

Yorkshire GREEN Project

Preliminary Environmental Information Report
Volume three Appendix 8C Extended Phase 1 Habitat
Survey Report
October 2021

nationalgrid

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Executive summary

Purpose of this report

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, hereinafter referred to as 'the Project'.

The Project is being developed by National Grid Electricity Transmission plc (National Grid) and comprises major reinforcement of the electricity transmission system in Yorkshire to improve the transfer of clean energy, providing the capability to manage substantially increased power flows and increased energy demand.

The Project will include the construction of new infrastructure comprising two substations, cable sealing end compounds (CSECs), overhead lines and underground cables, as well as upgrade works to existing infrastructure.

The Scheme is a Nationally Significant Infrastructure Project (NSIP) and requires consent from the Secretary of State via a Development Consent Order (DCO). Wood Group UK Limited (Wood) has been commissioned to provide ecological support to inform the DCO application.

The maximum extent of development for which permission will be sought is indicated by the draft Order Limits, land within which is hereafter referred to as 'the Site'. The Site encompasses an area of approximately 990ha.

1. Introduction

1. Introduction

1.1 Overview of the project

- 1.1.1 Wood Group UK Limited (Wood) has been commissioned by National Grid Electricity Transmission plc (National Grid) to provide ecological support to inform a Development Consent Order (DCO) application for the Yorkshire Green Energy Enablement (GREEN) Project, hereinafter referred to as ‘the Project’.
- 1.1.2 The Project is a proposal by National Grid to upgrade and carry out major reinforcement of the electricity transmission system in Yorkshire. The Project would provide the infrastructure needed to improve the transfer of clean energy to support the Government’s commitment to quadruple the UK’s offshore wind capacity by 2030, tying into the growth forecast for this source of green energy in Scotland and the north-east of England. It would provide the capability to manage significantly increased power flows in Great Britain and increased energy demand, which the Climate Change Committee (CCC) predicts will double by 2050.
- 1.1.3 The most northerly extent of the Project is the proposed tee off (the point at which a transmission circuit is connected to a main circuit), along the existing 400kV 2TW/YR overhead line (Norton to Osbaldwick), located approximately 1.5km north-east of the village of Shipton and approximately 10km north-west of York city centre. The most southerly extent of the Project is the area around the existing Monk Fryston Substation, located approximately 0.5km to the east of the A1 and immediately south of the A63.
- 1.1.4 The new elements of the Project would include a proposed new substation (Overton Substation) approximately 1km south of Shipton by Beningbrough. Three new overhead lines would connect into this substation. To the north a new 400kV overhead line, approximately 2.8km in length, would connect the substation with the existing 400kV 2TW/YR overhead line to the north. To the south two new 275kV overhead lines (1.5km and 2.1km in length) would connect the substation with an existing overhead line further south. Cable sealing end compounds (CSECs) would be installed to allow the new overhead lines to connect to existing overhead lines in the wider area, with two installed approximately 1.5km north-east of Shipton by Beningbrough and two installed approximately 3km south-west of Tadcaster and north-east of the A64/A659 junction. A new substation would also be constructed adjacent to the existing substation at Monk Fryston approximately 2km south-west of Monk Fryston and located off Rawfield Lane, south of the A63.
- 1.1.5 Refurbishment works are also proposed to existing overhead lines in the wider area as part of the Project. These include replacing existing overhead conductors, replacement of pylon fittings, strengthening of steel work and works to pylon foundations. Two overhead lines which currently connect into the existing Monk Fryston substation would be partially realigned to connect into the proposed Monk Fryston substation. In addition, a number of pylons on the overhead line between Monk Fryston and Poppleton (to the north-west of York) would be replaced and the overhead line realigned as follows:
- A 1.5km section of overhead line to the south and south-east of Moor Monkton would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) removed; and

- A 1.45km section of overhead line to the west of the existing Monk Fryston substation and south of South Pollums Farm would be realigned to connect to the proposed Monk Fryston Substation.
- 1.1.6 A 2.35km section of the Monk Fryston to Poppleton overhead line would also be permanently removed.
- 1.1.7 Minor works comprising the installation of a new gantry, cable sealing ends, short section of cable, circuit breaker and isolator at Osbaldwick Substation would also form part of the Project.
- 1.1.8 The above works will be contained within the draft Order Limits shown on **Figure 8.1** in **Volume 4** to the PIER, the area within which is hereinafter referred to as ‘the Site’, encompassing approximately 990ha of land.

