 25 August 2021;
 - 07 March – 11 March 2022;
 - 14 March – 15 March 2022;
 - 17 June 2022;
 - 01 July 2022; and
 - 12 July 2022.
- 3.2.2 Distinct habitats were identified and any conservation-notable habitats or interest features that were too small to map were subject to a more detailed description in the form of a Target Note (TN; see **Annex 8B.2**). As the standard Phase 1 habitat survey methodology is largely concerned with vegetation communities only, the survey was

¹⁶ Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit (online) (Accessed 11 August 2021).

'extended' in accordance best practice guidance¹⁷ to include the following throughout land within the Order Limits and 50m buffer (subject to access):

- preliminary searches for evidence of protected or conservation-notable species/species-groups (including, but not limited to: bats; badger; water voles; reptiles; and otters), and for suitable habitats or features which could potentially support them if direct evidence is absent;
- preliminary hedgerow assessments, aimed at identifying hedges that might be classified as 'important' based on the relevant ecological and structural criteria set out in the Hedgerows Regulations 1997¹⁸ (although note that formal surveys in this respect were not undertaken);
- the identification of other potential constraints (e.g. non-native invasive plant species) or opportunities (e.g. opportunities for micro-siting to minimise potential impacts, or provide ecological enhancements) that may be present within the Order Limits; and
- habitats present according to the UK Habitat Classification System and preliminary information on habitat condition¹⁹ to inform the Biodiversity Net Gain (BNG) Assessment (see **Biodiversity Net Gain Report, Volume 7, Document 7.9**).

- 3.2.3 The search and assessment methods used for key species and species groups are summarised in **Table 3.1**; it must be noted that the use of these search methods alongside a Phase 1 habitat survey will not generally confirm that a species is absent, unless otherwise stated, and will not necessarily remove the need for additional species-specific surveys to determine the baseline for assessment or mitigation requirements. The location of key interest features (e.g. potential bat roosts, badger sett entrances, water vole burrows, or mature trees) were recorded using a GPS unit.
- 3.2.4 With regard to protected and conservation-notable animal species, habitats are initially defined as being either 'suitable', or 'unsuitable' to support a particular species, where direct evidence of a species is absent. The need for further survey work is then based on additional contextual information (e.g. desk study records; accessibility of land within the Order Limits; relative suitability of the habitats in a local context; etc.) moderated by professional experience of similar schemes and habitats.
- 3.2.5 No preliminary searches for evidence of suitable habitat for dormice or white-clawed crayfish were carried out as the Order Limits are outside the known range for these species and therefore these are not considered within this report^{20,21}.

¹⁷ Institute of Environmental Assessment (1995). Institute of Environmental Assessment: Guidelines for Baseline Ecological Assessment. Taylor & Francis; London.

¹⁸ UK Government (1997). The Hedgerows Regulations 1997. (Online) Available from: <https://www.legislation.gov.uk/ukxi/1997/1160/contents/made> (Accessed August 2021).

¹⁹ UK Habitat Classification data and opportunities for Biodiversity Net Gain are reported in **Volume 7, Document 7.9**.

²⁰ Mathews F, Kubasiewicz LM, Gurnell J, Harrower CA, McDonald RA, Shore RF. (2018) A Review of the Population and Conservation Status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

²¹ Environment Agency (2020) Yorkshire Area Biosecurity Protocol – Crayfish Distribution Maps.

Table 3.1 - Summary of preliminary search and assessment methods for species used during the extended Phase 1 habitat survey

Species	Methods
Bats (all species)	<p>Individual or small clusters of trees (excluding blocks of woodland) and structures were assessed for their potential to support roosting or hibernating bats. Roosting features might typically include:</p> <ul style="list-style-type: none"> • Trees with cavities, splits, cracks, holes or loose bark, or trees with a dense covering of ivy (<i>Hedera helix</i>). • Buildings with gaps that would allow bats access or features such as bargeboards, fascia, soffits, hanging tiles, cavity walls, wood frames, etc. <p>Potential bat foraging habitat was also noted.</p>
GCN	<p>Habitat Suitability Index (HSI) assessments²² were undertaken to determine likely suitability of ponds and ditches for GCN within 250m of the Order Limits²³.</p> <p>eDNA surveys²⁴ were undertaken at two ponds liable to direct impact (destruction/ damage) as a result of the Project within the footprint of the proposed Overton Substation.</p>
Otters	<p>The suitability of habitats for otters was assessed and any incidentally encountered evidence of otters including holts, laying up areas, spraints (particularly around prominent features such as tree stumps, boulders, culvert exits/entrances, or grass tussocks near watercourses) or feeding remains was noted, subject to access and Health and Safety (H&S) considerations (e.g. steep banks with dense vegetation adjacent deep water) for working near watercourses.</p>
Water voles	<p>The suitability for water voles was assessed using the Water Vole Habitat Suitability index (WVHS)²⁵ and taking into account factors within the Water Vole Mitigation Handbook²⁶. Any incidentally encountered evidence of water voles (including burrows, feeding remains, latrines or footprints) were noted, subject to access and H&S considerations for working near watercourses.</p>
Reptiles	<p>The suitability for reptiles was assessed with particular emphasis on embankments, slopes, potential natural and artificial refugia, interface or edge habitats, and shade-free areas near dense vegetation. The nature of extended Phase 1 habitat survey will typically limit the likelihood of</p>

²² Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). Herpetological Journal Vol 10 pp143-155.

²³ Although not required to inform a DLL application, the HSI assessments were undertaken at accessible water bodies prior to confirmation of the DLL approach taken for the Project.

²⁴ eDNA analysis is a technique using laboratory analysis of water samples collected from suitable water bodies to detect eDNA of great crested newts, and thus determine presence or likely absence of this species.

²⁵ Harris J, Markwell H & Raybould B (2009). A Method for Assessing Water Vole Habitat Suitability. In Practice, IEEM.

²⁶ Dean, R. Strachan, D. Gow, and R. Andrews (2016). The Water Vole Mitigation Handbook. The Mammal Society; London.

Species	Methods
Badger	casual observations or encounters although possible refugia such as boards or logs were examined for any evidence of use by reptiles.
Other species	Evidence of badger activity (including setts, badger paths, foraging marks, dung pits and hair) was noted.
Birds	The potential to support other protected species or species of nature conservation importance, particularly those identified by the desk study, was also assessed during the extended Phase 1 habitat survey.
Birds	Habitats were assessed for their suitability to support assemblages of breeding and wintering birds, as well as individual nesting birds, particularly conservation-notable species listed on Schedule 1 of the <i>Wildlife and Countryside Act 1981</i> (as amended). Schedule 1 birds are generally uncommon or behaviourally vulnerable species that receive additional protection over that afforded to all nesting birds.

Constraints

3.2.6 The survey had the following principal constraints:

- Approximately 89% of land within the Order Limits and 50m buffer has been surveyed, with access restrictions constraining survey at the remaining 11% of land. For those areas that have not been fully accessible (including habitats separated via major roads for which there was no safe access), surveys have been conducted using binoculars where appropriate from adjacent land parcels/Public Rights of Way (PRoW)/nearby roads, and a review of satellite imagery to assist in habitat identification within inaccessible land parcels²⁷.
- On comparison with the survey information from accessible land parcels and the results of the desk study, and following a review of satellite imagery of the inaccessible land parcels, those fully surveyed are likely to be broadly representative of land not accessed, with arable land as the dominant habitat type present.
- The survey results represent an ecological snapshot of land within the Order Limits and 50m buffer at the time of survey. The fauna and flora present may subsequently fluctuate in both species composition and numbers, on both a diurnal and seasonal basis. Species that appear earlier or later in the year may not therefore have been observed, and thus may remain unrecorded. However, consideration has been given to the potential for land within the Order Limits and 50m buffer to support protected and notable species which may be present in relation to the Order Limits location and the type and suitability of habitats present.
- Detailed hedgerow assessments to confirm the presence of important hedgerows as defined under the Hedgerows Regulations¹⁸ have not been conducted at this stage and would be carried out pre-construction in respect of any hedgerows to be impacted to ensure legal compliance.

²⁷ Google (2021). Google Earth Pro, recent imagery dated between May 2020 and April 2021. (online) (Accessed April 2022).

- Access to the interior of structures within the Order Limits and 50m buffer such as residential and commercial buildings and outbuildings has not been possible. However, the Project is unlikely to impact any buildings.

3.2.7 These constraints are discussed further in the relevant results sections; however, it is considered that they do not affect the validity or robustness of the survey or its conclusions.

3.3 Results

Habitats

3.3.1 The habitats recorded throughout land within the Order Limits and 50m buffer are illustrated on **Figure 8.4, Volume 5, Document 5.4.8** with descriptions of the TNs provided in **Annex 8B.2**. The main habitats within the Order Limits are broadly as follows:

- The Order Limits and 50m buffer are dominated by arable fields with narrow field margins and bound by hedgerows.
- Parcels of woodland are scattered throughout land within the Order Limits and 50m buffer.
- Dense and scattered scrub is common throughout land within the Order Limits and 50m buffer.

3.3.2 A summary of the habitats throughout land within the Order Limits and 50m buffer, and their potential to qualify as HPIs is provided in **Table 3.2**. The habitat summaries in this table should be read alongside the relevant figures, as indicated.

Table 3.2 - Summary of habitats throughout land within the Order Limits and 50m buffer

Habitats	Summary	HPI*
Woodland: Semi-natural broadleaved	<p>Parcels of semi-natural broadleaved woodland dominated by semi-mature and mature trees exist throughout land within the Order Limits and 50m buffer and typically comprise a range of species including ash, oak, willow, sycamore, horse chestnut (<i>Aesculus hippocastanum</i>) and beech. Ground flora diversity is generally low with bramble, common nettle, wood avens, bluebell, dog's mercury and cleavers (<i>Galium aparine</i>) as the usual dominant species.</p> <p>Semi-natural broadleaved woodland is present at (but not limited to):</p> <ul style="list-style-type: none"> • Within the Order Limits immediately adjacent to an existing track to pylon 2TW168 (see Figure 8.4 (sheet 3), Volume 5, Document 5.4.8). The west corner of the woodland block lies within the Order Limits. The woodland is mature with sycamore and oak being dominant with some silver birch (<i>Betula pendula</i>). A shrub layer of elder, hawthorn, and holly is 	Yes (lowland mixed deciduous woodland)

Habitats	Summary	HPI*
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present, while ground flora is sparse with bramble, wood avens and Himalayan balsam present. This woodland parcel is considered to qualify as HPI deciduous woodland based on the desk study and extended Phase 1 habitat survey.

- Within the Order Limits adjacent to The Foss (W5) within span XCP006/XC423 – XCP007/XC422 (see **Figure 8.4 (sheet 6), Volume 5, Document 5.4.8**). Mature oak and willow trees are present, with large willow trees lining the banks of The Foss. A hawthorn dominant shrub layer exists, with other species including *Prunus* sp. field maple (*Acer campestre*) and hazel (*Corylus avellana*). Ground flora is dominated by common nettle, with dogs' mercury, terrestrial grasses and bluebell also present. Although not listed as HPI in desk study records, this parcel may qualify as HPI based on the quality of the habitat observed.
- Within the Order Limits immediately adjacent to an existing track to pylon XCP007 and XC422 (see **Figure 8.4 (sheet 6), Volume 5, Document 5.4.8**). Tree species present include oak, ash, horse chestnut, and sycamore, with tree maturity varying (mature oaks, with many of the remaining trees being immature). Hawthorn scrub is present around the woodland edge. Ground flora includes bluebell and common nettle. This woodland parcel was identified as HPI deciduous woodland during the desk study and is considered to be HPI as a precaution as access to some areas was restricted.
- Within the Order Limits south-east of an existing access track to XC443 and Atterwith Lane (see **Figure 8.4 (sheet 8), Volume 5, Document 5.4.8**). Willow, ash and oak trees in a wet woodland with ponds present in the woodland. Ground flora comprises common nettle, cleavers and bramble with fern and bluebell occasional. There is also a hawthorn and willow scrub layer. Himalayan balsam is prevalent on the pond banks. This woodland parcel is considered to qualify as HPI based on the desk study and extended Phase 1 habitat survey.

Habitats	Summary	HPI*
	<ul style="list-style-type: none"> • Within the Order Limits immediately adjacent to an existing track to pylon XC465 (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8). Mature oak and ash dominate with occasional pine. Ground flora comprises Himalayan balsam, common nettle, broadleaved dock, bramble, hogweed (<i>Heracleum sphondylium</i>) and dogs' mercury. Some immature sycamore, dog rose (<i>Rosa canina</i>), hawthorn and elder scrub is also present. One planting tube was observed, however the structure of the woodland did not suggest it was planted (no planting lines), and instead it is considered the woodland has likely been supplemented with occasional planting. This woodland parcel was identified as HPI deciduous woodland during the desk study and although sycamore and Himalayan balsam encroachment are evident, the woodland is considered to be HPI deciduous woodland as a precaution as access to some areas was restricted. • Shire Oaks, Healaugh SINC, approximately 25m south of the Order Limits and proposed access route to pylon XC465, but within the 50m buffer (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8). This woodland comprises semi mature to mature sycamore and ash, with some shrub layer including field maple, hawthorn, and hazel. The ground flora is dominated by bramble, cleavers, and common nettle. The common nettle and bramble were chest high which restricted access within the woodland. This broadly corresponds with the SINC citation and is classed as HPI deciduous woodland. • Within the Order Limits beneath span XC472 - XC473 adjacent to the A659. (see Figure 8.4 (sheet 12), Volume 5, Document 5.4.8) Semi-mature and mature ash and willow trees are present with elder and hawthorn scrub. Ground flora is largely bare, and some areas of the woodland look like they could be waterlogged with rush and sedge vegetation. No obvious signs of planting such as planting lines or planting tubes. This woodland parcel was identified as HPI deciduous woodland during the desk study and although the habitat does not include a varied ground flora, it is considered to be HPI as a precaution. 	

Habitats	Summary	HPI*
Woodland: Broadleaved plantation	<p>Based on the results of the desk study and extended Phase 1 habitat survey, as a precaution all semi-natural broad-leaved woodland within the Order Limits is considered to represent HPI deciduous woodland (likely to correspond to lowland mixed deciduous woodland) as noted above.</p> <p>Parcels of land with immature and semi-mature broadleaved plantation woodland are present and scattered throughout land within the Order Limits and 50m buffer. The majority of plantation woodlands are considered to be small to moderate sized woodlands. Trees have been planted in obvious rows in the majority of the plantations and planting tubes are present within a few of the woodlands. Roadside plantations which are inaccessible on health and safety grounds, but which were viewed from adjacent land and noted to comprise predominantly broadleaved species are also included. Trees present within the plantations include poplar, silver birch, lime (<i>Tilia x europaea</i>), ash, alder, willow, oak, aspen (<i>Populus tremula</i>), holly (<i>Ilex aquifolium</i>), sycamore, with blackthorn, hawthorn and elm (<i>Ulmus minor</i>) shrub layer and ivy, cleavers, dog's mercury, common nettle, and bramble ground flora; Himalayan balsam is also present in numerous woodland parcels.</p> <p>Within the Order Limits, Overton Borrowpits SINC consists of two borrow pits either side of the railway (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8). Comprising largely scrubby woodland towards the edge of the two parcels and also in the middle with hawthorn, blackthorn and willow present. Trees did not appear to generally be mature and there was evidence of planted sycamore. Some areas of the SINC did comprise larger and more mature trees including beech, silver birch, oak and poplar. The edge of the SINC on the outskirts of the woodlands is dominated by rank grassland with herbs such as willowherb (<i>Epilobium</i> spp), common nettle, cleavers, garlic mustard (<i>Alliaria petiolate</i>) and oak saplings, with common nettle, bramble, wood sorrel and dog's mercury within the woodland ground flora. Himalayan balsam and Japanese knotweed are present within the SINC.</p> <p>Outside the Order Limits but within the 50m buffer, areas of broad-leaved plantation woodland exist along the margins of Healaugh Priory Marsh deleted SINC comprising tall but thin willow trees, with ash, field maple, oak, poplar, silver birch and sycamore also present (see Figure 8.4 (sheet 11), Volume 5,</p>	No

Habitats	Summary	HPI*
Woodland: Mixed plantation	<p>Document 5.4.8). Ground flora is dominated by common nettle, hogweed, and cleavers.</p> <p>The desk study identified two parcels of traditional orchard HPI within the Order Limits (~40m south of XC514 and span YR001A-YR002 (see Figure 8.4 (sheets 11 and 01 respectively), Volume 5, Document 5.4.8)). However, no orchard was identified during the extended Phase 1 habitat survey at the first location, with the area appearing to be mainly amenity grassland bordered by scrub along the railway and some trees. Additionally, no orchard was identified at the second location, with only grassland, tall ruderal and several scattered trees present.</p>	
Woodland: Mixed plantation	<p>Mixed woodland is present at several other locations throughout land within the Order Limits and 50m buffer. Coniferous trees are usually pine, with broadleaved trees including ash, oak, silver birch and sycamore. A shrubby understorey is usually present within most mixed plantation woodlands with species typically including hawthorn, blackthorn, elder, field maple and willow.</p> <p>Within the Order Limits, mixed woodland plantation surrounds the outer edges of Field nr Healaugh Manor Farm deleted SINC with tree species comprising largely of pine, with oak, hazel, blackthorn, hawthorn, field maple and elder also present, with ground flora comprising lords and ladies (<i>Arum maculatum</i>), bramble, common nettle and some Himalayan balsam (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8).</p>	No
Woodland: Coniferous plantation	<p>Within the Order Limits, the land parcel east of the field that pylon YN002 is located within contains coniferous plantation woodland managed commercially as Christmas tree farms with regular felling (see Figure 8.4 (sheet 3), Volume 5, Document 5.4.8). Another area of coniferous plantation is present south-east of XC455 with pine dominate and planted in lines (see Figure 8.4 (sheet 10), Volume 5, Document 5.4.8). Scattered elder shrub is present throughout the woodland with ground flora dominated by ramsons and common nettle, and Himalayan balsam towards the northern half of the woodland. There is some scattered oak but likely to be less than 10% of woodland.</p> <p>Larger areas of plantation that extend into the 50m buffer but outside the Order Limits are located to the north of XCP002 (see Figure 8.4 (sheet 7), Volume 5, Document 5.4.8) and west of XC419 (see Figure</p>	No