1.2 Structure of this report

- 1.2.1 As part of its ecological support during the DCO process, Wood has been commissioned to undertake a desk study and extended Phase 1 habitat survey of the Site.
- 1.2.2 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 to date (**Section 2**); the methods and results of an extended Phase 1 habitat survey (**Section 3**); and identifies any additional surveys or work that may be required to inform the DCO application (**Section 4**). The approach broadly follows the Guidelines for Preliminary Ecological Appraisal (CIEEM)¹.
- 1.2.3 Project information provided by National Grid has been used to identify an appropriate geographical scope for the desk study and extended Phase 1 habitat survey based on an initial assessment of the likely environmental changes associated with construction and operation of the Project. The final Project design remains under development and should any design changes alter any of the survey recommendations outlined in **Section 4** of this report, the relevant consultees would be contacted to seek agreement on these, and additional investigations may be required to ensure that the ecological data remain robust.
- 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) for the Project, since additional data or interpretation may be required to provide a robust characterisation of the ecological features at the Site. However, the information in this report will contribute to the ecological baseline for the Project, in combination with any subsequent additional data gathering which may take place (e.g. protected species surveys).
- 1.2.5 This report forms **Appendix 8C** to the Biodiversity chapter of the Yorkshire Green Preliminary Environmental Information Report (PEIR) (**Chapter 8**) which presents a preliminary assessment of the likely significant effects of the Project on important ecological features. Figures referred to in this extended Phase 1 habitat survey report

¹ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. Second edition.

are provided in **Volume 4** to the PEIR. The PEIR will be shared with consultees as part of the DCO pre-application consultation process.

- 1.2.6 The ecological baseline will, in due course, inform a full EclA to assess the potential effects of the Project. The EclA will be presented in the Biodiversity chapter of an Environmental Statement (ES) which will be prepared as part of the DCO submission, and which will include proposals for biodiversity mitigation, compensation and enhancement as appropriate.
- 1.2.7 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 **Annexe 8C.1**.

2. Desk Study

Desk studies involve the collection and interpretation of existing biodiversity data from various sources. The data provide information on the Site and the surrounding area, and help identify features that may require particular attention during any field surveys.

2.1 Approach

2.1.1 A data-gathering exercise was undertaken in June 2021 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 an initial assessment of the likely environmental changes associated with construction and operation of the Project, and included data within the following areas of search:

- statutory designated biodiversity sites of national and international importance up to 2km of the Site, extended to:
 - 20km for internationally important sites with ornithological interest;
 - 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 within 2km of the Site;
- records of confirmed bat roosts within 5km of the Site;
- existing European Protected Species Mitigation Licences (EPSL) granted within 5km of the Site for bats, and within 2km of the Site for other species;
- legally protected species, SPIs or other conservation-notable species recorded within 2km of the Site; and
- HPis or other conservation-notable habitats recorded within 2km of the Site.

2.1.2 The geographical context of the Site 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.

2.1.3 The sources of desk study information are summarised in **Table 8C.2.1**.

Waterbodies

2.1.4 The location and connectivity of ponds and ditches within an initial search radius of 500m of the Site was determined using Ordnance Survey 1:10k maps, aerial imagery from Google Maps and MAGIC. This was carried out to allow an initial assessment of possible impacts on any local great crested newt (GCN) (*Triturus cristatus*) populations.

This search radius reflects the potential for GCN to utilise terrestrial habitat up to ~500m from their breeding ponds² with respect to the potential for disturbance. Within the supporting notes of the template for Method Statement in support of a GCN mitigation licence, Natural England recommend that ponds within 500m of a development site be assessed for their potential to support GCN if the site habitats are suitable and there are no factors that might reduce the likelihood of GCN accessing the site.

- 2.1.5 However, it can be reasonable to reduce search areas for low impact schemes, usually to ~250m as this is recognised as being towards the upper limit of the distance that most adult GCN typically disperse around breeding ponds³. Therefore, following the initial search for ponds and ditches within 500m of the Site, waterbodies between 250-500m of the Site were scoped out of further assessment where there is unfavourable habitat linkage between the Site and the waterbodies, and good quality terrestrial habitats in the areas surrounding the water body (thereby reducing the likelihood of GCN dispersing to habitats within the Site).

² English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature (now Natural England), Peterborough.

³ Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001). *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

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)**; any **candidate SAC (cSAC)**. The term 'European site' is term 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 (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 a 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.

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 hectads (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 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*; 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 8C 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.) | Magic: www.magic.gov.uk JNCC: http://jncc.defra.gov.uk/page-4 NE: http://publications.naturalengland.org.uk/category/10001 NE: https://designatedsites.naturalengland.org.uk/ |
| 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 | <ul style="list-style-type: none"> • Boundary data | Magic: www.magic.gov.uk |
| Species records | <ul style="list-style-type: none"> • Location data | Local Biodiversity Records Centres: <ul style="list-style-type: none"> • WYES • NEYEDC |

2.2 Desk study results

Designated sites

- 2.2.1 There are 11 statutory designated nature conservation sites within the study area (see **Figure 8.1** in **Volume 4**), with a further 81 non statutory sites⁴ comprising five Local Wildlife Sites (LWS), four Sites of Ecological Importance (SEI), 33 SINC, and eight candidate SINC. The interest features of these sites are summarised in **Table 8C.2.2**.
- 2.2.2 The following sites are particularly relevant to the Project as they are located within the Site:
- Overton Borrowpits SINC;
 - River Ouse Candidate SINC;
 - Moor Lane, Stutton Verges Candidate SINC;
 - Field nr Healaugh Manor Farm Deleted SINC;
 - Disused Quarry, Newthorpe Deleted SINC; and
 - Healaugh Priory Marsh Deleted SINC.
- 2.2.3 Lord's Quarry SINC and Shire Oaks, Healaugh SINC are located immediately adjacent the Site.

Table 8C.2.2 – Designated nature conservation sites within the relevant search areas, and potential effect-pathways

| Site | Location* | Summary of Interest Features |
|---|--------------------|---|
| Statutory designated biodiversity sites of national and international importance up to 2km of the Site boundary, extended to 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 Ramsar | ~6.12km south-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 (<i>Philomachus pugnax</i>) and whimbrel (<i>Numenius phaeopus</i>). |

⁴ 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 are the term given to non-statutory sites in North Yorkshire.

| Site | Location* | Summary of Interest Features |
|---------------------------------|--------------------|--|
| | | <ul style="list-style-type: none"> • Criterion 5: Winter waterfowl assemblage of international importance. • Criterion 6: Peak winter counts of: <ul style="list-style-type: none"> – wigeon (<i>Anas penelope</i>); and teal (<i>Anas crecca</i>). |
| Lower Derwent Valley SPA | ~6.12km south-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; – golden plover (<i>Pluvialis apricaria</i>); – teal; and – wigeon. • The site also qualifies under Article 4.2 by regularly supporting a breeding population of : <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: Bewick's swan, wigeon, teal, golden plover and ruff. |
| Sherburn Willows SSSI | ~0.63km 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 | ~0.79km south-east | <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 | ~1.73km 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>). • M23 – Soft rush (<i>Juncus effusus</i>)/sharp flowered rush (<i>Juncus acutiflorus</i>) – marsh bedstraw (<i>Galium palustre</i>) rush pasture. |

| Site | Location* | Summary of Interest Features |
|---|--------------------|--|
| | | <ul style="list-style-type: none"> • 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 | ~1.73km 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. |
| Clifton Ings And Rawcliffe Meadows SSSI | ~1.81km south-east | <ul style="list-style-type: none"> • MG4 – Meadow foxtail (<i>Alopecurus pratensis</i>) – great burnet (<i>Sanguisorba officinalis</i>) grassland. • MG8 – Crested dogs-tail (<i>Cynosurus cristatus</i>) – marsh marigold (<i>Caltha palustris</i>) grassland. • Population of critically endangered beetle - Tansy beetle (<i>Chrysolina graminis</i>). |
| Heslington Tillmire SSSI | ~3.60km 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 | ~5.71km east | <ul style="list-style-type: none"> • Aggregations of non-breeding birds - Bewick's Swan. • Assemblages of breeding birds – Mixed. |