Habitats	Summary	HPI*
Grassland: Amenity	8.4 (sheet 4), Volume 5, Document 5.4.8) and could be used commercially.	No
Grassland: Improved	Improved grassland is present both within the Order Limits and 50m buffer associated with pasture fields, and sometimes field margins bordering arable land. Typically, the sward is dominated by perennial rye-grass (<i>Lolium perenne</i>) with clover (<i>Trifolium</i> sp) and occasional patches of common nettle and other grasses such as cocksfoot (<i>Dactylis glomerata</i>) and Yorkshire fog (<i>Holcus lanatus</i>).	No
Grassland: Poor semi-improved	<p>Poor semi-improved grassland fields occur throughout land within the Order Limits and 50m buffer. These are associated largely with pasture fields that have not been managed to the extent that they are considered to be 'improved'. Although the majority of fields comprise perennial rye-grass, they also commonly contain grasses such as cocksfoot, Yorkshire fog, bents (<i>Agrostis</i> sp), false oat-grass (<i>Arrhenatherum elatius</i>), and barren (<i>Bromus sterilis</i>) and soft brome (<i>Bromus hordeaceus</i>). This habitat contains a low diversity and abundance of forbs, with species typically including creeping buttercup (<i>Ranunculus repens</i>), clover, broad-leaved dock (<i>Rumex obtusifolius</i>), black medic (<i>Medicago lupulina</i>), creeping thistle (<i>Cirsium arvense</i>), and patches of common nettle. In some instances, these strips of grassland are used as access tracks.</p> <p>Poor semi-improved grassland is also commonly associated with arable field margins and at the base of hedgerows, usually with a higher proportion of tall ruderal species present such as common nettle, hogweed, creeping and spear thistle (<i>Cirsium vulgare</i>), hemlock (<i>Conium maculatum</i>) and cow parsley (<i>Anthriscus sylvestris</i>).</p> <p>Within the Order Limits, short, grazed grassland, with species including soft brome, snow drops, lesser celandine, spear thistle, common nettle, Yorkshire fog is present at Disused Quarry, Newthorpe Deleted SINC (see Figure 8.4 (sheet 17), Volume 5, Document 5.4.8). Animal dung was present in the grassland and the abundance of common nettle indicates this grassland is enriched. The grassland in this Deleted SINC is therefore considered to resemble poor semi-improved grassland.</p>	Yes (coastal floodplain and grazing marsh)

Habitats	Summary	HPI*
Grassland: Neutral semi-improved	<p>An area of poor semi-improved grassland south of the River Wharfe between XC471 and XC472 within the Order Limits was identified as HPI coastal and floodplain grazing marsh during the desk study (see Figure 8.4 (sheet 12), Volume 5, Document 5.4.8). At the time of the extended Phase 1 habitat survey the field had been partially mowed to a short sward, though creeping buttercup, cow parsley, and dandelion were identified. As the area is located within flood zone 3 of the River Wharfe floodplain Environment Agency flood map²⁸, and as historic aerial imagery shows livestock on the land²⁹, the area is classed as HPI habitat as a precaution.</p> <p>A second parcel of land outside the Order Limits but within the 50m buffer was identified as coastal and floodplain grazing marsh during the desk study is located adjacent to the access to XC462 (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8), but was found to be arable during the extended Phase 1 habitat survey and therefore no longer HPI habitat.</p> <p>Areas of neutral semi-improved grassland with a moderate to high diversity of grasses and wildflowers are present in localised patches throughout land within the Order Limits and 50m buffer, including an open area surrounding a pond (P39) in Overton Borrowpits SINC (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8), within Field nr Healaugh Manor Farm deleted SINC (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8), to the north of XC498 around Cock Beck, and within Moor Lane Stutton verges candidate SINC (see Figure 8.4 (sheet 13), Volume 5, Document 5.4.8).</p> <p>Within the Order Limits a pond is located within an open glade within the western borrow pit of Overton Borrowpits SINC and this is surrounded by relatively species-rich grassland. The following species were recorded at this location: cock's foot, Yorkshire fog, false-oat grass, orchids, sorrel (<i>Rumex</i> sp.), ragwort (<i>Senecio</i> sp.), ox-eye daisy (<i>Leucanthemum vulgare</i>), bramble, creeping thistle, meadowsweet, vetch (<i>Vicia</i> sp.), clover, common birds-foot trefoil (<i>Lotus corniculatus</i>), horsetail (<i>Equisetum</i> sp.), buttercup, sedge, and rush along the edge of the pond.</p> <p>No citation is available for Moor Lane, Stutton Verges candidate SINC that lies within the 50m buffer but</p>	No

²⁸ Environment Agency (2022). Get flood risk information for planning in England (online). Available at: <https://flood-map-for-planning.service.gov.uk/> (Accessed 13 July 2022)

²⁹ Google (2022). Google Earth. (online) (Accessed on 13 July 2022).

outside the Order Limits, however during the extended Phase 1 habitat survey the four verges were recorded as neutral semi-improved grassland due to the diversity of grasses, wildflowers and herbs. Species present include cock's foot, Yorkshire fog, red campion (*Silene dioica*), hogweed, buttercup, vetch, cinquefoil (*Potentilla reptans*), orchids (bee and pyramidal), crosswort, creeping thistle, forget me not (*Myosotis* sp.), white clover (*Trifolium repens*), vetch, daisy (*Bellis perennis*), black medick, ribwort plantain (*Plantago lanceolata*), common birds-foot trefoil, and colts' foot (*Tussilago farfara*). A sign board at TN45 indicates this is an important wildlife corridor and includes a species list with additional species such as early purple orchid, common broomrape (*Orobanche purpurea*), and common spotted orchid.

Within the 50m buffer but outside the Order Limits, the centre of Field nr Healaugh Manor Farm deleted SINC appears to be largely neutral grassland with tall ruderal species interspersed throughout, which encompasses a pond (P143) in the south of the deleted SINC. Species presents include Yorkshire fog and meadow foxtail dominant, with false-oat grass, meadowsweet, sedges, rushes, yellow flag iris (*Iris pseudacorus*), reed grass, marsh thistle, creeping thistle, common nettle, broad-leaved dock, and hogweed also common. Patches of scrub are also located throughout the deleted SINC. Access across the deleted SINC and grassland was very limited due to the height and nature of the vegetation and the grassland has been mapped as semi-improved neutral, although it is acknowledged the citation identifies a large proportion of this grassland as unimproved neutral grassland with areas of marshy grassland surrounding the pond.

An area to the north of Cock Beck/east of XC496 and XC497 (see **Figure 8.4 (sheet 15), Volume 5, Document 5.4.8**) is identified as 'good quality grassland' non-priority habitat on MAGIC; during the extended Phase 1 habitat survey, the area within the Order Limits and 50m buffer was recorded as poor semi-improved grassland, with areas of greater species diversity being located outside the 50m buffer immediately adjacent to Cock Beck.

Areas with a moderately diverse grass assemblage and low abundance of perennial rye-grass (and therefore classified as semi-improved neutral rather than poor semi-improved grassland), but with a reduced diversity of wildflowers are also located within the 50m buffer (but outside the Order Limits) to the

Habitats	Summary	HPI*
Grassland: Marshy	<p>east of XC466/north of XC467 (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8), east of XC472 (see Figure 8.4 (sheet 12), Volume 5, Document 5.4.8), immediately north-west of XC482 (see Figure 8.4 (sheet 13), Volume 5, Document 5.4.8), beneath span XC518-519 (see Figure 8.4 (sheet 17), Volume 5, Document 5.4.8), and beneath span 4YS028-029 (see Figure 8.4 (sheet 18), Volume 5, Document 5.4.8).</p> <p>Marshy grassland is rare within the Order Limits, being located predominately within Overton Borrowpits SINC (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8). This area contains habitat dominated by species such as meadowsweet, with sedges and rushes also present. Open glades were present within the eastern borrow pit at Overton Borrowpits SINC and are identified as species-rich fen meadow/marshy grassland within the citation (TN10). These had limited species diversity being dominated by scrub and meadowsweet at the time of survey and are not considered to meet the criteria for HPI lowland fen.</p> <p>Just outside the 50m buffer, towards the centre of Healaugh Priory Marsh deleted SINC (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8), the habitat resembles marshy grassland that is dominated by meadowsweet with reed canary grass also frequent, along with tufted hair grass, broad-leaved dock and common nettle, and occasional Yorkshire fog, albeit this is outside the 50m buffer. Although reed canary grass can be indicative of swamp habitat³⁰, this area of Healaugh Priory Marsh deleted SINC appeared to be dry, and it is considered that the deleted SINC is unlikely to contain standing water for a large part of the year. Also, given that meadowsweet was recorded to be dominant during the extended Phase 1 habitat survey, it is considered to best represent marshy grassland at the time of survey, although it is acknowledged access around the deleted SINC was limited due to the height of the vegetation. This concurs with the most recent citation from 2005.</p> <p>The desk study identified small parcels of lowland fen HPI within the Order Limits at Overton Borrowpits SINC, and larger areas adjacent to the Order Limits at Healaugh Priory Marsh deleted SINC. The extended Phase 1 habitat survey results indicate that the HPI</p>	Yes (lowland fen)

³⁰ Swamp habitat may have existed previously - an older citation from 1998 mapped some areas of swamp,

Habitats	Summary	HPI*
Hedgerows	<p>habitat has degraded at these locations, though it is classed as present as a precautionary measure at Healaugh Priory Marsh deleted SINCC (outside the Order Limits and 50m buffer) due to limited access.</p> <p>In addition, the desk study indicated the potential presence (low confidence) of lowland fen HPI³¹ within the span between pylons XC496 to XC498. However during the extended Phase 1 habitat survey, the area within the Order Limits and 50m buffer was confirmed to be arable and poor semi-improved grassland.</p> <p>Hedgerows are common throughout land within the Order Limits and 50m buffer, typically bounding fields. There is a mix of species-rich and species-poor hedgerows³², intact and defunct hedgerows, and some hedgerows have trees, all with varying levels of management. Where hedgerows are classed as species-poor they are typically dominated by one or two native woody species, usually hawthorn or blackthorn. Other species are common in species-rich hedgerows including oak, dog rose, field maple, hazel, ash, sycamore, lime, cherry (<i>Prunus avium</i>) and elm also common. Bramble is also present within most hedgerows. Field margins (usually 1-2m wide) are present along the base of the majority of hedgerows, generally consisting of poor semi-improved grassland and tall ruderal species that typically reflect the intensive agricultural within the adjacent fields; species typically include cock's foot, perennial rye-grass, hogweed, cleavers, common nettle, cow parsley, ivy (<i>Hedera helix</i>), white dead nettle (<i>Lamium album</i>), hedge bindweed (<i>Calystegia sepium</i>), and rosebay willowherb (<i>Chamaenerion angustifolium</i>).</p> <p>All native hedgerows over 20m in length are defined as HPI³³; therefore, it is assumed that all hedgerows throughout land within the Order Limits and 50m buffer qualify as HPI as a precautionary measure for the purpose of this report.</p>	Yes (hedgerows)

³¹ Area shown on the MAGIC priority habitat inventory as 'No main habitats but additional habitat exists' and 'low confidence' and coverage '<50%'. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed 14 September 2022).

³² Note that detailed hedgerow surveys of 30m sections were not undertaken. Therefore, a precautionary assumption has been made where hedgerows are recorded as species-rich as to whether they have the requisite number of woody species per 30m section.

³³ Maddock, A (2008). UK Biodiversity Action Plan; Priority Habitat Descriptions: Hedgerows (online). Available at: <https://data.jncc.gov.uk/data/ca179c55-3e9d-4e95-abd9-4edb2347c3b6/UKBAP-BAPHabitats-17-Hedgerows.pdf> (Accessed 17 February 2022).

Habitats	Summary	HPI*
Ponds	<p>See Section 2.3 and Annex 8B.4 for the results of the desk-based important hedgerow assessment..</p> <p>The desk study and extended Phase 1 habitat survey identified:</p> <ul style="list-style-type: none"> • 69 ponds within the Order Limits and 50m buffer; • of these 26 ponds are within the Order Limits; and • 14 additional ponds identified within the Order Limits and 50m buffer during the desk study were not present on the ground (i.e. do not exist) due to infilling or permanent drying. <p>Ponds that contained water vary in shape and size, but there are no particularly large water bodies (for example large drinking water reservoirs) with the vast majority being less than a hectare in extent. As a precautionary measure all these ponds are considered to fulfil the criteria for HPI³⁴.</p>	Yes (ponds)
Watercourses	<p>The desk study and extended Phase 1 habitat survey identified 15 watercourses³⁵ throughout land within the Order Limits and 50m buffer, of which all were accessible during the field survey. Several major watercourses bisect the Order Limits and 50m buffer, principally the River Ouse (north-west of Nether Poppleton) (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8), the River Wharfe (north-west of Tadcaster, a tributary of the Ouse) (see Figure 8.4 (sheet 12), Volume 5, Document 5.4.8) and Cock Beck (north-west of Saxton, itself a tributary of the Wharfe) (see Figure 8.4 (sheet 15), Volume 5, Document 5.4.8). Also of note within the land within the Order Limits and 50m buffer are several other watercourses which ultimately form tributaries of the River Ouse including Hurns Gutter (see Figure 8.4 (sheet 4), Volume 5, Document 5.4.8), and The Foss (see Figure 8.4 (sheet 6), Volume 5, Document 5.4.8). Detailed descriptions of watercourses are given in Annex 8B.3.</p> <p>Part of the River Ouse is designated as a candidate SINC (see Section 2.3).</p> <p>None of the watercourses present throughout land within the Order Limits and 50m buffer were identified</p>	No

³⁴ Ponds are all considered to be HPI as the criteria governing qualifications requires extensive data on the flora and fauna that inhabit them. This information is not available and hence a precautionary view has been taken.

³⁵ For the purpose of this report, watercourses (rivers and streams) are labelled W1 to W15 (see **Annex 8C.4**).

Habitats	Summary	HPI*
Ditches: Running water	<p>as HPI during the desk study or extended Phase 1 habitat survey based on HPI selection criteria³⁶. A number of wet ditches with flowing water and standing water are also present (see Ditches: Running water and Ditches: Standing water).</p>	
Ditches: Standing water	<p>The desk study and extended Phase 1 habitat survey identified:</p> <ul style="list-style-type: none"> • ten ditches with running water throughout land within the Order Limits and 50m buffer; and • of these six ditches are within the Order Limits. <p>These comprise agricultural ditches with a generally smooth flow and the banks were vegetated usually with grass, herbs and scrub. Detailed descriptions of given in Annex 8B.3.</p>	No
Ditches: Dry	<p>The desk study and extended Phase 1 habitat survey identified:</p> <ul style="list-style-type: none"> • twenty-six ditches with standing water throughout land within the Order Limits and 50m buffer; and • of these 17 ditches are within the Order Limits. <p>Ditch banks were generally vegetated with grass, herbs and scrub. Detailed descriptions are given in Annex 8B.3.</p>	No
Ditches: Arable	<p>The desk study and extended Phase 1 habitat survey identified:</p> <ul style="list-style-type: none"> • nineteen ditches that were dry at the time of survey throughout land within the Order Limits and 50m buffer; and • of these ten ditches are within the Order Limits. <p>The majority of dry ditches present have earth banks and are border features for arable fields, roads or located within woodlands. Parts of some ditches were choked with terrestrial species such as bramble, common nettle, and terrestrial grasses indicating that they are permanently dry.</p>	No
Arable	<p>The dominant habitat type throughout the Order Limits and 50m buffer is arable land. It is in various states of management and supports a variety of crops including corn and potato. Many arable fields in the Order Limits and 50m buffer had been recently planted at the time of survey. Fields are generally large creating</p>	Yes (arable field margins)

³⁶ Maddock, A (2008). UK Biodiversity Action Plan; Priority Habitat Descriptions: Rivers. (online) Available at: <https://data.jncc.gov.uk/data/01d6ab5b-6805-4c4c-8d84-16bfebe95d31/UKBAP-BAPHabitats-45-Rivers-2011.pdf> (Accessed 01 September 2022).

Habitats	Summary	HPI*
	<p>open landscapes that are interspersed with ditches/hedgerows/scattered scrub, forming boundary features.</p> <p>Field margins are frequently no more than 1m wide, although occasionally they extend up to approximately 50m. The species recorded within arable field margins predominantly consists of poor semi-improved grassland and tall ruderal species, as described in association with hedgerows. This type of habitat is widespread within the local area.</p> <p>Most arable margins throughout the Order Limits and 50m buffer do not qualify as HPI, based on limited width, species composition and limitations due to cross-compliance requirements³⁷. However, there are several notable exceptions where wide margins with a range of species (for example cock's foot, crested dog's-tail, timothy grass, broad-leaved dock, clover, common birds-foot trefoil, spear thistle, yarrow, plantain <i>sp.</i>, and poppy) are present, namely fields in which the following infrastructure is located/proposed:</p> <ul style="list-style-type: none"> • Proposed pylon YN005 (see Figure 8.4 (sheet 4), Volume 5, Document 5.4.8) - up to 40m wide and up to 85m in length within the Order Limits and 50m buffer; • Proposed pylon YN006 (see Figure 8.4 (sheet 4), Volume 5, Document 5.4.8) - up to 15m wide and up to 455m in length within the Order Limits and 50m buffer (also used for farm access). • SP007 (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8) - up to 50m wide and up to 510m in length within the Order Limits and 50m buffer; • XC465 (see Figure 8.4 (sheet 11), Volume 5, Document 5.4.8) - up to 40m wide and up to 560m in length within the Order Limits and 50m buffer; and • XC497 (see Figure 8.4 (sheet 15), Volume 5, Document 5.4.8) - up to 40m wide and up to 320m in length within the Order Limits and 50m buffer. 	