| Site | Location* | Summary of Interest Features |
|----------------------------------|--------------------|--|
| | | <ul style="list-style-type: none"> • Flowing waters - Type II: slow-flowing, naturally eutrophic lowland rivers, dominated by clays. • Invertebrate assemblage. • Otter. • Outstanding assemblage of native fish. • Outstanding dragonfly assemblage. |
| Derwent Ings SSSI | ~7.60km 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, whimbrel, 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 tall-herb fen. • S5 – Reed sweet grass swamp. • Vascular plant assemblage. |
| Melbourne and Thornton Ings SSSI | ~9.59km 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. |

| Site | Location* | Summary of Interest Features |
|------|-----------|---|
| | | <ul style="list-style-type: none"> • M27 - meadowsweet – 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). • 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 designated biodiversity sites of nature conservation interest within 2km of the Site

| | | |
|--|-----------------|---|
| Overton Borrowpits SINC | Within the Site | 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 willow 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 Site | No citation is available as it has never been formally surveyed or assessed, but the local records centre did inform that lamprey (likely sea lamprey (<i>Petromyzon marinus</i>)), a rare migratory fish is present and is of interest ⁵ . |
| Moor Lane, Stutton verges Candidate SINC | Within the Site | New site, not yet surveyed, no citation available. Survey planned for summer 2021. |
| Lord’s Quarry SINC | ~5m south-east | Never surveyed – no citation available. |
| Shire Oaks, Healaugh SINC | ~10m south | Ancient woodland dominated by oak (<i>Quercus</i> sp), sycamore (<i>Acer pseudoplatanus</i>) and ash. Calcareous |

⁵ Email from Clare Langrisk, NEYEDC to Will Horlock, Wood Assistant Ecologist, on 03 June 2021

| Site | Location* | Summary of Interest Features |
|--|--------------------|---|
| | | pockets are dominated by dog's mercury and some wood avens, enchanter's nightshade and false brome. 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, water plantain and water starwort. |
| Osballdwick Meadow Candidate SINC | ~60m 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. |
| Huddleston Old Wood (Lotherton Woodlands) SINC | ~75m south-west | This site consists of broad-leaved plantations to the south with enclaves of mixed. Sycamore is the most abundant species. |
| 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. |
| Bullen Wood SINC | ~0.14km west | Ancient calcareous woodland dominated by sycamore, beech (<i>Fagus sylvatica</i>), larch 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 (<i>Mercurialis perennis</i>) and false brome (<i>Brachypodium sylvaticum</i>). 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 (<i>Circaea lutetiana</i>) is also frequent and herb-paris (<i>Paris quadrifolia</i>) is notable in the north-east. |
| Crag Wood SINC | ~0.14km south-east | Never surveyed – no citation available. |

| Site | Location* | Summary of Interest Features |
|---|--------------------|--|
| Scrub South West of Low Park Farm SINC | ~0.17km north-east | Citation has not been requested ⁶ . |
| Osbalwick Crossing, Murton Way Candidate SINC | ~0.27km north | Citation has not been requested. |
| Bank on Laith Staid Lane SINC | ~0.40km north | Citation has not been requested. |
| Healaugh Marsh SINC | ~0.45km east | Citation has not been requested. |
| Newthorpe Quarry SINC | ~0.64km west | Citation has not been requested. |
| Newthorpe Farm Grassland and Verge SINC | ~0.77km north-west | Citation has not been requested. |
| Wormstall Wood LWS | ~0.81km south-west | Citation has not been requested. |
| Rawcliffe Ings Dyke SINC | ~0.89km south-east | Citation has not been requested. |
| 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 | ~1.06km north-east | Citation has not been requested. |
| Wilstop Wood and Ditches SINC | ~1.16km north-west | Citation has not been requested. |
| Renshaw Wood, Towton SINC | ~1.18km east | Citation has not been requested. |
| Pond at Betteras Hill Road SINC | ~1.20km north-east | Citation has not been requested. |
| Bramham Park LWS | ~1.26km south-west | Citation has not been requested. |
| Bramham Park SEI | ~1.26km south-west | Citation has not been requested. |