³⁷ Arable field margins established as cross compliance requirements to protect hedgerows are excluded from HPI classification as stated in: Maddock, A (2008) UK Biodiversity Action Plan; Priority Habitat Descriptions: Arable Field Margins (online). Available at: <https://data.incc.gov.uk/data/529a621b-e1a6-4283-ba82-408744d079b4/UKBAP-BAPHabitats-02-ArableFieldMargins.pdf> (Accessed 01 September 2022).

Habitats	Summary	HPI*
Dense and scattered scrub	<p>Based on their dimensions and species present, as a precaution it is assumed these margins are managed for wildlife and are thus considered to qualify as HPI.</p> <p>Dense and scattered scrub is frequent around the perimeter of agricultural/grassland field boundaries. There are also relatively extensive areas of dense scrub interspersed throughout the Order Limits and 50m buffer, particularly in association with disturbed habitats such as existing and former quarries. Scrub species include bramble, hawthorn, blackthorn and elder. <i>Buddleia</i> (<i>Buddleia davidii</i>) is common at Jackdaw Quarry (TN46) (see Figure 8.4 (sheet 13), Volume 5, Document 5.4.8).</p> <p>Within the Order Limits, grey willow scrub is dominant in the damp base of the western pit of Overton Borrowpits SINC (see Figure 8.4 (sheet 5), Volume 5, Document 5.4.8), with scrubby woodland including hawthorn and blackthorn present along the drier banks. The eastern borrow pit is similar to the western borrow pit, but the base of the pit is dry.</p> <p>Within the Order Limits, Disused Quarry, Newthorpe deleted SINC (see Figure 8.4 (sheet 17), Volume 5, Document 5.4.8) has hawthorn, elder, bramble and dogrose scrub present, particularly along the quarry cliffs.</p> <p>The desk study identified a parcel of open mosaic habitat within the 50m buffer on previously developed land (draft) at Jackdaw Quarry (TN46) where scrub is present and may form a component, but this is outside the Order Limits.</p>	No
Ephemeral/short perennial	<p>Areas of ephemeral/short perennial vegetation are uncommon throughout the Order Limits and 50m buffer but do occupy patches of exposed rock and ground within the Order Limits and 50m buffer at Jackdaw Quarry (TN46) (see Figure 8.4 (sheet 13), Volume 5, Document 5.4.8) and also in localised patches along railways. Species in these areas include ribwort plantain, trifolium spp and common birds-foot trefoil. Ephemeral/short perennial vegetation was initially present immediately south of XC522/XC522T (TN58) within the Order Limits (see Figure 8.4 (sheet 18), Volume 5, Document 5.4.8), however since the initial survey travellers have moved in and recent Google earth imagery indicates this area now resembles hardstanding³⁸.</p>	No

³⁸ The extended Phase 1 habitat survey at this location was carried out w/c 09 June 2021. Latest aerial imagery from Google Earth dated June 2022 (Accessed 21 September 2022).

Habitats	Summary	HPI*
	The desk study identified a parcel of open mosaic habitat on previously developed land (draft) within the 50m buffer at Jackdaw Quarry (TN46) where ephemeral/short perennial vegetation may form a component, but this is outside the Order Limits.	
Tall ruderal	<p>Tall ruderal vegetation is present throughout land within the Order Limits and 50m buffer, particularly located along the boundaries of fields/base of hedgerows and within arable margins. Species typically include common nettle, rosebay willowherb, creeping thistle, spear thistle, hogweed, and cow parsley.</p> <p>The desk study identified a parcel of open mosaic habitat on previously developed land (draft) within the 50m buffer at Jackdaw Quarry (TN46) (see Figure 8.4 (sheet 13), Volume 5, Document 5.4.8) where tall ruderal vegetation may form a component, but this is outside the Order Limits.</p>	No
Introduced shrub	Small areas of introduced shrub are present throughout the Order Limits and 50m buffer, largely associated with residential areas with shrubs such as leylandii (<i>Cupressus x leylandii</i>) and cherry laurel (<i>Prunus laurocerasus</i>) planted as hedgerows.	No
Scattered trees	Scattered broadleaved trees are present commonly associated with field boundaries. Species include poplars, oak, ash, sycamore and willows.	No
Fences	Fences are present throughout the Order Limits and 50m buffer varying from stock fences to wooden residential fences – note this habitat has not generally been mapped.	No
Bare ground	Areas of bare ground which are largely devoid of any significant vegetation are scattered throughout the Order Limits and 50m buffer.	No
Hardstanding	Hardstanding is mostly associated with roads, paving and residential/farm/commercial yards and is scattered throughout the Order Limits and 50m buffer.	No
Buildings	There are a range of residential, farm and commercial buildings scattered throughout the Order Limits and 50m buffer. National Grid Electricity Transmission plc (“National Grid”) Substations such as Osbaldwick and Monk Fryston are also located within the Order Limits.	No

* Habitats meeting the UKBAP ‘Priority Habitat’ criteria (HPIs).³³ The UKBAP criteria were used to draw up the statutory lists of HPIs as required under Section 41 of the NERC Act 2006 (see **Box 1**).

Protected Species

3.3.3 The following sections summarise the evidence of protected species found during the field survey, and the suitability of habitats throughout the Order Limits and 50m buffer for those protected species identified by the desk-study or which are most commonly encountered in this part of the UK. This identifies those protected species most likely to be exposed to environmental changes associated with the Project but does not exclude the possibility of other protected species being subsequently encountered during further targeted surveys.

Bats

Roosting

3.3.4 The extended Phase 1 habitat survey did not include detailed roost inspections, although some buildings, individual trees and blocks of woodland throughout the Order Limits and 50m buffer were noted for their potential to support roosting bats, and any roosting opportunities (e.g. splits, rot holes, etc.) were identified. Gaps and cracks within the open rock cliffs at Jackdaw Quarry (TN46) provide further potential roosting habitat, although the quarry is active and disturbance from operational activities reduces the likelihood of its use by roosting bats. In addition, bat boxes placed on trees located at TN29-31 (hibernation box) also provide roosting opportunities. However, in a local context, land within the Order Limits does not provide extensive or unique roosting resources, as the principal types of roosting opportunities present are common and widespread in the locality.

Commuting/foraging

3.3.5 Large areas of open arable land are of limited suitability and at times unsuitable for most species of bats as they provide little in the way of foraging habitat, or linear features/cover for commuting. However, hedgerows along field boundaries, watercourses, and parcels of grassland, woodland and scrub throughout the Order Limits and 50m buffer are likely to be used by foraging and commuting bats although these are not unique habitats locally. Areas of habitat which are most suitable for bats, occur in places where a range of habitat types coincide to provide a variety of ecotones³⁹ for commuting and foraging, suitable for a variety of bat species. For example, habitats around Healaugh Priory Marsh deleted SINC and Field nr Healaugh Manor Farm deleted SINC, and along watercourses such as the River Ouse and The Foss, which include a mix of habitats such as scrub, grassland, hedgerows, treelines, woodland and watercourses/ditches/ponds. Habitat in these locations is considered to have high suitability for commuting and foraging bats, though the majority of habitat within the Order Limits and 50m buffer is considered to have moderate suitability⁴⁰.

³⁹ A transition area where one type of habitat meets another.

⁴⁰ The Bat Conservation Trust provide guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features in the landscape, and potential roost features in buildings, structures and trees. The guidance outlines habitat features associated with negligible, low, moderate and high suitability for commuting, foraging and roosting by bats; based on the quality, extent and connectivity of suitable habitats and potential roost features which are present.

GCN

- 3.3.6 Three hundred and thirty-one water bodies (223 ponds and 107 ditches) were identified within 250m of the Order Limits during the desk study; of these 28 ponds and eight ditches were not present on the ground/did not exist during the extended Phase 1 habitat survey. A further 17 ditches held flowing water and thus were assumed unsuitable to support GCN.
- 3.3.7 Of the remaining 195 ponds and 82 ditches within 250m, 49 ponds had HSI scores of poor or were recorded as commercial stocked fish ponds; and 11 ditches had HSI scores of poor. Seven ponds and 33 ditches were recorded to be dry at the time of survey. These water bodies are thus considered unlikely to support great crested newts.
- 3.3.8 Prior to confirmation that the DLL approach would be taken with respect to great crested newts, two ponds within the footprint of the proposed Overton Substation were subject to eDNA surveys which were found to be negative.
- 3.3.9 Therefore, 137 ponds and 38 ditches within 250m of the Order Limits are considered to have potential to support great crested newts based on the results of the desk-based assessment and field surveys.
- 3.3.10 Of these, 20 ponds and 13 ditches with potential to support great crested newts are located within the Order limits.
- 3.3.11 Habitats such as arable field margins, grassland, hedgerow, dense scrub, woodland and a network of ditches provide suitable terrestrial habitat for foraging, refuging, commuting and hibernating. Often, there are no major barriers to prevent great crested newt dispersal between suitable water bodies and surrounding terrestrial habitats. However, the most extensive habitat within the Order Limits is arable and this is either unsuitable or sub-optimal for great crested newts depending on the prevalent form of agriculture.

Otter

- 3.3.12 Otter footprints were recorded at TN24 and TN25 along The Foss, potential otter prints along Hurns Gutter, and an otter spraint was observed at TN17 along River Ouse; The Foss and Hurns Gutter are tributaries of the River Ouse. A local resident also described seeing otter near a farm ~100-200m north of the River Ouse, and mentioned having also observed mink⁴¹.
- 3.3.13 The dominant habitat throughout the Order Limits and 50m buffer (arable) is unsuitable for otter, however, the River Ouse (W4), the River Wharfe (W9) and Cock Beck (W12) provide optimal habitat for foraging, commuting, holt creation and resting place, along with smaller tributaries with plentiful bankside cover such as The Foss and The Foss Catchment (tributary of Wharfe) (W8). Ditches throughout land within the Order Limits and 50m buffer may provide commuting corridors within the local area, however where dry or hold little or no water their suitability decreases. Wet ditches offer only limited suitability for commuting purposes. Water quality within these ditches is variable and they hold often little or no water and so are predominantly negligible or sub-optimal for foraging. A detailed description of watercourses and ditches, including their suitability for otter is provided within **Annex 8B.3**. Stocked fisheries throughout land within the Order Limits and 50m buffer may also offer suitable foraging habitat for otter, depending on distance and connectivity to watercourses and any deterrents (such as fencing)

⁴¹ Personal communication with WSP Principal ecologist Tim Kell on 05 July 2021.

which may be in place with the landowner at ponds P97-97w stating that they have otter (these ponds are located adjacent The Foss).

Water vole

- 3.3.14 There are 83 watercourses and ditches throughout land within the Order Limits and 50m buffer (based on the OS 1:10k mapping; see **Section 2.2** and **Figure 8.4, Volume 5, Document 5.4.8**), of which seven ditches (D9, D57, D84, D105, D106, D107 and D108) were not accessible during the extended Phase 1 habitat survey.
- 3.3.15 No water voles or conclusive evidence such as latrines or distinctive feeding remains were observed during the survey to confirm the species being present, although potential feeding remains were recorded along D65 in close proximity to XC458. A landowner noted that water voles were historically present on W1, but they have not been seen since ditch works occurred several years ago⁴².
- 3.3.16 Of the 76 watercourses and ditches assessed, six were not present on the ground. A summary of the water vole habitat assessment for the remaining accessible watercourses/ditches is detailed in **Annex 8B.3** and summarised below:
- Six ditches were not present on the ground: D2, D54, D74, D88, D98 and D102.
 - Twenty-two watercourses/ditches were considered optimal to support water vole by the WVHS method.
 - D65 and D89 are assessed to be optimal by the WVHS, but were dry at the time of survey. Potential vole feeding evidence was recorded along D65 during the extended Phase 1 habitat survey. D89 is connected to W11 which contained water and was assessed to be optimal for water vole. Thus, while D65 and D89 are considered unsuitable to support water vole at this time of year due to being dry, they may have potential to support water vole at other times.
 - Twenty-seven watercourses/ditches were considered sub-optimal to support water vole by the WVHS method.
 - D59, D64, D67, D70, D76, and D97 are assessed to be sub-optimal by the WVHS, but were dry at the time of survey.
 - D59 is a continuation of D56 which contained water and was assessed to be optimal for water vole. D64 is connected to ponds and other ditches and dikes in the wider landscape. D76 had duckweed on the ground with damp areas also present indicating the ditch holds water at certain times of the year. D97 is connected to a pond and other ditches in the landscape. Therefore, whilst these ditches are considered unsuitable to support water vole at the time of survey, they may have potential to support water vole at other times.
 - Whilst being dry, D67 was very shaded by woodland and did not have suitable banks for water vole burrows. D70 was choked by terrestrial grasses and herbs indicating it is dry for the majority of the year, was quite shaded from scrub on the northern side and is fairly isolated within the landscape. These ditches are considered to be unsuitable to support water vole.

⁴² Personal communication with Tim Kell on 17 June 2022.

- Twenty-one watercourses/ditches were considered unsuitable to support water vole by the WVHS method.
- Water vole are a mobile species that respond to habitat changes over the course of a breeding season and may use different ditches at different times of the year⁴³. This is likely to be particularly applicable to ditches that have fluctuating water levels over the year and may also be dependent on chance extinction events and local population fluctuations. Thus, some of these ditches, potentially including those that were dry at the time of the survey may support water voles at certain times of the year, or there is possibility of a ditch becoming colonised by water voles at a future date.

Reptiles

- 3.3.17 No reptiles or evidence of their presence were recorded throughout land within the Order Limits and 50m buffer at the time of survey. The majority of the land within the Order Limits and 50m buffer comprises large arable fields which are largely unsuitable for reptiles. However, arable field margins, hedgerows, dense scrub and a network of ditches provide suitable habitat for reptiles with opportunities for basking, foraging, refuging and hibernating though features such as these are at times sparse and isolated within the open arable landscape.
- 3.3.18 Habitat outside the Order Limits but within the 50m buffer that is likely to be optimal for reptiles is the mosaic of habitats on previously disturbed ground at Jackdaw Quarry. (TN46).
- 3.3.19 Overall, reptiles may be present in low numbers in the limited areas of suitable habitat present within the Order Limits.

Badgers

- 3.3.20 Suitable habitats for sett creation are present throughout land within the Order Limits and 50m buffer including the banks of ditches, hedgerows, dense scrub and woodland. The habitats within the Order Limits and 50m buffer provide extensive opportunities for foraging including large areas of arable land (and margins), grasslands, woodland, and scrub, with a series of ditches and hedgerows providing connective habitat.
- 3.3.21 Targeted badger surveys have been undertaken at suitable habitat throughout land within the Order Limits and 50m buffer, the detailed methodology and results of which are presented in a separate confidential badger report in **CONFIDENTIAL Badger Survey Report, Volume 5, Document 5.3.8C**. Occasional evidence of badger was recorded throughout the land within the Order Limits and 50m buffer including setts, latrines, footprints and hairs.

Other conservation-notable species

- 3.3.22 The suitability of land within the Order Limits for those conservation-notable species recorded by the desk study (see **Table 2.2**), or which are most commonly encountered in the habitats present within the Order Limits, was assessed. This took into account the relative importance of the Order Limits habitats in comparison to the local and regional habitats. In summary, with the exception of potential riparian tansy plants along the River Ouse (none were observed during the extended Phase 1 habitat survey), habitats

⁴³ Dean, R. Strachan, D. Gow, and R. Andrews (2016). The Water Vole Mitigation Handbook. The Mammal Society; London.

throughout the Order Limits and 50m buffer are predominantly sub-optimal or unsuitable to support important invertebrate assemblages, being dominated by arable land. Short stretches of other watercourses and relatively isolated areas of neutral semi-improved grassland with a higher diversity of grasses and wildflowers, ephemeral/short perennial/mosaic and semi-natural woodland offer habitat suitable for invertebrates but in view of the limited connectivity and small size of habitat patches, important assemblages of SPI and other conservation-notable invertebrates are unlikely to be present.

- 3.3.23 Ten beetles were recorded on broadleaved dock plants within arable margins approximately 60m south-west of the River Ouse (TN20-23), and although similar in appearance to tansy beetle (distinctive bright green colouration), given the distance from the river and the fact that no tansy was growing nearby it is assumed these were green dock beetle (*Gastrophysa viridula*).
- 3.3.24 Watercourses throughout land within the Order Limits and 50m buffer could support SPI, protected and notable fish species including those identified during the desk study:
- W4 – River Ouse has records of sea lamprey, bullhead and eel; In addition, the River Ouse candidate SINC citation also includes Atlantic salmon and river lamprey. The River Ouse bisects the Order Limits span XC420-421 and XCP008-009.
 - W9 – River Wharfe has records of grayling, barbel and brown/sea trout; the River Wharfe bisects the Order Limits span XC471-472.
 - W12 – Cock Beck has records of eel and bullhead; the Cock Beck bisects the Order Limits span XC497-498 and goes under a road that will be used to access to pylons XC491-497.
- 3.3.25 A summary of the habitat suitability assessment for fish of 76 watercourses/ditches is detailed in **Annex 8B.3**.
- 3.3.26 Evidence of non-protected conservation-notable species recorded during the survey are includes sightings of 39 brown hare, mostly associated with arable fields. Lapwings (*Vanellus vanellus*), skylarks (*Alauda arvensis*) and a dead common toad were also recorded during the survey.

Breeding birds (all species)

- 3.3.27 Habitats recorded throughout land within the Order Limits and 50m buffer that are suitable for a range of nesting birds include scrub, hedgerow, vegetation on the banks of ditches and watercourses, grassland (ground nesting species) and woodland.
- 3.3.28 Sand martins (*Riparia riparia*) were observed using holes in the banks of the River Ouse approximately 170m south-west of XCP009.
- 3.3.29 Buildings may also provide suitable nesting opportunities for a range of birds, with farm buildings such as barns being potentially suitable for barn owl.
- 3.3.30 Intentionally Blank - Confidential Information removed.

Invasive Non-native Species

- 3.3.31 The following invasive non-native species were recorded throughout land within the Order Limits and 50m buffer during the extended Phase 1 habitat survey:

- Japanese knotweed: stands located within Overton Borrowpits SINC along the railway (TN09 and TN12) and along Hurns Gutter at TN07;
- Himalayan balsam: extensive stands of this species were recorded within woodlands and along the banks of ditches and ponds (TN02-TN05, TN07, TN08, TN10, TN11, TN13-TN15, TN18, TN19, TN26, TN27, TN36, TN38-TN43, TN47, and TN50-TN54);
- Giant hogweed: present along Hurns Gutter within woodland (TN04) and along the banks of the River Ouse (but outwith the 50m buffer);
- Variegated archangel (*Lamium galeobdolon*) (potential): within a woodland garden (TN48);
- Snowberry (potential): stands are present within the understory of woodlands at TN44, and along a hardstanding track (TN57);
- Japanese Rose: individual plants within hedgerows/gardens at TN04, TN37, and TN49; and
- Cotoneaster⁴⁴: individual plants within hedgerows/gardens at TN16.

3.3.32 It is possible that these species will be present in, or colonise, other areas within the Order Limits. No other non-native invasive species were identified during the extended Phase 1 habitat survey, although it should be noted that many invasive species will not be recorded during preliminary surveys due to the inherent constraints (see paragraph 3.2.5) on these surveys (e.g. timing, access).

⁴⁴ Several Cotoneaster species are listed under Schedule 9 to the Wildlife and Countryside Act 1981 (as amended). Cotoneaster is a broad group of wild and horticultural varieties, and it is very difficult to reliably identify these to species level, and typically requires identification by a dedicated Cotoneaster specialist. In the absence of reliable identification, the species present within the Site are treated as potentially being a Schedule 9 species as a precaution.

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4. Additional Surveys

- 4.1.1 Based on results of the desk study and extended Phase 1 habitat survey, and the nature/impacts of the Project, the following additional surveys have been carried out to establish the status (e.g. presence/likely absence, or population size class) of key ecological features of relevance to the Project for which the survey methodology and results can be found in their respective reports:
- Badger – **CONFIDENTIAL Badger Survey Report, ES Appendix 5.3.8C, Volume 5, Document 5.3.8C;**
 - Otter and water vole – **Otter and Water Vole Survey Report, ES Appendix 5.3.8D, Volume 5, Document 5.3.8D;**
 - Birds – **2021 Wintering Birds Survey Report, ES Appendix 5.3.8E, Volume 5, Document 5.3.8E;**
 - Birds – **2021-2022 Wintering Birds Survey Report, ES Appendix 5.3.8F, Volume 5, Document 5.3.8F;**
 - Birds – **Confidential Schedule 1 Breeding Bird Survey Report, ES Appendix 5.3.8G, Volume 5, Document 5.3.8G;**
 - Bats – **Bat Survey Report, ES Appendix 5.3.8H, Volume 5, Document 5.3.8H;** and
 - Breeding birds – **Confidential Schedule Breeding Bird Survey Information (extracted from Document 5.3.8B), ES Appendix 5.3.8J, Volume 5, Document 5.3.8J.**
- 4.1.2 Detailed hedgerow assessments to confirm the presence of ‘important’ hedgerows as defined under the Hedgerow Regulations⁴⁵ are ongoing with targeted field surveys focused on those hedgerows to be removed (as listed in **Arboriculture Impact Assessment, Volume 5, Document 5.3.3I**) which have been identified as ‘potentially important’ during the desk-based assessment (see **Section 2.3** and **Annex 8B.4**). A report providing the results of the detailed important hedgerow assessment will be submitted as an addendum to the ES.

⁴⁵ UK Government (1997). The Hedgerows Regulations 1997. (Online) Available at: <https://www.legislation.gov.uk/ukxi/1997/1160/contents/made> (Accessed August 2021).

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Annex 8B.1 – Scientific Names

Common name	Scientific name
Mammal	
American mink	<i>Neovison vison</i>
Badger	<i>Meles meles</i>
Brandt's bat	<i>Myotis brandtii</i>
Brown hare	<i>Lepus europaeus</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Grey squirrel	<i>Sciurus carolinensis</i>
Harvest mouse	<i>Micromys minutus</i>
Hedgehog	<i>Erinaceus europaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>
Natterer's bat	<i>Myotis nattereri</i>
Noctule	<i>Nyctalus noctula</i>
Otter	<i>Lutra lutra</i>
Serotine	<i>Eptesicus serotinus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Water vole	<i>Arvicola amphibius</i>
Whiskered bat	<i>Myotis mystacinus</i>
Amphibian	
Common toad	<i>Bufo bufo</i>
Grass snake	<i>Natrix natrix</i>
Great crested newt	<i>Triturus cristatus</i>
Invertebrates	
Caddis fly	<i>Ceraclea senilis</i>
Cinnabar	<i>Tyria jacobaeae</i>
Dark-barred twin-spot carpet	<i>Xanthorhoe ferrugata</i>
Depressed river mussel	<i>Pseudanodonta complanata</i>

Common name	Scientific name
Dot moth	<i>Melanchra persicariae</i>
Green-brindled crescent	<i>Allophyes oxyacanthae</i>
Green dock beetle	<i>Gastrophysa viridula</i>
Leafhopper	<i>Cicadula ornata</i>
Oak hook-tip	<i>Watsonalla binaria</i>
Rosy rustic	<i>Hydraecia micacea</i>
September thorn	<i>Ennomos erosaria</i>
Small phoenix	<i>Ecliptopera silaceata</i>
Tansy beetle	<i>Chrysolina graminis</i>
White-clawed crayfish	<i>Austropotamobius pallipes</i>
Fish	
Atlantic Salmon	<i>Salmo salar</i>
Barbel	<i>Barbus barbus</i>
Brown trout	<i>Salmo trutta</i>
Bullhead	<i>Cottus gobio</i>
European Eel	<i>Anguilla anguilla</i>
Grayling	<i>Thymallus thymallus</i>
Sea lamprey	<i>Petromyzon marinus</i>
Plants	
Alder	<i>Alnus glutinosa</i>
American willowherb	<i>Epilobium ciliatum</i>
Ash	<i>Fraxinus excelsior</i>
Aspen	<i>Populus tremula</i>
Autumn gentian	<i>Gentianella amarella</i>
Autumn Lady's-tresses	<i>Spiranthes spiralis</i>
Barren brome	<i>Bromus sterilis</i>
Bee orchid	<i>Ophrys apifera</i>
Beech	<i>Fagus sylvatica</i>
Bent	<i>Agrostis sp</i>

Common name	Scientific name
Black alder	<i>Alnus glutinosa</i>
Black medic	<i>Medicago lupulina</i>
Blackthorn	<i>Prunus spinosa</i>
Bladder-sedge	<i>Carex intumescense</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Blunt-flowered rush	<i>Juncus subnodulosus</i>
Bottle sedge	<i>Carex rostrata</i>
Bramble	<i>Rubus fruticosus agg</i>
Branched bur-reed	<i>Sparganium erectum</i>
Broad-buckler fern	<i>Dryopteris dilatata</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Buddleia	<i>Buddleia davidii</i>
Bulrush	<i>Typha latifolia</i>
Creeping buttercup	<i>Ranunculus repens</i>
Canadian goldenrod	<i>Solidago canadensis</i>
Canadian waterweed	<i>Elodea canadensis</i>
Carline thistle	<i>Carlina vulgaris</i>
Cherry	<i>Prunus avium</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cinquefoil	<i>Potentilla reptans</i>
Cleavers	<i>Galium aparine</i>
Clover	<i>Trifolium sp</i>
Cock's foot	<i>Dactylis glomerata</i>
Colt's foot	<i>Tussilago farfara</i>
Common birds-foot trefoil	<i>Lotus corniculatus</i>
Common broomrape	<i>Orobanche purpurea</i>
Common club-rush	<i>Scirpus lacustris</i>
Common cudweed	<i>Filago vulgaris</i>
Common meadow-rue	<i>Thalictrum flavum</i>
Common nettle	<i>Urtica dioica</i>

Common name	Scientific name
Common reed	<i>Phragmites australis</i>
Common rock-rose	<i>Helianthemum nummularium</i>
Common spotted orchid	<i>Dactylorhiza fuchsia</i>
Common valerian	<i>Valeriana officinalus</i>
Corn mint	<i>Mentha arvensis</i>
Cotoneaster	<i>Cotoneaster sp</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Cowslip	<i>Primula veris</i>
Crack willow	<i>Salix fragilis</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Crested dogs-tail	<i>Cynosurus cristatus</i>
Crosswort	<i>Cruciata laevipes</i>
Curly waterweed	<i>Lagarosiphon major</i>
Daisy	<i>Bellis perennis</i>
Deadly nightshade	<i>Atropa belladonna</i>
Devil's-bit scabious	<i>Succisa pratensis</i>
Dog rose	<i>Rosa canina</i>
Dog's mercury	<i>Mercurialis perennis</i>
Dyer's greenweed	<i>Genista tinctoria</i>
Early purple orchid	<i>Orchis mascula</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus minor</i>
Enchanter's nightshade	<i>Circaea lutetiana</i>
Eyebright	<i>Euphrasia officinalis</i>
False brome	<i>Brachypodium sylvaticum</i>
False oat-grass	<i>Arrhenatherum elatius</i>
False-acacia	<i>Robinia pseudoacacia</i>
Field garlic	<i>Allium vineale</i>

Common name	Scientific name
Field maple	<i>Acer campestre</i>
Field scabious	<i>Knautia arvensis</i>
Flea sedge	<i>Carex pulicaris</i>
Fleabane	<i>Pulicaria dysenterica</i>
Forget-me-not	<i>Myosotis</i> sp
Fragrant orchid	<i>Gymnadenia conopsea</i>
Garlic mustard	<i>Alliaria petiolata</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Great burnet	<i>Sanguisorba officinalis</i>
Grey willow	<i>Salix cinerea</i>
Harebell	<i>Campanula rotundifolia</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Heath speedwell	<i>Veronica officinalis</i>
Hedge bindweed	<i>Calystegia sepium</i>
Hemlock	<i>Conium maculatum</i>
Hemp-agrimony	<i>Eupatorium cannabinum</i>
Herb-Paris	<i>Paris quadrifolia</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Hoary plantain	<i>Plantago media</i>
Hoary willowherb	<i>Epilobium parviflorum</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Horsetail	<i>Equisetum</i> sp
Ivy	<i>Hedera helix</i>
Japanese knotweed	<i>Fallopia japonica</i>
Japanese rose	<i>Rosa rugosa</i>
Lady's-mantle	<i>Alchemilla mollis</i>
Lesser pond sedge	<i>Carex acutiformis</i>

Common name	Scientific name
Lesser water parsnip	<i>Berula erecta</i>
Leylandii	<i>Cupressus x leylandii</i>
Lime	<i>Tilia x europaea</i>
Lords-and-ladies	<i>Arum maculatum</i>
Marsh bedstraw	<i>Galium palustre</i>
Marsh cinquefoil	<i>Potentilla palustris</i>
Marsh foxtail	<i>Alopecurus geniculatus</i>
Marsh marigold	<i>Caltha palustris</i>
Marsh thistle	<i>Cirsium palustre</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Meadow thistle	<i>Cirsium dissectum</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Mountain melick	<i>Melica nutans</i>
New Zealand pigmyweed	<i>Crassula helmsii</i>
Nuttall's waterweed	<i>Elodea nuttallii</i>
Oak	<i>Quercus</i> sp
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Pasqueflower	<i>Pulsatilla vulgaris</i>
Perennial rye grass	<i>Lolium perenne</i>
Ploughman's-spikenard	<i>Inula conyzae</i>
Poplar	<i>Populus</i> sp
Primrose	<i>Primula vulgaris</i>
Purple moor-grass	<i>Molinia caerulea</i>
Pyramidal orchid	<i>Anacamptis pyramidalis</i>
Quaking-grass	<i>Briza media</i>
Ragged-robin	<i>Lychnis flos-cuculi</i>
Ragwort	<i>Senecio jacobaea</i>
Ramsons	<i>Allium ursinum</i>
Rare spring-sedge	<i>Carex ericetorum</i>
Red campion	<i>Silene dioica</i>

Common name	Scientific name
Red fescue	<i>Festuca rubra</i>
Reed sweet grass	<i>Glyceria maxima</i>
Rhododendron	<i>Rhododendron</i> sp
Ribwort plantain	<i>Plantago lanceolata</i>
Rosebay willowherb	<i>Chamaenerion angustifolium</i>
Round-headed leek	<i>Allium sphaerocephalon</i>
Sainfoin	<i>Onobrychis viciifolia</i>
Sanicle	<i>Sanicula europaea</i>
Scots pine	<i>Pinus sylvestris</i>
Sharp flowered rush	<i>Juncus acutiflorus</i>
Silver birch	<i>Betula pendula</i>
Silverweed	<i>Potentilla anserina</i>
Small scabious	<i>Scabiosa columbaria</i>
Snowberry	<i>Symphoricarpos albus</i>
Snowdrop	<i>Galanthus</i> sp
Soft brome	<i>Bromus hordeaceus</i>
Soft rush	<i>Juncus effusus</i>
Sorrel	<i>Rumex</i> sp
Spear thistle	<i>Cirsium vulgare</i>
Speedwell	<i>Veronica</i> sp
Strawberry clover	<i>Trifolium fragiferum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Thistle broomrape	<i>Orobanche reticulata</i>
Tor grass	<i>Brachypodium pinnatum</i>
Tormentil	<i>Potentilla erecta</i>
Tubular water-dropwort	<i>Oenanthe fistulosa</i>
Tufted hairgrass	<i>Deschampsia cespitosa</i>
Turkey oak	<i>Quercus cerris</i>
Upright brome	<i>Bromus erectus</i>
Variiegated archangel	<i>Lamium galeobdolon</i>

Common name	Scientific name
Vetch	<i>Vicia</i> sp
Water chickweed	<i>Stellaria aquatica</i>
Wavy hair-grass	<i>Deschampsia flexuosa</i>
Wild angelica	<i>Angelica sylvestris</i>
White clover	<i>Trifolium repens</i>
White dead nettle	<i>Lamium album</i>
Wild pansy	<i>Viola tricolor</i>
Wild strawberry	<i>Fragaria vesca</i>
Willow	<i>Salix</i> sp
Willowherb	<i>Epilobium</i> sp
wood anemone	<i>Anemonoides nemorosa</i>
Wood avens	<i>Geum urbanum</i>
Wood-sorrel	<i>Oxalis acetosella</i>
Yellow flag iris	<i>Iris pseudacorus</i>
Yellow pimpernel	<i>Lysimachia nemorum</i>
Yorkshire fog	<i>Holcus lanatus</i>
Birds	
Barn owl	<i>Tyto alba</i>
Bewicks swan	<i>Cygnus columbianus bewickii</i>
Gadwall	<i>Anas strepera</i>
Garganey	<i>Anas querquedula</i>
Golden plover	<i>Pluvialis apricaria</i>
Grey wagtail	<i>Motacilla cinerea</i>
Kingfisher	<i>Alcedo atthis</i>
Lapwing	<i>Vanellus vanellus</i>
Mallard	<i>Anas platyrhynchos</i>
Peregrine	<i>Falco peregrinus</i>
Pintail	<i>Anas acuta</i>
Pochard	<i>Aythya ferina</i>
Red kite	<i>Tyto alba</i>

Common name	Scientific name
Ruff	<i>Philomachus pugnax</i>
Sand martin	<i>Riparia riparia</i>
Shoveler	<i>Anas clypeata</i>
Skylark	<i>Alauda arvensis</i>
Swallow	<i>Hirundo rustica</i>
Teal	<i>Anas crecca</i>
Tufted duck	<i>Aythya fuligula</i>
Whimbrel	<i>Numenius phaeopus</i>
Whooper swan	<i>Cygnus cygnus</i>
Wigeon	<i>Anas penelope</i>
Yellowhammer	<i>Emberiza citronella</i>

Annex 8B.2 – Target Notes

TN	Grid reference	Description
TN01	SE 57740 59966	Barn owl foraging over grassland/plantation woodland.
TN02	SE 56270 57355	Himalayan balsam within hedgerow.
TN03	SE 56372 60232	Himalayan balsam interspersed throughout woodland.
TN04	SE 57723 59829	Individual Japanese rose within hedgerow. Area of multiple stands of giant hogweed and Himalayan balsam along small ditch (D8) within woodland.
TN05	SE 56140 57217	Himalayan balsam along Hurns Gutter (W3) bounding an arable field.
		Intentionally Blank - Confidential Information removed.
TN07	SE 55872 56639	Himalayan balsam and Japanese knotweed on banks of Hurns Gutter (W3).
TN08	SE 56028 56399	Himalayan balsam on banks of Hurns Gutter (W3).
TN09	SE 56114 56155	Japanese knotweed interspersed for about 20m along railway embankment.
TN10	SE 56269 55964	Scattered Himalayan balsam within scrub and trees. Open glades were present within the eastern borrow pit at Overton Borrowpits SINC and are identified as species-rich fen meadow/marshy grassland within the citation. These had limited species diversity being dominated by scrub and meadowsweet at the time of survey.
TN11	SE 56208 55925	Scattered Himalayan balsam within scrub and trees.
TN12	SE 56220 55879	Stand of Japanese knotweed immediately adjacent railway embankment. Looks like it has undergone previous cutting/treatment, probably from Network Rail.
TN13	SE 56291 55908	Scattered Himalayan balsam within woodland.
TN14	SE 54525 56747	Himalayan balsam along edge of coniferous plantation/Overton Wood ancient, replanted woodland.
TN15	SE 54965 55996	Scattered Himalayan balsam amongst old machinery.
TN16	SE 55225 55928	Cotoneaster sp. within residential introduced shrub.
TN17	SE 54631 56037	Otter spraint along bank of River Ouse (W4) on base of tree.
TN18	SE 54179 56500	Himalayan balsam prevalent along the banks of The Foss (W5).
TN19	SE 54418 56329	Himalayan balsam along banks of River Ouse (W4).
TN20	SE 54397 56283	Three assumed green dock beetles on broadleaved dock on arable margin.