⁶ 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 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 |
|--|--------------------|---|
| Seavy Carr Wood SINC | ~1.27km south-east | Citation has not been requested. |
| Grassland by Cock Beck SINC | ~1.29km south-east | Citation has not been requested. |
| Hartly Wood and Castle Hills LWS | ~1.36km 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 | ~1.37km west | Citation has not been requested. |
| Frog Hall Quarry SINC | ~1.43km south-west | Citation has not been requested. |
| Byram Park (Part in Brotherton) SINC | ~1.45km south | Citation has not been requested. |
| Land adjacent to Cock Beck SINC | ~1.47km south | Citation has not been requested. |
| Hessay Churchyard SINC | ~1.50km south-east | Citation has not been requested. |
| Carr Wood SINC | ~1.52km east | Citation has not been requested. |
| Byram Park SINC | ~1.53km south | Citation has not been requested. |
| Ring Rd Embankment Millfield Lane A1237 SINC | ~1.54km south | Citation has not been requested. |
| Poppleton Glassworks (5-30) SINC | ~1.55km south | Citation has not been requested. |
| Coburnhill Wood LWS | ~1.58km west | Citation has not been requested. |
| Poppleton Ings South – Ditch Candidate SINC | ~1.59km south-east | Citation has not been requested. |
| Bywater Wood SINC | ~1.61km south-east | Citation has not been requested. |

| Site | Location* | Summary of Interest Features |
|--|--------------------|---|
| Copse Meadow, Rawcliffe Ings Candidate SINC | ~1.63km south-east | Citation has not been requested. |
| Stutton Railway Track Candidate SINC | ~1.73km south-east | Citation has not been requested. |
| Fairburn Ings RSPB Reserve | ~1.73km south-west | A former industrial site rich in heritage and an important site for breeding and wintering wildfowl. |
| River Wharfe, Otley & Mid Wharfedale/ Wetherby SEI | ~1.78km west | The river flows west to east from Lob Wood to Thorp Arch. The river's features vary along the route, contributing to habitat diversity along the Wharfe. The site includes many regionally rare aquatic species such as lesser water parsnip (<i>Berula erecta</i>) and water chickweed (<i>Stellaria aquatica</i>). The river also supports a wide range of birds, mammals, invertebrates and fish. Otters (<i>Lutra lutra</i>) and white-clawed crayfish ⁷ (<i>Austropotamobius pallipes</i>) have also been recorded on the site. |
| Town Pond Shirbutt Lane (HY4) SINC | ~1.81km east | Citation has not been requested. |
| Rawcliffe Meadows SINC | ~1.82km south-east | Citation has not been requested. |
| Clifton Ings SINC | ~1.83km south-east | Citation has not been requested. |
| Thorp Arch LWS | ~1.84km north-west | This site is one of the most extensive calcareous grasslands in West Yorkshire. There is a high level of species diversity including the regionally rare bee orchid (<i>Ophrys apifera</i>), ploughman's-spikenard (<i>Inula conyzae</i>) and the largest population of pyramidal orchid (<i>Anacamptis pyramidalis</i>) in West Yorkshire. The Magnesium Limestone Grassland present is a priority national, regional and local BAP habitat. |
| Patefield Wood SINC | ~1.90km north-east | Citation has not been requested. |
| Thorp Arch Trading Estate SEI | ~1.99km north-west | Citation has not been requested. |
| Non-statutory non-designated biodiversity sites of nature conservation interest within 2km of the Site boundary | | |
| Field nr Healaugh Manor Farm Deleted SINC | Within the Site | 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 |

⁷ Signal crayfish dominate the River Wharfe both up and downstream of this location (Environment Agency Wharfe catchment crayfish record map).