TN	Grid reference	Description
TN21	SE 54377 56256	Assumed green dock beetle on broadleaved dock on arable margin.
TN22	SE 53992 56223	Four assumed green dock beetles on broad leaved dock.
TN23	SE 54011 55371	Two assumed green dock beetles on broad leaved dock.
TN24	SE 53887 56190	Otter footprints along muddy banks of The Foss (W5).
TN25	SE 53870 56172	Otter footprints along muddy banks of The Foss (W5).
TN26	SE 53743 56260	Himalayan balsam scattered throughout woodland.
TN27	SE 53378 56128	Himalayan balsam on edge of woodland.
		Intentionally Blank - Confidential Information removed.
TN29	SE 53290 56059	Bat hibernation box on mature oak.
TN30	SE 54010 55371	Bat boxes on trees.
TN31	SE 54001 55330	Bat and bird boxes on trees within tree line along the road.
		Intentionally Blank - Confidential Information removed.
		Intentionally Blank - Confidential Information removed.
TN34	SE 51438 55258	GCN found during Yorkshire water works within shelter belt ⁴⁶ .
TN35	SE 51325 54758	Bird box on oak tree.
TN36	SE 49774 52718	Stand of Himalayan balsam on edge of woodland.
TN37	SE 49994 52548	Individual Japanese rose on metal fence/edge of broadleaved plantation woodland.
TN38	SE 49262 49739	Himalayan balsam starts to dominate woodland towards the north and around P129.
TN39	SE 48713 49088	Himalayan balsam along D64.
TN40	SE 48679 48977	Himalayan balsam scattered within mixed plantation woodland surrounding Field nr Healaugh Manor Farm deleted SINC.
TN41	SE 48258 46634	Himalayan balsam on edge of broadleaved plantation woodland at Healaugh Priory marsh deleted SINC.
TN42	SE 48587 46574	Himalayan balsam prevalent along D69.
TN43	SE 48599 46536	Himalayan balsam on both banks of River Wharfe (W9).
TN44	SE 46045 42133	Snowberry is dominant in shrub layer of woodland.
TN45	SE 45879 42166	Moor Lane, Stutton Verges local wildlife site sign.
TN46	SE 46578 41808	Jackdaw Quarry.

⁴⁶ Landowner personal communication with Tim Kell on 25 August 2021

TN	Grid reference	Description
TN47	SE 46326 41559	Himalayan balsam along banks of Cock Beck (W12).
TN48	SE 46959 37698	Possible variegated archangel within broadleaved plantation woodland.
TN49	SE 46939 37661	Individual Japanese rose amongst otherwise intact native species-rich hedgerow.
TN50	SE 46863 37250	Himalayan balsam along banks of D90.
TN51	SE 46655 37044	Himalayan balsam along banks of D90.
TN52	SE 46544 36961	Himalayan balsam along banks of Cock Beck (W12).
TN53	SE 46612 36870	Himalayan balsam along banks of Cock Beck (W12).
TN54	SE 46378 36724	Himalayan balsam along railway and up embankment.
		Intentionally Blank - Confidential Information removed.
		Intentionally Blank - Confidential Information removed.
TN57	SE 46955 31458	Potential stand of snowberry along hardstanding track.
TN58	SE 47634 29827	Mosaic of habitats in this area including scrub, tall ruderal, grass, ephemeral/short perennial and bare ground was identified during the survey. Species present include cocks foot, Yorkshire fog, buttercup, sorrel, birds foot trefoil, vetch, rosebay willowherb, ragwort, creeping thistle, bent grass, ribwort plantain, broadleaved dock, common nettle, bristly oxtongue, cut leaved cranesbill, strawberry, teasel, and scattered bramble and hawthorn scrub. Possibly part of a quarry historically. However, a travellers encampment has since been established and this area is now likely to be hardstanding.

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Annex 8B.3 – Watercourse and Ditch Assessments within 50m of the Order Limits including Protected Species Habitat-based Assessments

Key to Water Vole Habitat Suitability (WVHS) features:

Features indicative of habitat suitability for water voles are described in a series of Suitability Indices (SI) as follows:

SI1 – Well developed (>60%) bankside and emergent vegetation to provide cover; SI2 – Year-round availability of food sources; SI3 – Suitable refuge areas above extremes in water levels; SI4 – Steep banks suitable for burrowing; SI5 – Permanent open water; SI6 – Presence of berm (ledge at water level); SI7 – Lack of disturbance through poaching, grazing and / or recent management; SI8 – Nest building opportunities in vegetation above water level.

Habitat suitability is characterised based on the number of features present as: unsuitable (<3), sub-optimal (3-5) or optimal (>5).

The survey results represent an ecological snapshot of land within the Order Limits at the time of survey. The fauna and flora present may subsequently fluctuate in both species composition and numbers, on both a diurnal and seasonal basis. Species that appear earlier or later in the year may not therefore have been observed, and thus may remain unrecorded. However, consideration has been given to the potential for land within the Order Limits to support protected and priority species which may be present in relation to the Order Limits location and the type and suitability of habitats present.

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
W1- unnamed	SE 57776 59731	Within the Order Limits	Unnamed minor watercourse ~1-2m wide with ~0.5-1m depth of water that has a smooth flow; moderate water quality; no obvious evidence of pollution; bank top heights are ~1 and 2m and the bank material is earth; bankside trees are occasional, bushes are frequent, herbs are rare, reed/sedges are rare, short grass is occasional, and tall grass is rare; bankside species include ash, hawthorn, bramble and Yorkshire fog; there is ~10% of aquatic macrophytes within the channel with in-channel herbs and submerged weeds occasional; the substrate is not visible; aquatic macrophytes species include water mint; bordering land use is pasture; there is no evidence of current or recent management.											
			WVHS features present					WVHS		Otter suitability	SPI fish suitability	Invasive plant species ⁴⁷		
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	N	N	Y	Y	Y	N	Y	Sub-optimal	Optimal for foraging and commuting, and sub-optimal for holt and resting place creation	Optimal for notable fish species (quite wide stream with likely deep depth and sufficient flow)	None observed

⁴⁷ As the survey represents an ecological snapshot of the watercourse at the specified time and location of survey, species that appear earlier or later in the year may not have been observed, and thus may remain unrecorded, or species may be present within the watercourse at other locations, but absent from the survey location.

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
W2 - Moor Gutter	SE 56285 58437	Within the Order Limits	Minor watercourse shown as Moor Gutter on OS maps ~1-2m wide with ~0.2-0.5m depth of water that has very slow and smooth flow; no obvious evidence of pollution although water was murky; bank top heights are ~2m and the bank material is earth; bankside trees are abundant, scrub are frequent, herbs and reed/sedges are occasional, short grass rare and tall grass abundant; bankside species include hawthorn, dogrose, ivy, common reed, timothy grass, common nettle, hogweed, chickweed, dock, and daisy; there are no aquatic macrophytes within the channel and the substrate was not visible; bordering land use is arable; there is no evidence of current or recent management.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
N	Y	Y	Y	Y	N	Y	N	Sub-optimal	Optimal for commuting (flows into and so connected to the River Ouse) but sub-optimal for foraging (small watercourse with likely limited prey source) and holt/resting place (scrub/trees	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow with poor/little assemblage of structural	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
			<p>provide potential resting locations but potential disturbance from public footpath adjacent the watercourse and from agricultural machinery in adjacent fields). Potential otter footprints were recorded along Hurns Gutter habitat features⁴⁸)</p>

⁴⁸ Eels prefer a prey-rich, diverse range of structural habitat features such as aquatic plants, submerged root systems, woody debris, pier supports, undercut banks and channel substrates provide features that eels can use for refuge and ambush (Inside Ecology (2017). Habitat preferences of the critically endangered European eel. (online) (Accessed October 2022)).

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W3 - Hurns Gutter	SE 56072 56353	Within the Order Limits	Minor watercourse ~1-2m wide with ~0.2-0.5m depth of water with a smooth flow; no obvious evidence of pollution; bank top heights are ~1m and ~2m and the bank material is earth; bankside trees are dominant, scrub are frequent, herbs and reed/sedges are occasional, short grass rare and tall grass abundant; bankside species include ash, hawthorn, meadow foxtail, dock, common nettle, cow parsley and willowherb; there are no aquatic macrophytes within the channel and the substrate is earth; bordering land use is arable; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for commuting (flows into and so connected to the River Ouse) but sub-optimal for foraging (small watercourse with likely limited prey source) and holt/resting place (scrub/trees provide	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features)	None	

potential
resting
locations but
potential
disturbance
from public
footpath
adjacent the
watercourse
and from
agricultural
machinery in
adjacent
fields).
Potential otter
footprints
were recorded
along Hurns
Gutter

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W4 - River Ouse	SE 54473 56302	Within the Order Limits	River more than 10m wide with more than ~1m depth of water that has a smooth flow; no obvious evidence of pollution; bank top heights are ~15m and the bank material is earth; water level likely to fluctuate ~1-2m in periods of wet weather; bankside trees are abundant, scrub are frequent, herbs are abundant, with reed/sedges occasional and short and tall grass frequent; bankside species include willow, common nettle, thistle, Himalayan balsam, and cow parsley; there are no aquatic macrophytes within the channel; the substrate is not visible; bordering land use is arable; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for foraging, commuting holt/resting place (large River with deep vegetated banks). Otter spraint was recorded at TN17	Optimal for notable fish species (large river with likely deep depth and sufficient flow)	Himalayan balsam present along banks	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W5 - The Foss	SE 53140 56209	Within the Order Limits	Stream ~2-5m wide and more than ~1m deep that has a smooth flow; no obvious evidence of pollution although quite turbid; bank top heights are ~2m and the bank material is earth; potential fluctuation of water level to top of bank; bankside trees, scrub and herbs are frequent, reed/sedges and tall are rare; bankside grass timothy grass, hawthorn, common nettle and dock; there are no aquatic macrophytes within the channel and the substrate is not visible; bordering land use is arable there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for foraging, commuting holt/resting place (quite wide stream with vegetated banks that flows into and so connected to the River Ouse). Otter footprints recorded at TN24 and TN25	Optimal for notable fish species (quite wide stream with likely deep depth and sufficient flow)	Himalayan balsam	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W6 - White Sike	SE 50381 53668	Within the Order Limits	Stream ~0.5-1m wide and ~0.2-0.5m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~2m and ~1m and the bank material is wood piling and earth respectively; potential fluctuation of water level is ~30cm; bankside trees and scrub are dominant, herbs are abundant, reeds/sedges and short grass are rare and tall grass occasional; bankside species include hawthorn, ash, oak, meadowsweet, garlic mustard, dock, cocks foot and meadow foxtail; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is grassland; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for commuting (flows into and so connected to The Foss with vegetated banks) but sub-optimal for foraging and holt/resting place (small watercourse with likely limited prey source potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W7 - Redwith Beck	SE 48858 50053	Within the Order Limits	Stream ~0.5-1m wide and less than 0.05m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~ ~1m and the bank material is earth; bankside trees are abundant, scrub are abundant, herbs are frequent, reeds/sedges are rare, short grass are rare and tall grass are frequent; bankside species include hawthorn, oak, dogwood, willowherb, Himalayan balsam, false oat grass, cocksfoot, common nettle and creeping thistle; aquatic macrophytes cover 100% of the channel; herbaceous vegetation in channel includes herbs that are frequent; substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	N	Y	Y	Optimal	Sub-optimal for foraging and holt/rest site creation, and optimal for commuting	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features)	Himalayan balsam	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W8 - The Foss Catchment (tributary of Wharfe)	SE 48394 47750	Within the Order Limits	Stream ~1-2m wide and ~0.2-0.5m deep that has a smooth flow; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; bankside trees are rare, scrub are dominant, herbs are frequent, reed/sedges are rare, short grass are rare and tall grass are frequent; bankside species include sycamore, hawthorn, cow parsley, hogweed, common nettle, false oat grass and bramble; ~10% of channel covered in aquatic macrophytes such as water parsnip and the substrate is earth, slit, gravel or pebble; bordering land use is arable; there is no evidence of current or recent management.									
			WVHS features present								WVHS	Otter suitability
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for foraging, commuting holt/resting place (quite wide stream with vegetated banks)	Sub-optimal for notable fish species (quite wide stream with shallow depth)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
W9 - River Wharfe	SE 47426 44284	Within the Order Limits	River more than 10m wide and more than 1m deep that has a smooth flow; no obvious evidence of pollution; bank top heights are ~3m and the bank material is not visible; bankside trees are frequent, scrub are frequent, herbs are frequent, reed/sedges are frequent, short grass are frequent and tall grass are frequent; bankside species include willow, hawthorn, oak, willowherb, Himalayan balsam, common reed, common nettle and false oat grass; ~10% of channel covered in aquatic macrophytes on margin such as willow, Himalayan balsam, willowherb and bindweed; the substrate is not visible; bordering land use is arable and pasture; there is no evidence of current or recent management.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
Y	Y	Y	Y	Y	Y	Y	Y	Optimal (a distinctive plop was heard but no animal was observed)	Optimal for foraging, commuting holt/resting place (wide river with vegetated banks)	Suitable for majority of species (wide river with likely deep depth and sufficient flow)	Himalayan balsam along banks

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W10 – unnamed watercourse	SE 46110 38014	~5m west	Minor watercourse ~0.5-1m wide and ~0.1-0.2m deep that has a rippled flow; no obvious evidence of pollution; bank top heights are ~20cm and ~50cm and the bank material is earth; bankside trees are occasional, scrub frequent, herbs are occasional, reed/sedges, short and tall grass are occasional; bankside species include hawthorn, ash, perennial rye grass, bramble, Yorkshire fog and cocksfoot; ~40% of channel covered in aquatic macrophytes within the channel with herbs frequent, reed/sedges are occasional, submerged weeds are occasional; species include brooklime, common reed and willowherb; substrate is silt, gravel or pebble and earth; bordering land use is arable and pasture; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
N	Y	Y	Y	Y	Y	N	Y	Optimal	Sub-optimal for foraging and optimal for commuting, holt/resting place creation	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W11 – unnamed watercourse	SE 46340 37996	Within the Order Limits	Stream ~0.5-1m wide and ~0.06-0.1m deep that has a smooth flow; no obvious evidence of pollution; bank top heights are ~20cm and the bank material is earth; bankside trees are dominant, scrub occasional, herbs are abundant, reed/sedges, short and tall grass are rare; bankside species include elder, blackthorn, dock, willowherb and common nettle; there are no aquatic macrophytes within the channel; substrate is earth; bordering land use is arable; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	N	Y	Y	Y	Y	Optimal	Sub-optimal for commuting (but does flows into and so connected to Cock Beck), foraging (small and fairly shallow watercourse with likely limited prey source) and holt/resting place (scrub/trees provide potential resting locations but potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species (small and shallow watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W12 - Cock Beck	SE 46688 36970	Within the Order Limits	Stream ~2-5m wide and more than ~1m deep that has a rippled flow; no obvious evidence of pollution; bank top heights are ~50cm and ~2m and the bank material is earth and earth/brick or laid stone respectively; bankside trees are dominant, scrub occasional, herbs are frequent, reed/sedges rare, short is occasional and tall grass is frequent; bankside species include ash, alder, hawthorn, common nettle, Himalayan balsam, cow parsley, red campion, and sedges; there are no aquatic macrophytes within the channel; substrate is predominately earth and cobble; bordering land use is arable and improved grassland; there is no evidence of current or recent management.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Optimal for foraging, commuting holt/resting place (quite wide stream with vegetated banks)	Suitable for majority of species (quite wide stream with likely deep depth and sufficient flow)	Himalayan balsam along banks	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W13 - Stream Dike	SE 47018 35116	Within the Order Limits	Minor watercourse ~1-2m wide with ~0.2-0.5m depth of water that has smooth flow; no obvious evidence of pollution; bank top heights are ~2m and ~1m and the bank material is earth; water levels unlikely to fluctuate frequently; bankside trees and scrub are rare, herbs are dominant, reed/sedges and short grass are rare and tall grass is; bankside species include cocks foot, cow parsley, common nettle, creeping buttercup, hogweed and willowherb; ~90% of the channel has herbaceous vegetation; channel vegetation includes trees and scrub are rare, herbs are dominant, reed/sedges, short and tall grass are rare, with submerged weeds occasional; channel species include water parsley, willowherb and common nettle; substrate is predominately earth; bordering land use is arable; grass adjacent was recently mown although a wide buffer (~7m) still remained; a collapsed culvert is present.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	N	Y	Y	Y	Y	Y	Y	Optimal	Sub-optimal for commuting, holt/resting site (grassy and tall ruderal vegetated banks), and for foraging (small and fairly shallow watercourse with likely limited prey source)	Some small fish observed but considered unsuitable for majority of species (small and shallow watercourse with slow flow) and is sub-optimal for eel (small watercourse with slow flow and poor/little assemblage of	None	

and holt (no structural habitat
scrub/trees and features)
banks appear to
lack suitable
features and
potential
disturbance from
agricultural
machinery in
adjacent fields)

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
W14 - Newthorpe Beck	SE 47100 32352	Within the Order Limits	Stream ~2-5m wide with ~0.2-0.5m depth of water that has smooth flow; no obvious evidence of pollution; bank top heights are ~20cm and the bank material is sticky clay;; bankside trees and scrub are rare, herbs are occasional, reed/sedges are occasional, short grass are occasional, tall grass are occasional; bankside species include cocks foot, bulrush, Yorkshire fog, common nettle and willowherb; channel vegetation includes trees and scrub are rare, herbs are occasional, reed/sedges are occasional, short and tall grass are rare, with submerged weeds occasional; channel species include willowherb, bulrush and unknown submerged weeds; substrate is predominately gravel or pebble, silt and clay; bordering land use is pasture and banks are fenced.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
N	N	N	N	Y	Y	Y	N	Sub-optimal	Optimal for commuting, and sub-optimal for foraging and holt/resting place creations (lack of vegetation and cover)	Unsuitable for majority of species (quite shallow stream)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description										
W15 - Osbaldwick Beck	SE 63930 51967	Within the Order Limits	Minor watercourse ~1-2m wide and ~0.5-1m deep with smooth flow; no obvious evidence of pollution; poor water quality; bank top heights are ~1.5m and ~30cm and the bank material is earth and brick or laid stone; bankside trees are occasional, scrub are frequent, herbs are rare, reed/sedges are rare, short grass are abundant, and tall grass is rare; bankside species include hawthorn, ash, Yorkshire fog, broadleaved dock and common nettle; there are no aquatic macrophytes within the channel and the substrate is predominately earth and boulder; bordering land use is industrial.										
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8						
N	N	N	Y	Y	Y	N	N	Sub-optimal	Unsuitable for holt creation (some of banks are brick and immediately adjacent road) and sub-optimal for foraging, commuting and resting place	Unsuitable for majority of species and is sub-optimal for eel (poor/little assemblage of structural habitat features)	None observed		

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
D2	SE 57235 59796	Within the Order Limits	No ditch was found to exist during the extended Phase 1 habitat survey.

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D4	SE 56453 60128	~20m east	Mostly dry ditch but wet in isolated patches; ~20cm wide with ~0.06-0.1m depth of water that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; bankside scrub and trees are dominant on one bank, and grass and herbs dominant on the other; bankside species include blackthorn, elder, common nettle, hogweed, white dead nettle, dandelion, and dock; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is arable and hedgerow; there is no evidence of current or recent management.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	N	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, commuting, holt/resting place (small and shallow ditch with only isolated patches of water with likely limited prey source and potential disturbance from agricultural machinery in adjacent fields/ hardstanding road)	Unsuitable as largely dry ditch and does not appear to be readily connected to any larger watercourses	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D7	SE 56236 58351	Within the Order Limits	Dry ditch that will likely remain dry throughout the year located along the boundary of two arable fields with some scrub within. Bare ground at base of ditch with smooth banks ~30cm high dominated by grass.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N/A					Unsuitable	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (small banks in between two arable fields that are likely disturbed by agricultural machinery)	Unsuitable as dry	None observed			

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D8	SE 56247 57314	~45m northeast	Flowing water ~1-2m wide with ~0.06-0.1m depth of water that has a smooth flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; bankside trees are abundant, scrub are frequent, herbs are abundant, reed/sedges, short and tall grass are rare; bankside species include sycamore, ash, comfrey, giant hogweed, Himalayan balsam, common nettle, buttercup, cow parsley, and broad-leaved dock; ~50% of the channel has herbaceous vegetation; channel species include willowherb, duckweed and Himalayan balsam with the substrate being earth; bordering land use is arable and woodland; a culvert is present.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Sub-optimal for commuting (but is connected to Hurns Gutter) and for foraging (small watercourse with likely limited prey source), but optimal for holt/resting place (within adjacent woodland). Potential otter footprints were recorded along Hurns Gutter in close proximity to this stream	Unsuitable for majority of species (small watercourse with slow flow) and is sub-optimal for eel (small and shallow watercourse with slow flow and poor/little assemblage of structural habitat features)	Himalayan balsam and giant hogweed along banks	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description										
D9	SE 56489 56766	Within the Order Limits	No access available for survey										
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8			
			-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D10	SE 55682 56954	~20m south-west	Ditch along railway; ~1m wide and ~0.1-0.2m depth; no perceptible flow was observed; no obvious evidence of pollution; bank top heights are ~1m to arable field and about ~2m to railway and the bank material is earth to arable side, and earthy and ballast material leading up to railway; bankside scrub are dominant with trees rare, and grass and herbs are occasional; bankside species include hawthorn, bramble, willowherb, Typha, and horsetail; in-channel vegetation includes buttercup and Typha; substrate is predominately earth; bordering land use is arable and scrub/grass/tall ruderal along railway; there is no evidence of current or recent management.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	Y	Y	N	N	N	N	Sub-optimal	Sub-optimal for foraging and holt/resting place (small shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and the adjacent railway), although is more optimal for commuting (connected to Hurns Gutter)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observe

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D11	SE 55391 57097	Within the Order Limits	Ditch ~0.5-1m wide with ~0.1-0.2m depth of water that has a smooth flow; no obvious evidence of pollution; bank top heights are ~50cm and ~1.5m and the bank material is earth; water level likely to fluctuate ~20cm and would be dependent on rainfall; bankside trees are rare, scrub and herbs are dominant, with reed/sedges, short and tall grass are rare; bankside species include blackthorn, hawthorn, willow scrub, meadowsweet, hogweed, common nettle, and willowherb; ~100% of the channel has herbaceous vegetation; channel species include meadowsweet, willowherb and common nettle with the substrate being earth; bordering land use is arable and plantation woodland; there is no evidence of current or recent management; culverts are present at either end of ditch.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	N	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, commuting and holt/resting place (small shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D12	SE 55179 57173	Within the Order Limits	Ditch ~0.5-1m wide with ~0.1-0.2m depth of water that has a no perceptible flow; minor pollution was observed at the culvert; bank top heights are ~2m and ~1.5m and the bank material is earth; water level unlikely to fluctuate much; bankside trees are rare, scrub and herbs are dominant, with reed/sedges, short and tall grass are rare; bankside species include blackthorn and hawthorn, meadowsweet, willowherb, bramble, common nettle, and hogweed; ~50% of the channel has herbaceous vegetation; channel species include willowherb and brooklime with the substrate being earth; bordering land use is arable and the bankside vegetation is treated with herbicides in large areas; a culvert and man-made well is present.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	Y	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D15	SE 55163 56890	Within the Order Limits	Ditch ~0.5-1m wide with ~0.06-0.1m depth of water that has a no perceptible flow; high levels of pollution run off from adjacent agricultural field were observed; bank top heights are ~30cm and the bank material is earth; water level rarely fluctuate; bankside trees are rare, scrub are dominant, with herbs, reed/sedges, short and tall grass are rare; bankside species include field maple, hawthorn, bramble, cow parsley, hogweed, white dead nettle, thistle, and common nettle; there are no aquatic macrophytes within the channel although bramble scrub are dominant in the channel; the substrate is not visible; bordering land use is arable, there is no evidence of current or recent management; the ditch is blocked at both ends.									
	WVHS features present							WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
	N	Y	N	Y	N	N	N	N	Unsuitable	Negligible due to high levels of pollution	Unsuitable due to high levels of pollution	None

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D24	SE 54466 54954	Within the Order Limits	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~0.5m and the bank material is earth; potential fluctuation of water level by ~10cm and ditch likely to dry out annually; bankside trees are abundant, scrub are dominant, herbs are frequent, reed/sedges are rare, short grass frequent and tall grass are abundant; bankside species include ash, oak, hawthorn, and bramble; there are no aquatic macrophytes within the channel and the substrate is predominately earth; bordering land use is arable and road verge; there is no evidence of current or recent management; there are no artificial features or culverts present.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	Y	N	N	N	N	Y	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small shallow ditch with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along hardstanding road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D25	SE 54196 55051	Within the Order Limits	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; potential fluctuation of water level by ~10cm and ditch likely to dry out annually; bankside trees are abundant, scrub are occasional, herbs are frequent, reed/sedges are frequent, short grass frequent and tall grass are abundant; bankside species include ash, oak, hawthorn, and bramble; there are no aquatic macrophytes within the channel and the substrate is predominately earth; bordering land use is arable and road verge; there is no evidence of current or recent management; there are no artificial features culverts present.																																				
<table border="1"> <thead> <tr> <th colspan="8">WVHS features present</th> <th>WVHS</th> <th>Otter suitability</th> <th>SPI fish suitability</th> <th>Invasive plant species</th> </tr> <tr> <th>SI1</th> <th>SI2</th> <th>SI3</th> <th>SI4</th> <th>SI5</th> <th>SI6</th> <th>SI7</th> <th>SI8</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>N</td> <td>Y</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>Y</td> <td>N</td> <td>Unsuitable</td> <td>Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along hardstanding road)</td> <td>Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)</td> <td>None observed</td> </tr> </tbody> </table>				WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					N	Y	N	N	N	N	Y	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along hardstanding road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8																																
N	Y	N	N	N	N	Y	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along hardstanding road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D26	SE 54100 55302	Within the Order Limits	Ditch less than ~0.5m wide and ~0.1-0.2m wide that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; potential fluctuation of water level by ~30cm; bankside trees are rare, scrub are dominant, herbs are occasional, reed/sedges are rare, short grass frequent and tall grass are rare; bankside species include hawthorn, common nettle and willowherb; there are no aquatic macrophytes within the channel and the substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management; there is a culvert under the road.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	N	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along the hardstanding road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D27	SE 54053 55351	Within the Order Limits	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; potential fluctuation of water level by ~30cm; bankside trees are rare, scrub are dominant, herbs are frequent, reed/sedges are rare, short grass frequent and tall grass are rare; bankside species include rose, hawthorn, cow parsley, common nettle, hogweed and dock; there are no aquatic macrophytes within the channel and the substrate is predominately earth; bordering land use is arable and road verge; there is evidence of bankside vegetation cutting and culverts were blocked by vegetation.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	Y	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small, fairly shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D29	SE 53629 55969	~20m south-west	Ditch ~0.5-1m wide and ~0.06-0.1m wide that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~0.5m and the bank material is earth; potential fluctuation of water level by ~20cm; bankside trees are occasional, scrub are dominant, herbs are rare, reed/sedges are rare, short grass frequent and tall grass are rare; bankside species include hawthorn, common nettle and rose; ~5% of the channel has herbaceous vegetation; trees, scrub, reed/sedges, short grass, tall grass and submerged weeds are rare in the channel, with herbs are occasional; channel species include hawthorn, bramble and broad-leaved dock; substrate is predominately earth; bordering land use is arable; there is evidence of poaching.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			S11	S12	S13	S14	S15	S16	S17	S18				
			N	Y	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, and commuting (small, shallow ditch with likely limited prey source, is connected to The Foss), and optimal for holt/resting place (within adjacent woodland)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D30	SE 53857 56143	Within the Order Limits	Ditch ~1m wide with ~5cm depth of water that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1.5m high and the bank material is earth; water level unlikely to fluctuate much; bankside trees are abundant, scrub are occasional, herbs are dominant, with reed/sedges and short grass are rare, and tall grass are occasional; bankside species include willow, willowherb, dock, common nettle, and cow parsley; there are no aquatic macrophytes within the channel; the substrate is earth; bordering land use is arable; there is no evidence of current or recent management; there are two culverted pipes that provide water to ditch.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	N	Y	Y	Y	N	Y	Y	Optimal	Sub-optimal for foraging, and commuting (small, shallow ditch with likely limited prey source, is connected to The Foss), and optimal for holt/resting place (within adjacent woodland)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D31	SE 53334 56060	~40m south	Ditch ~0.5-1m wide and ~0.06-0.1m deep with smooth flow; no obvious evidence of pollution; moderate water quality; bank top heights are ~1 and ~2m and the bank material is earth; regular fluctuation of water level likely; bankside trees are rare, scrub are dominant, herbs are rare, reed/sedges and rare, short grass are frequent, and tall grass are rare; bankside species include hawthorn, field maple, perennial rye grass and Yorkshire fog; there are no aquatic macrophytes within the channel and the substrate is predominately clay and cobble; bordering land use is pasture and residential with the bank fenced; there is no evidence of current or recent management.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	N	N	Y	Y	Y	N	Y	Sub-optimal	Sub-optimal for foraging (small, shallow drain with likely limited prey source), holt/rest site creation (within adjacent hedgerow and steep banks), and commuting	Unsuitable for majority of species and is sub-optimal for eel (small, shallow drain with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D32	SE 53166 56118	Within the Order Limits	Ditch ~0.5-1m wide and less than 0.05m deep with smooth flow; no obvious evidence of pollution; moderate water quality; bank top heights are ~1m and the bank material is earth; ditch was nearly dry at time of survey; bankside trees are rare, scrub are dominant, herbs are abundant, reed/sedges and rare, short and tall grass are occasional; bankside species include hawthorn, blackthorn and bramble scrub, and common nettle; there are dense vegetation within the channel and the substrate is predominately earth; in-channel bushes are dominant, in-channel herbs are frequent, and trees, reed/sedges, short and tall grass, submerged weeds are all rare; in-channel species include blackthorn, hawthorn, bramble, and common nettle; bordering land use is pasture; grazing horses in adjacent field to the east.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			S11	S12	S13	S14	S15	S16	S17	S18				
			N	N	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging (small, shallow drain with likely limited prey source), for holt creation and resting place creation (within adjacent hedgerow and steep banks), and commuting	Unsuitable	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D33 (Wood Gutter)	SE 52572 56288	Within the Order Limits	Ditch less than ~0.5m wide and ~0.06-0.1m deep with no perceptible flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; potential fluctuation of water level by ~20cm; bankside trees are occasional, scrub are dominant, herbs are abundant, reed/sedges, short and tall grass are rare; bankside species include hawthorn, oak and common nettle; there are no aquatic macrophytes within the channel and the substrate is predominately earth; bordering land use is arable and pasture; there is no evidence of current or recent management.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
Y	Y	Y	Y	N	N	Y	N	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D35		Within the Order Limits	Ditch ~0.5-1m wide and 0.06-0.1m depth that has no perceptible flow; pollution observed; water quality is poor; bank top heights are ~2 and 4m and the bank material is earth; potential fluctuation of water level is likely; bankside trees are rare, scrub and herbs are dominant, reed/sedges are rare, short grass are occasional, and tall grass are dominant; bankside species present include cocksfoot, common nettle, creeping thistle, bramble, cow parsley and hawthorn; ~10cm of channel has aquatic macrophytes; bordering land use is arable, broadleaved woodland and hedgerow; there is no evidence of current or recent management and there are no artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	Y	Y	N	N	Y	N	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small shallow ditch, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D36	SE 51947 56500	Within the Order Limits	Dry ditch at the base of a hedgerow and along the boundary of an arable field; substrate is predominately earth; there is no evidence of current or recent management or artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	N	N	N	N	N	Y	N	Unsuitable	Negligible for foraging and commuting (small dry shallow ditch), and sub-optimal for holt/resting place and commuting (scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D37	SE 51492 56656	Within the Order Limits	Dry ditch at the base of a hedgerow and along the boundary of an arable field; hedgerow comprises blackthorn, hawthorn and rosa; substrate is predominately earth; there is no evidence of current or recent management or artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			S11	S12	S13	S14	S15	S16	S17	S18				
			N	N	N	N	N	N	Y	N	Unsuitable	Negligible for foraging and commuting (small dry shallow ditch), and sub-optimal for holt/resting place and commuting (scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D38	SE 51274 56313	Within the Order Limits	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~2m and ~1m and the bank material is earth; potential fluctuation of water level by ~20cm; bankside trees are rare, scrub are dominant, herbs are frequent, reed/sedges and short grass are rare, and tall grass are frequent; bankside species include hawthorn, meadowsweet, common nettle, cocks foot, and broad-leaved dock; ~90% of the channel has herbaceous vegetation; trees and scrub are rare within the channel, herbs are frequent, reeds/sedges and short grass are rare, tall grass are frequent and submerged weeds are occasional; channel species include willowherb, common nettle, meadowsweet and cranesbill; substrate is not visible; bordering land use is arable; there is no evidence of current or recent management or artificial features.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	Y	Y	Y	N	Y	Y	Y	Optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D41	SE 52109 56060	~15m west	Dry ditch less than ~0.5m wide; bank top heights are ~20cm and ~30cm and the bank material is earth; bankside trees, scrub, herbs, reed/sedges and short grass are rare, with tall grass dominant; bankside species include cocks foot, perennial rye grass, creeping thistle, and rushes;; in-channel covered by terrestrial grasses and rushes; the substrate is predominately earth; bordering land use is amenity grassland as it is a campsite; there is no evidence of current or recent management.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			S11	S12	S13	S14	S15	S16	S17	S18				
			Y	N	N	N	N	N	N	N	Unsuitable	Negligible for foraging (dry ditch), and commuting, and sub-optimal for holt/resting place (small, dry ditch with likely limited prey source, grass may provide resting place cover but there is potential public disturbance caravan/camping site). Anecdotal evidence that otter feed in nearby P132	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D42	SE 52098 55931	~5m east	Ditch ~0.5-1m wide and less than 0.05m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~2m and ~30cm and the bank material is earth; bankside trees are frequent, scrub are dominant, herbs are rare, reed/sedges are rare, short grass are occasional, and tall grass are rare; bankside species include hawthorn, ivy, oak, Yorkshire fog and perennial rye grass; ~20% of the channel has herbaceous vegetation; trees and scrub are rare within the channel, herbs are rare, reeds/sedges are rare, short grass are occasional, tall grass are rare and submerged weeds are rare; channel species include perennial rye grass and Yorkshire fog; substrate is earth; bordering land use is arable and hedgerow/trees; there is no evidence of current or recent management or artificial features.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			S11	S12	S13	S14	S15	S16	S17	S18				
			N	N	Y	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/rest site, and commuting (small, shallow ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D43	SE 51986 55712	~5m south-east	Dry ditch ~0.5-1m wide and less than 0.05m deep; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; bankside trees are occasional, scrub are rare, herbs are occasional, reed/sedges are rare, short grass are frequent, and tall grass are frequent; bankside species include cocksfoot, cypress, common nettle, broadleaved dock and cow parsley; the channel is fully vegetated with terrestrial grasses such as cocksfoot and perennial rye grass; substrate is earth; bordering land use is arable; there is no evidence of current or recent management or artificial features.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
S11	S12	S13	S14	S15	S16	S17	S18				
N	N	N	N	N	N	N	N	Unsuitable	Negligible as a small shallow and dry ditch	Unsuitable as dry ditch	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description										
D44	SE 51911 55606	~10m south-east	Ditch less than 0.5m wide and ~0.06-0.1m deep; seen from distance so no able to determine if flow; no obvious evidence of pollution; bank top heights are ~1m and the bank material is earth; bankside trees are frequent, scrub are frequent, herbs are rare, reed/sedges are rare, short grass are frequent, and tall grass are occasional; bankside species are unknown; substrate is unknown but likely to be earth; bordering land use is arable; there is no evidence of current or recent management or artificial features.										
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8						
N	N	Y	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow polluted ditch with no flow and poor/little assemblage of structural habitat features)	None observed		