| Site | Location* | Summary of Interest Features |
|--|--------------------|--|
| | | (<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 Site | 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 | Within the Site | 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 (<i>Filipendula ulmaria</i>) 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 (<i>Anemonoides nemorosa</i>), wood false brome 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 | ~0.43km north-east | Citation has not been requested. |
| Wood on Whin Lane nr Steeton Hall Deleted SINC | ~0.44km south-east | Citation has not been requested. |
| Moorlands YWT Reserve | ~0.44km south-west | 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 pipistelle (<i>Pipistrellus pygmaeus</i>), Brandt's (<i>Myotis brandtii</i>) and Daubenton's bat (<i>Myotis daubentonii</i>) also recorded on the site. |
| Crow Hill, Lead Hall Farm Deleted SINC | ~0.48km west | Citation has not been requested. |

| Site | Location* | Summary of Interest Features |
|---|--------------------|--|
| Meadow near Hillam Gates Level Crossing Deleted SINC | ~0.50km east | Citation has not been requested. |
| Roadside Verge near Lotherton Park Farm Deleted SINC | ~0.59km 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. |
| Wood near Wingate Hill Farm Deleted SINC | ~0.76km south-east | Citation has not been requested. |
| Sherburn Willows YWT Reserve | ~0.78km south-west | Citation has not been requested. |
| Ledsham Bank YWT Reserve | ~0.79km south-west | The site is situated in a valley on the magnesium limestone, supporting pyramidal, 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. |
| Daniel Hartlet's Wood Deleted SINC | ~0.82km west | Citation has not been requested. |
| Brickyard Pond Deleted SINC | ~0.82km south-east | Citation has not been requested. |
| Copley Lane Quarry Deleted SINC | ~0.91km east | Citation has not been requested. |
| Renshaw Wood Deleted SINC | ~1.00km east | Citation has not been requested. |
| Ringhay Wood Deleted SINC | ~1.00km west | Citation has not been requested. |
| Area around Cock Beck, Mill Lane Deleted SINC | ~1.17km south-east | Citation has not been requested. |
| South of Cock Beck Deleted SINC | ~1.19km west | Citation has not been requested. |

| Site | Location* | Summary of Interest Features |
|---|--------------------|----------------------------------|
| Willow Carr, Cock Bridge Deleted SINC | ~1.21km south-east | Citation has not been requested. |
| Dalton Wood Deleted SINC | ~1.46km south-east | Citation has not been requested. |
| Monk Fryston Churchyard Deleted SINC | ~1.49km north-east | Citation has not been requested. |
| Lower & Upper Woods Deleted SINC | ~1.50km east | Citation has not been requested. |
| The Rein, South of Cock Beck Deleted SINC | ~1.64km south-west | Citation has not been requested. |
| Catterton Rash Deleted SINC | ~1.75km south-east | Citation has not been requested. |
| Pond East of A63 Deleted SINC | ~1.93km north-east | Citation has not been requested. |

Key

* Location relative to Site

Species records

2.2.4 **Table 8C.2.3** provides a summary of the key species records that are dated within the last ten years⁸, principally:

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

⁸ i.e. since 2011; this focuses on those records most likely to be relevant to the Project and the current land-use baseline.

Table 8C.2.3 – Key species records from past ten years

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|---|----------------|--------------------|-------------|------------------------------|
| Mammals | | | | |
| Brandt's bat | 3 | ~1.16km south-east | HR, WCA | LBAP |
| Brown long-eared bat | 24 | ~0.21km south-east | HR, WCA | LBAP |
| Common pipistrelle | 26 | ~0.21km south-east | HR, WCA | LBAP |
| Daubenton's bat | 2 | ~0.76km 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>) | 14 | ~30m south-east | HR, WCA | LBAP |
| Pipistrelle species | 46 | ~30m south-east | HR, WCA | LBAP |
| Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) | 51 | ~30m south-east | HR, WCA | LBAP |
| Unidentified bat | 15 | ~0.21km south-east | HR, WCA | LBAP |
| Additional bat roost records 2-5km from Site (soprano pipistrelle, brown long-eared bat, common pipistrelle, whiskered bat (<i>Myotis mystacinus</i>) and unidentified bat species) | 53 | ~2.28km north-west | HR, WCA | N/A |
| Otter | 23 | Within the Site | HR, WCA | LBAP |
| Water vole (<i>Arvicola amphibius</i>) | 6 | ~0.18km south | WCA | SPI, RL, LBAP |
| Badger | 14 | Within the Site | PBA | N/A |
| Brown hare (<i>Lepus europaeus</i>) | 7 | ~1.60km north-west | - | SPI, LBAP |
| Harvest mouse (<i>Micromys minutus</i>) | 2 | ~0.29km south-west | - | SPI, RL, LBAP |
| Hedgehog (<i>Erinaceus europaeus</i>) | 8 | ~35m north | - | SPI, RL |