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D49	SE 50989 55408	Within the Order Limits	Ditch ~0.5-1m wide that has no perceptible flow; pollution observed; bank top heights are ~2m and the bank material is earth; potential fluctuation of water level is unlikely; bankside trees, herbs, reeds/sedges are occasional, scrub are abundant and tall grass are abundant; bankside species include hawthorn, elm, blackthorn, rosa, elder; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is improved grassland and the banks are fenced; there is no evidence of current or recent management and there are no artificial features.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	N	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small, shallow polluted ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow polluted ditch with no flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D52	SE 50821 54740	Within the Order Limits	Dry ditch at the base of a hedgerow in between two improved grassland fields; hedgerow comprises blackthorn, hawthorn and elder; substrate is predominately earth; there is no evidence of current or recent management or artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			S11	S12	S13	S14	S15	S16	S17	S18				
			N	N	N	Y	N	N	N	N	Unsuitable	Negligible for foraging (dry ditch) and commuting. And sub-optimal for, holt/resting place (dry ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery and cows in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D53	SE 51135 54629	Within the Order Limits	Dry ditch; bank top heights are ~30m and the bank material is earth; may hold water during heavy rain; bankside trees, herbs, reeds/sedges and tall grass are rare, scrub is dominant and short grass are occasional; bankside species include hawthorn; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is pasture; there is evidence of cattle grazing and there are no artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	N	N	N	N	N	N	Unsuitable	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (dry ditch, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
D54	SE 51161 54625	~5m south-east	No ditch was found to exist during the extended Phase 1 habitat survey

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D55	SE 50796 53987	~10m south	Ditch ~0.5-1m wide and ~0.6-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1.5m and ~1m and the bank material is earth; bankside trees are occasional, scrub are abundant, herbs are frequent and , scrub dominant, herbs and tall grass are occasional, reed/sedges and short grass are rare; bankside species include hawthorn, hazel, holly, prunus sp. field maple, ash, bramble, willowherb, common nettle, creeping thistle, broad-leaved dock, woundwort, and false oat grass; 100% of channel with vegetation comprising mostly herbs and tall grass; channel herbaceous vegetation includes willowherb, bindweed, woundwort and false oat grass; substrate is not visible; bordering land use is arable; there is no evidence of current or recent management or artificial features.																																				
<table border="1"> <thead> <tr> <th colspan="8">WVHS features present</th> <th>WVHS</th> <th>Otter suitability</th> <th>SPI fish suitability</th> <th>Invasive plant species</th> </tr> <tr> <th>SI1</th> <th>SI2</th> <th>SI3</th> <th>SI4</th> <th>SI5</th> <th>SI6</th> <th>SI7</th> <th>SI8</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>N</td> <td>Y</td> <td>Y</td> <td>Y</td> <td>N</td> <td>N</td> <td>N</td> <td>Y</td> <td>Sub-optimal</td> <td>Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, connected to White Sike, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)</td> <td>Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)</td> <td>None observed</td> </tr> </tbody> </table>				WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					N	Y	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, connected to White Sike, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8																																
N	Y	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, connected to White Sike, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D56	SE 50238 53357	Within the Order Limits	Ditch ~ 0.5-1m wide and ~0.2-0.5m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~2m and ~30cm and the bank material is earth/wood piling and earth respectively; potential fluctuation of water level is likely to be infrequent; bankside trees are rare, scrub dominant, herbs are abundant, reed/sedges and short grass are rare, and tall grass are frequent; bankside species include hawthorn, blackthorn, sycamore, ash, meadowsweet, cow parsley, broad-leaved dock, vetch, cocks foot, and meadow foxtail; ~90% of the channel has herbaceous vegetation; trees, scrub, reed/sedges, short grass, tall grass and submerged weeds are rare within the channel, with herbs abundant; channel species include water plantain, water parsnip and duckweed; substrate is predominately silt and clay; bordering land use is arable and the banks are fenced; there is no evidence of current or recent management and there a culvert.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Sub-optimal for foraging, holt/resting place and commuting (small, fairly shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, fairly shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D57	SE 50716 53075	~25m east	No access available for survey											
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D58	SE 50416 52854	~5m north	Ditch ~ 0.5-1m wide and ~0.2-0.5m deep that has no perceptible flow; agricultural runoff pollution observed; bank top heights are ~30cm and the bank material is earth; potential fluctuation of water level is likely to be approximately 10cm; bankside trees are rare, scrub dominant, herbs are occasional, reed/sedges and short grass are rare, and tall grass are occasional; bankside species include blackthorn, cocks foot, meadow foxtail and broadleaved dock; no herbaceous vegetation is present in the channel; substrate is predominately earth; bordering land use is arable ; there is no evidence of current or recent management and there are is a culvert.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			N	N	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, fairly shallow drain with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D59	SE 49737 52730	Within the Order Limits	Same drain as D56 but ditch becomes dry to the south-west (at this location); bank top heights are ~1m and the bank material is earth; may hold water during heavy rain; bankside herbs and tall grass are dominant and short grass are occasional; there are similar terrestrial species within the channel as on the bank; substrate is predominately earth; bordering land use is arable; there are culverts present along the drain.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	Y	Y	N	N	N	N	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, fairly shallow drain with likely limited prey source, grass/herbs may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D60	SE 49767 52710	Within the Order Limits	Dry ditch; bank top heights are ~1.5m and the bank material is earth; may hold water during heavy rain; bankside trees are occasional, scrub and tall grass/herbs are dominant; bankside species include hawthorn, oak trees, holly, blackthorn and bramble; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management and there are no artificial features.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
Y	N	N	N	N	N	N	N	Unsuitable	Negligible for foraging (dry) and commuting, and sub-optimal for holt/resting place (small dry ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and hardstanding track)	Unsuitable as dry	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D62	SE 48732 50513	~20m north	Ditch ~0.5-1m wide and less than ~0.05m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~1.5m and the bank material is earth; bankside trees are occasional, scrub are dominant, herbs and tall grass are frequent; bankside species include hawthorn, field maple, guelder rose, hogweed, willowherb, false oat grass, bramble, woundwort; there are no aquatic macrophytes within the channel; substrate is not visible; bordering land use is industrial and arable; there is no evidence of current or recent management and it is unknown if there are any artificial features.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields, vehicles along adjacent road, and from the adjacent commercial building)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description												
D63	SE 48736 49267	~5m east	Ditch ~1-2m wide and ~0.1-0.2m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~2m and ~1m and the bank material is earth respectively; bankside trees are frequent, scrub and tall grass abundant, and herbs are dominant; it was not possible to determine if there is aquatic macrophytes within the channel; bordering land use is arable and woodland; there is no evidence of current or recent management or artificial features.												
				WVHS features present				WVHS	Otter suitability	SPI fish suitability	Invasive plant species				
				SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
				Y	Y	Y	Y	N	N	Y	N	Sub-optimal	Sub-optimal for foraging and commuting (small, fairly shallow ditch with likely limited prey source) and optimal for holt/resting place (within adjacent woodland)	Unsuitable for majority of species and is sub-optimal for eel (small, fairly shallow ditch with no flow and poor/little assemblage of structural habitat features)	Himalayan balsam

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D64	SE 48638 48966	Within the Order Limits	Dry ditch; bank top heights are ~2m and the bank material is earth; bankside trees are rare, scrub are frequent, herbs are occasional, reed/sedges and short grass are rare, and tall grass are abundant; bankside species include elder, hazel, malus sp., hawthorn, bramble, cocks foot, hogweed, and Yorkshire fog; substrate is not visible but likely to be earth; bordering land use is arable; there is no evidence of current or recent management or artificial features.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
Y	Y	N	Y	N	N	Y	N	Sub-optimal	Negligible for foraging and commuting (dry ditch), sub-optimal for holt/resting place (small dry ditch, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D65	SE 48486 48217	Within the Order Limits	Dry ditch; bank top heights are ~2m and ~1.5m and the bank material is earth; bankside trees, scrub and herbs are frequent, bankside reed/sedges and short grass are rare, and tall grass are occasional; bankside species include hawthorn, bramble, elm, elder, hogweed, willowherb, creeping thistle and false oat grass; ~100% of the channel has herbaceous vegetation with herbs dominant such as willowherb, creeping thistle and creeping buttercup; substrate is predominately earth; bordering land use is arable; there is recent tree cutting which may result in blockage of ditch from chippings and reduced shading, and there is no evidence of artificial features present; potential vole feeding remains were recorded along ditch.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			S11	S12	S13	S14	S15	S16	S17	S18				
			Y	Y	Y	Y	N	Y	N	Y	Optimal	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (small dry ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D66 and D68 (same ditch)	SE 48433 47054	~5m east	Ditch ~0.5-1m wide and ~0.1-0.2m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; bankside trees are occasional, scrub is occasional, short grass are frequent, and tall grass are occasional; there is no aquatic macrophytes within the channel; substrate is predominately earth and silt; bordering land use is arable and woodland; there is no evidence of current or recent management or artificial features.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
N	Y	N	Y	Y	Y	N	Y	Sub-optimal	Sub-optimal for foraging and commuting, and optimal for holt/rest site (within the woodland)	Unsuitable for majority of species and is sub-optimal for eel (small, fairly shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed at time of assessment, but Himalayan balsam known to be present within woodland from previous survey visit	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D67	SE 48228 46900	~35m east	Dry ditch; bank top heights are ~1m and the bank material is earth; bankside trees and scrub are dominant, and herbs are frequent, bankside reed/sedges, short grass and tall grass are rare; bankside species include willow, alder, blackthorn, hawthorn, and common nettle; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is arable and woodland; there is no evidence of current or recent management or artificial features.																																				
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WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8																																
Y	Y	Y	N	N	N	Y	Y	Sub-optimal	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (within adjacent woodland)	Unsuitable as dry	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D69	SE 48587 46520	~25m west	Dry ditch; very dense vegetation including Himalayan balsam and willow scrub mean a lot of the ditch features could not be identified.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	Y	N	N	N	N	N	Unsuitable	Negligible for foraging and commuting (dry ditch), and optimal for holt/resting place (within adjacent woodland)	Unsuitable as dry	Himalayan balsam along banks and within channel

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D70	SE 48026 46412	Within the Order Limits	Dry ditch; bank top heights are ~2.5m and the bank material is earth; bankside trees are occasional, scrub and herbs are frequent, tall grass are dominant; bankside species include false oat, cocks' foot, creeping thistle and common nettle; substrate is earth; bordering land use is arable and pasture; there is no evidence of current or recent management or artificial features.											
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
			S11	S12	S13	S14	S15	S16	S17	S18				
			Y	Y	Y	Y	N	N	Y	N	Sub-optimal	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (small dry ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D73	SE 47800 45792	~5m north	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~50cm and the bank material is earth; bankside trees are rare, scrub are dominant, herbs, reed/sedges and short grass are rare and tall grass are dominant; bankside vegetation includes hawthorn, blackthorn, willow, rose, elder, false oat grass, and cocks foot; ~90% of the channel has herbaceous vegetation; channel vegetation includes water parsnip and duckweed; substrate is predominately earth; bordering land use is semi-improved grassland; there is a brick wall present at the ditch.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	Y	Y	Y	N	N	Y	Y	Optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
D74	SE 47791 45568	Within the Order Limits	No ditch was found to exist during the extended Phase 1 habitat survey

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D75	SE 47562 45531	~40m north-west	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has a smooth flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; bankside trees are rare, scrub are occasional, herbs are frequent, reed/sedges and short grass are rare, and tall grass are dominant; bankside vegetation includes elder, willowherb, common nettle, bindweed, false oat grass, cocks foot, and pond sedge; ~90% of the channel has herbaceous vegetation including herbs and reed/sedges; channel vegetation includes pond sedge and willowherb; substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management, and a brick well is present.																																				
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WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8																																
Y	N	Y	Y	Y	N	Y	Y	Optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D76	SE 47744 45386	Within the Order Limits	Dry ditch; bank top heights are ~50cm and the bank material is earth; bankside scrub are dominant, herbs are occasional and tall grass are dominant; bankside species include hawthorn, cocks foot, meadow foxtail, false oat grass, and bindweed; substrate is earth; ~10% of channel has herbaceous vegetation such as herbs; duckweed is present on the ground indicating ditch holds water at least some of the time; bordering land use is arable; there is no evidence of current or recent management or artificial features.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
N	N	Y	Y	N	Y	Y	Y	Sub-optimal	Negligible for foraging and commuting (dry ditch), sub-optimal for holt/resting place and commuting (small, dry ditch, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description										
D81 and D82 (ditches in close proximity and similar in nature)	SE 47376 44088	Within the Order Limits	Ditch ~1-2m wide and ~0.2-0.5m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; bankside trees are rare, scrub are rare, herbs are frequent, reed/sedges are frequent, short grass and tall grass are rare; bankside vegetation includes common reed and willowherb; ~100% of the channel has herbaceous vegetation including herbs that are occasional and reed/sedges that are abundant; channel vegetation includes common reed and willowherb; substrate is not visible; bordering land use is grazing floodplain and the banks are fenced; there is no evidence of current or recent management.										
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
S11	S12	S13	S14	S15	S16	S17	S18						
Y	Y	N	Y	Y	N	Y	Y	Optimal	Sub-optimal for foraging and holt/resting place creation (small, shallow ditch with likely limited prey source) and optimal for commuting (connects to the River Wharfe)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed		

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description										
D83	SE 47351 43995	Within the Order Limits	Ditch ~1-2m wide and ~0.2-0.5m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~50cm and the bank material is earth and sticky clay; bankside trees are dominant, scrub are occasional, herbs are frequent, reed/sedges are rare, short grass and tall grass are rare; bankside vegetation includes ground ivy, willow, ash and willowherb; there is no aquatic macrophytes in the channel; predominant substrate is silt, clay and earth; bordering land use is grazing floodplain and woodland and the banks are fenced; there is no evidence of current or recent management.										
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8						
Y	Y	Y	Y	Y	Y	Y	Y	Optimal	Sub-optimal for foraging (fairly shallow ditch with likely limited prey source) and optimal for commuting and holt/resting place creation (woodland likely provides holt/resting place opportunities and connects to the River Wharfe)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed		

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D84	SE 45507 40381	~25m north-west	No access available for survey											
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D86	SE 45901 39651	Within the Order Limits	Ditch ~0.5-1m wide and ~0.06-0.1m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~1.5m and the bank material is earth; bankside trees are abundant, scrub are abundant, herbs are abundant, reed/sedges are rare, short grass are abundant; bankside vegetation includes common nettle, hawthorn, hogweed, rosebay willowherb, and terrestrial grasses; ~5% of the channel has herbaceous vegetation; herbs in channel are rare, short grass are rare; predominant substrate is silt, sand and bedrock; bordering land use arable, hedgerow, woodland and grassland; there is a culvert at the end of the ditch.									
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					
N	Y	N	Y	Y	Y	Y	N	Sub-optimal	Sub-optimal for foraging, commuting, holt and resting place creation (fairly shallow ditch with likely limited prey source, with woodland providing limited resting place cover)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed	

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D87	SE 46098 39485	~5m east	Ditch ~0.5-1m wide and ~0.1-0.2m deep that has smooth flow; no obvious evidence of pollution; bank top heights are ~50cm and the bank material is earth; bankside herbs are occasional, reed/sedges are rare, short grass and tall grass are frequent; bankside vegetation includes Yorkshire fog, hogweed, willowherb and broadleaved dock; ~50% of the channel has herbaceous vegetation; vegetation in the channel includes herbs are occasional, reed/sedges are occasional, short and tall grass are rare and submerged weeds are occasional; vegetation in the channel includes willowherb and rushes; predominant substrate is clay, earth and gravel/pebble; bordering land use is arable; there is a culvert at the end of the ditch is blocked off.											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	N	Y	Y	Y	N	N	Sub-optimal	Sub-optimal for foraging, commuting, holt and resting place creation (fairly shallow ditch with likely limited prey source)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D88	SE 46346 38515	Within the Order Limits	Small depression rather than ditch.											
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	--

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D89	SE 46295 37904	~5m north	Dry at the time of survey ~1-2m wide; bank top heights are ~1m and the bank material is earth; bankside trees are dominant, scrub are dominant, herbs are frequent, and reed/sedges, short and tall grass are rare; bankside species include blackthorn, ash, bramble, meadowsweet, and hogweed; the channel is fully covered by herbaceous vegetation such as rush, horsetail and bramble; the substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
Y	Y	Y	Y	N	N	Y	Y	Optimal	Negligible for foraging (dry drain) and sub-optimal for holt/resting place and commuting (dry drain but connected to W11)	Unsuitable as dry drain	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D90	SE 46682 37050	Within the Order Limits	Ditch ~1-2m wide and ~0.1-0.2m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~20cm and the bank material is earth; bankside trees are dominant, scrub are occasional, herbs are occasional, and reed/sedges, short and tall grass are rare; bankside vegetation includes hazel, ash, willow, common nettle, broad-leaved dock, dogs mercury and Himalayan balsam; there are no aquatic macrophytes within the channel; substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management or artificial features.											
			WVHS features present					WVHS	Otter suitability	SPI fish suitability	Invasive plant species			
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	Y	Y	N	Y	Y	N	Sub-optimal	Sub-optimal for foraging and commuting, and optimal for holt/rest site (shallow ditch with likely limited prey source, trees and scrub may provide resting place cover)	Unsuitable for majority of species and is sub-optimal for eel (shallow ditch with no flow and poor/little assemblage of structural habitat features)	Himalaya n balsam

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description									
D94	SE 47091 33963	Within the Order Limits	Ditch ~0.5-1m wide and less than ~0.05m deep that has a smooth flow; no obvious evidence of pollution; bank top heights are ~1.5m and ~1m and the bank material is earth; bankside trees are rare, scrub are dominant, herbs are frequent, reed/sedges and short grass are rare, and tall grass are frequent; bankside vegetation includes hawthorn, elder, common nettle, broad-leaved dock, willowherb, cleavers, false oat grass, and cocks foot; substrate is predominately earth and gravel/pebble; bordering land use is arable; the grass was recently cut along the bank and the cuttings could impact drainage, and there are culverts under the farm access.									
	WVHS features present							WVHS	Otter suitability	SPI fish suitability	Invasive plant species	
	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
	Y	Y	N	Y	Y	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with slow flow and poor/little assemblage of structural habitat features)	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D96	SE 47336 30917	Within the Order Limits	Ditch ~1-2m wide with less than ~0.05m depth of water that has no perceptible flow; some pollution observed; bank top heights are ~2m and ~1m and the bank material is earth; water levels potentially fluctuate ~20cm; bankside trees and scrub are rare, herbs are dominant, reed/sedges, short and tall grass are rare; bankside species include sycamore, hogweed, willowherb, common nettle, cow parsley and bindweed; ~90% of the channel has herbaceous vegetation; channel vegetation includes trees and scrub are rare, herbs are abundant, reed/sedges, short and tall grass and submerged weeds are rare; channel species include bindweed and common nettle; substrate is predominately earth; bordering land use is arable; there is no evidence of current or recent management.																																				
<table border="1"> <thead> <tr> <th colspan="8">WVHS features present</th> <th>WVHS</th> <th>Otter suitability</th> <th>SPI fish suitability</th> <th>Invasive plant species</th> </tr> <tr> <th>S11</th> <th>S12</th> <th>S13</th> <th>S14</th> <th>S15</th> <th>S16</th> <th>S17</th> <th>S18</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>N</td> <td>Y</td> <td>Y</td> <td>N</td> <td>N</td> <td>N</td> <td>Y</td> <td>Sub-optimal</td> <td>Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)</td> <td>Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)</td> <td>None observed</td> </tr> </tbody> </table>				WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	S11	S12	S13	S14	S15	S16	S17	S18					Y	N	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
S11	S12	S13	S14	S15	S16	S17	S18																																
Y	N	Y	Y	N	N	N	Y	Sub-optimal	Sub-optimal for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields)	Unsuitable for majority of species and is sub-optimal for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features)	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description								
D97	SE 47228 30877	Within the Order Limits	Dry ditch along a road; bank top heights are ~1m and the bank material is earth; bankside scrub and tall grass are dominant, and herbs are frequent; bankside species include cow parsley, creeping thistle, white dead nettle, willowherb, horsetail, cocks foot, hogweed and bramble; substrate is earth; ~90% of the channel has herbaceous vegetation with herbs and terrestrial grasses dominant; bordering land use is arable; there is no evidence of current or recent management or artificial features.								
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
Y	Y	N	Y	N	N	N	N	Sub-optimal	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (small dry ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
D98	SE 47201 30677	~25m west	No ditch was found to exist during the extended Phase 1 habitat survey

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D99	SE 47824 30284	~10m south	Dry ditch along a road; bank top heights are ~1m and the bank material is not visible; bankside trees and scrub are rare, herbs are dominant, reed and sedges are rare, short grass is rare and tall grass is abundant; bankside species include common hogweed, false oat grass, cocksfoot, bramble, willowherb and common nettle; substrate is not visible; bordering land use is arable; there is no evidence of current or recent management or artificial features.											
			WVHS features present						WVHS	Otter suitability	SPI fish suitability	Invasive plant species		
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			Y	N	N	N	N	N	N	N	Unsuitable	Negligible for foraging and commuting (dry ditch), and sub-optimal for holt/resting place (small dry ditch with likely limited prey source, grass may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road)	Unsuitable as dry	None observed

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description
D102	SE 48779 29076	Within the Order Limits	No ditch was found to exist during the extended Phase 1 habitat survey

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description																																				
D103	SE 48845 29172	~5m east	Ditch ~1-2m wide with ~0.5-1m depth of water that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~20cm and the bank material is earth; water levels potentially fluctuate with rainfall; bankside trees, herbs, reed/sedges and short grass are rare, scrub are abundant and tall grass is frequent; bankside species include false oat grass, hawthorn, blackthorn, elm, and Yorkshire fog; ~100% of the channel has herbaceous vegetation including herbs and grasses such as herb Robert, false oat grass, Yorkshire fog and broad-leaved dock; substrate is predominately earth and clay; bordering land use is arable and improved grassland; there is no evidence of current or recent management but the ditch may be dredged.																																				
<table border="1"> <thead> <tr> <th colspan="8">WVHS features present</th> <th>WVHS</th> <th>Otter suitability</th> <th>SPI fish suitability</th> <th>Invasive plant species</th> </tr> <tr> <th>SI1</th> <th>SI2</th> <th>SI3</th> <th>SI4</th> <th>SI5</th> <th>SI6</th> <th>SI7</th> <th>SI8</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>N</td> <td>N</td> <td>N</td> <td>Y</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>Unsuitable</td> <td>Sub-optimal for foraging, holt/resting place and commuting (small ditch with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and horses from adjacent running track)</td> <td>Unsuitable for majority of species and is sub-optimal for eel (small ditch with no flow and poor/little assemblage of structural habitat features)</td> <td>None observed</td> </tr> </tbody> </table>				WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8					N	N	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small ditch with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and horses from adjacent running track)	Unsuitable for majority of species and is sub-optimal for eel (small ditch with no flow and poor/little assemblage of structural habitat features)	None observed
WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species																												
SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8																																
N	N	N	Y	N	N	N	N	Unsuitable	Sub-optimal for foraging, holt/resting place and commuting (small ditch with likely limited prey source, scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and horses from adjacent running track)	Unsuitable for majority of species and is sub-optimal for eel (small ditch with no flow and poor/little assemblage of structural habitat features)	None observed																												

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D105	SE 64192 51823	~35m north	No access available for survey											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D106	SE 64286 51838	Within the Order Limits	No access available for survey											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D107	SE 64277 51778	Within the Order Limits	No access available for survey											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Reference	Grid reference from closest point from Order Limits	Distance and direction from Order Limits	Description											
D108	SE 64349 51835	~40m southeast	No access available for survey											
			WVHS features present								WVHS	Otter suitability	SPI fish suitability	Invasive plant species
			SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8				
			-	-	-	-	-	-	-	-	-	-	-	-

Annex 8B.4 – Important Hedgerows

Hedgerow	Grid reference	Importance	Sheet number on Figure 8.6 (Volume 5, Document 5.4.8)
HE001	SE 57926 60107	Historic Environment - Important	Sheet 1
HE002	SE 56766 59769	Historic Environment - Important	Sheet 1
HE003	SE 56528 59909	Historic Environment - Important	Sheet 1
HE004	SE 56383 59858	Historic Environment - Important	Sheet 1
HE005	SE 56375 59877	Historic Environment - Important	Sheet 1
HE006	SE 56228 59999	Historic Environment - Important	Sheet 1
HE007	SE 56613 59612	Historic Environment - Important	Sheet 1
HE008	SE 56395 59455	Historic Environment - Important	Sheet 1
HE009	SE 56466 59439	Historic Environment - Important	Sheet 1
HE010	SE 56594 59226	Historic Environment - Important	Sheet 1
HE011	SE 56592 58923	Historic Environment - Important	Sheet 1
HE012	SE 56590 58905	Historic Environment - Important	Sheet 1
HE013	SE 56286 58301	Historic Environment - Important	Sheet 1
HE014	SE 55984 57930	Historic Environment - Important	Sheet 2
HE015	SE 55423 57809	Ecology – Potentially Important	Sheet 2
HE016	SE 55821 57613	Historic Environment - Important	Sheet 2
HE017	SE 56460 56779	Historic Environment - Important	Sheet 2
HE018	SE 56368 56695	Not Important	Sheet 2
HE019	SE 55941 56647	Ecology – Potentially Important	Sheet 2
HE020	SE 56054 56443	Not Important	Sheet 3
HE021	SE 56095 56337	Ecology – Potentially Important	Sheet 3
HE022	SE 56199 55768	Not Important	Sheet 3
HE023	SE 56030 56061	Not Important	Sheet 3
HE024	SE 55311 56091	Historic Environment - Important	Sheet 3
HE025	SE 55430 56997	Historic Environment - Important	Sheet 2
HE026	SE 55425 57100	Historic Environment - Important	Sheet 2
HE027	SE 55396 57127	Historic Environment - Important	Sheet 2

Hedgerow	Grid reference	Importance	Sheet number on Figure 8.6 (Volume 5, Document 5.4.8)
HE028	SE 55402 57199	Historic Environment - Important	Sheet 2
HE029	SE 55176 57051	Not Important	Sheet 2
HE030	SE 54714 56776	Historic Environment - Important	Sheet 2
HE031	SE 54195 56282	Historic Environment - Important	Sheet 3
HE032	SE 54062 56250	Historic Environment - Important	Sheet 3
HE033	SE 53845 55776	Historic Environment - Important	Sheet 3
HE034	SE 54044 55433	Historic Environment - Important	Sheet 3
HE035	SE 54105 55306	Historic Environment - Important	Sheet 3
HE036	SE 54661 54929	Not Important	Sheet 3
HE037	SE 54767 54889	Historic Environment - Important	Sheet 3
HE038	SE 54897 54831	Historic Environment - Important	Sheet 3
HE039	SE 54915 54811	Historic Environment - Important	Sheet 3
HE040	SE 52567 56254	Historic Environment - Important	Sheet 4
HE041	SE 52393 56293	Historic Environment - Important	Sheet 4
HE042	SE 52378 56407	Historic Environment - Important	Sheet 4
HE043	SE 52327 56401	Historic Environment - Important	Sheet 4
HE044	SE 52297 56319	Historic Environment - Important	Sheet 4
HE045	SE 51974 56589	Ecology – Potentially Important	Sheet 4
HE046	SE 51492 56433	Ecology – Potentially Important	Sheet 4
HE047	SE 51418 56409	Historic Environment - Important	Sheet 4
HE048	SE 51315 56313	Historic Environment - Important	Sheet 4
HE049	SE 50992 56234	Historic Environment - Important	Sheet 4
HE050	SE 51002 56207	Not Important	Sheet 4
HE051	SE 51192 56053	Historic Environment - Important	Sheet 4
HE052	SE 51118 55837	Historic Environment - Important	Sheet 4
HE053	SE 514925 5393	Historic Environment - Important	Sheet 4
HE054	SE 51147 54638	Not Important	Sheet 5
HE055	SE 50777 54702	Historic Environment - Important	Sheet 5
HE056	SE 51028 54457	Historic Environment - Important	Sheet 5

Hedgerow	Grid reference	Importance	Sheet number on Figure 8.6 (Volume 5, Document 5.4.8)
HE057	SE 51041 54448	Historic Environment - Important	Sheet 5
HE058	SE 50672 54388	Historic Environment - Important	Sheet 5
HE059	SE 50391 53678	Historic Environment - Important	Sheet 5
HE060	SE 50323 53469	Ecology – Potentially Important	Sheet 5
HE061	SE 49062 52067	Historic Environment - Important	Sheet 6
HE062	SE 49050 52058	Historic Environment - Important	Sheet 6
HE063	SE 48992 52055	Historic Environment - Important	Sheet 6
HE064	SE 49251 51962	Historic Environment - Important	Sheet 6
HE065	SE 49224 51921	Historic Environment - Important	Sheet 6
HE066	SE 49481 51810	Historic Environment - Important	Sheet 6
HR067	SE 49045 50836	Historic Environment - Important	Sheet 6
HE068	SE 49062 50805	Historic Environment - Important	Sheet 6
HE069	SE 48914 50331	Ecology – Potentially Important	Sheet 7
HE070	SE 48638 48964	Historic Environment - Important	Sheet 7
HE071	SE 48925 48439	Historic Environment - Important	Sheet 7
HE072	SE 47954 46665	Historic Environment - Important	Sheet 8
HE073	SE 48452 46027	Historic Environment - Important	Sheet 8
HE074	SE 47649 45031	Historic Environment - Important	Sheet 8
HE075	SE 47612 45002	Historic Environment - Important	Sheet 8
HE076	SE 47501 44507	Historic Environment - Important	Sheet 8
HE077	SE 46923 42815	Historic Environment - Important	Sheet 9
HE078	SE 46856 42552	Historic Environment - Important	Sheet 9
HE079	SE 46266 42420	Historic Environment - Important	Sheet 9
HE080	SE 46467 42212	Historic Environment - Important	Sheet 9
HE081	SE 46287 41936	Historic Environment - Important	Sheet 9
HE082	SE 46407 41818	Not Important	Sheet 9
HE083	SE 46401 41805	Not Important	Sheet 9
HE084	SE 45808 41712	Not Important	Sheet 9
HE085	SE 45796 41720	Historic Environment - Important	Sheet 9

Hedgerow	Grid reference	Importance	Sheet number on Figure 8.6 (Volume 5, Document 5.4.8)
HE086	SE 45430 41955	Historic Environment - Important	Sheet 9
HE087	SE 45627 40876	Historic Environment - Important	Sheet 9
HE088	SE 46432 38155	Historic Environment - Important	Sheet 10
HE089	SE 46114 38043	Historic Environment - Important	Sheet 10
HE090	SE 46154 37942	Historic Environment - Important	Sheet 10
HE091	SE 46462 37988	Historic Environment - Important	Sheet 10
HE092	SE 46386 37801	Historic Environment - Important	Sheet 10
HE093	SE 46733 36981	Historic Environment - Important	Sheet 10
HE094	SE 46722 36956	Historic Environment - Important	Sheet 10
HE095	SE 46976 35119	Historic Environment - Important	Sheet 11
HE096	SE 47840 33184	Historic Environment - Important	Sheet 12
HE097	SE 47043 32182	Historic Environment - Important	Sheet 12
HE098	SE 47172 30889	Historic Environment - Important	Sheet 13
HE099	SE 47219 30876	Historic Environment - Important	Sheet 13
HE100	SE 47168 30858	Historic Environment - Important	Sheet 13
HE101	SE 48403 30402	Historic Environment - Important	Sheet 13
HE102	SE 47535 29902	Ecology – Potentially Important	Sheet 13
HE103	SE 47553 29662	Ecology – Potentially Important	Sheet 13
HE104	SE 48421 29425	Historic Environment - Important	Sheet 13
HE105	SE 48437 29327	Historic Environment - Important	Sheet 13

Annex 8B.5 - Criteria for Defining ‘Important’ Hedgerows

In accordance with the Hedgerow Regulations 1997, a hedgerow or partial length of hedgerow is important if it:

- Has existed for 30 years or more.
- Satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Part II of Schedule 1 of the Regulations regard a hedgerow as being important if it meets one of the following criteria:

Archaeology and history criteria

- 1. The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township; and for this purpose “historic” means existing before 1850.
- 2. The hedgerow incorporates an archaeological feature which is—
 - (a) included in the schedule of monuments compiled by the Secretary of State under section 1 (schedule of monuments) of the Ancient Monuments and Archaeological Areas Act 1979(7); or
 - (b) recorded at the relevant date in a Sites and Monuments Record.
- 3. The hedgerow—
 - (a) is situated wholly or partly within an archaeological site included or recorded as mentioned in paragraph 2 or on land adjacent to and associated with such a site; and
 - (b) is associated with any monument or feature on that site.
- 4. The hedgerow—
 - (a) marks the boundary of a pre-1600 AD estate or manor recorded at the relevant date in a Sites and Monuments Record or in a document held at that date at a Record Office; or
 - (b) is visibly related to any building or other feature of such an estate or manor.
- 5. The hedgerow—
 - (a) is recorded in a document held at the relevant date at a Record Office as an integral part of a field system pre-dating the Inclosure Acts; or
 - (b) is part of, or visibly related to, any building or other feature associated with such a system, and that system—
 - (i) is substantially complete; or
 - (ii) is of a pattern which is recorded in a document prepared before the relevant date by a local planning authority, within the meaning of the 1990 Act, for the purposes of development control within the authority’s area, as a key landscape characteristic.

Wildlife and landscape criteria

- The hedgerow contains a species which is protected under Schedule 1, 5 or 8 of the Wildlife and Countryside Act (1981), or which in some cases is otherwise priority (i.e. Red Data Book species).
- The hedgerow includes the following number of woody species (woody species are defined in Schedule 3 of the Regulations) in approximately one 30m section per 100m of hedgerow (in Northern England, where this site is located, the number of woody species is reduced by one):
 - At least seven woody species.
 - At least six woody species, including either black poplar, large-leaved lime, small-leaved lime or wild service-tree.
 - At least five woody species, and at least four of the following associated features:
 - Associated feature A: A bank or wall which supports the hedgerow along at least one half of its length.
 - Associated feature B: Gaps which in aggregate do not exceed 10% of the length of the hedgerow.
 - Associated feature C: At least one standard tree for hedgerows up to 50m.
 - Associated feature D: At least two standard trees for hedgerows between 50m and 100m.
 - Associated feature E: Average of one standard tree per 50m section for hedgerows greater than 100m.
 - Associated feature F: At least three woodland ground flora species (defined within Schedule 2 of the Regulations) within one metre of the outermost edges of the hedgerow.
 - Associated feature G: A ditch along at least one half of the length of the hedgerow.
 - Associated feature H: Connections scoring four points or more, where a connection with a hedge scores one point, and a connection with a pond or predominantly broadleaved woodland scores two points.
 - Associated feature I: A parallel hedge within 15m of the hedgerow.
- Alternatively, if the hedgerow is adjacent to a Public Right of Way (footpath, bridleway, byway open to all traffic, or a restricted byway), and includes at least four woody species and at least two of the associated features A-G.

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