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|---|----------------|--------------------|-----------------|------------------------------|
| Reptiles & Amphibians | | | | |
| GCN | 27 | ~0.16km west | HR, WCA | LBAP |
| Grass snake (<i>Natrix natrix</i>) | 1 | ~1.97km east | WCA | SPI |
| Common toad (<i>Bufo bufo</i>) | 8 | ~0.76km west | - | SPI, LBAP |
| Fish | | | | |
| Atlantic salmon (<i>Salmo salar</i>) | 1 | ~1.63km north-west | HR ⁹ | SPI, LBAP |
| Barbel (<i>Barbus barbus</i>) | 2 | ~0.56km north-west | HR | N/A |
| Grayling (<i>Thymallus thymallus</i>) | 2 | ~0.87km east | HR | LBAP |
| Brown/sea trout (<i>Salmo trutta</i>) | 4 | ~25m north-west | - | SPI |
| European eel (<i>Anguilla anguilla</i>) | 6 | ~25m north-west | - | SPI, RL, LBAP |
| Sea lamprey | 1 | ~0.83km north | - | SPI, LBAP |
| Bullhead (<i>Cottus gobio</i>) | 7 | ~25m north-west | - | LBAP |
| Invertebrates | | | | |
| White-clawed crayfish | 2 | ~1.47km west | WCA | SPI, RL, LBAP |
| Tansy beetle | 110 | Within the Site | - | SPI, RL, LBAP |
| Depressed river mussel (<i>Pseudanodonta complanata</i>) | 2 | ~0.59km north | - | SPI, RL, LBAP |
| Cinnabar (<i>Tyria jacobaeae</i>) | 1 | ~1.67km south | - | SPI, LBAP |
| Dark-barred twin-spot carpet (<i>Xanthorhoe faregate</i>) | 1 | ~0.70km south-west | - | SPI |

⁹ Atlantic salmon, barbel and grayling are listed on Schedule 4 of HR which protects these animals from capture or being killed in certain ways. They are not listed on Schedule 2 so are not a European protected species.

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|--|----------------|---------------------|-------------|------------------------------|
| Dot moth (<i>Melanchra persicariae</i>) | 1 | ~0.62km south-west | - | SPI |
| Green-brindled crescent (<i>Allophyes oxyacanthae</i>) | 1 | ~0.62km south-west | - | SPI |
| Oak hook-tip (<i>Watsonalla binaria</i>) | 1 | ~0.70km south-west | - | SPI |
| Rosy rustic (<i>Hydraecia micacea</i>) | 2 | ~0.62km south-west | - | SPI |
| September thorn (<i>Ennomos erosaria</i>) | 1 | ~1.71km north | - | SPI |
| Small phoenix (<i>Ecliptopera silaceata</i>) | 1 | ~0.62km south-west | - | SPI |
| Caddis fly (<i>Ceraclea senilis</i>) | 1 | ~610m south-west | - | Nationally notable |
| Plants | | | | |
| Early gentian (<i>Gentianella anglica</i>) | 1 | ~1.18km south | HR, WCA | SPI |
| Round-headed leek (<i>Allium sphaerocephalon</i>) | 1 | ~1.74km west | WCA | RL |
| Thistle broomrape (<i>Orobanche reticulata</i>) | 1 | ~20m north-east | WCA | SPI, RL |
| Pasqueflower (<i>Pulsatilla vulgaris</i>) | 4 | ~1.10km south-west | - | SPI, RL, LRDB |
| Rare spring-sedge (<i>Carex ericetorum</i>) | 5 | ~1.10km south-west | - | SPI, RL |
| Tubular water-dropwort (<i>Oenanthe fistulosa</i>) | 1 | ~1.89km south-east | - | SPI, RL |
| Autumn gentian (<i>Gentianella amarella</i>) | 7 | ~0.94km west | - | RL |
| Autumn lady's-tresses (<i>Spiranthes spiralis</i>) | 3 | ~1.27 km south-west | - | RL, LRDB |
| Bladder-sedge (<i>Carex intumescense</i>) | 1 | ~1.20km south-east | - | RL |
| Carlina thistle (<i>Carlina vulgaris</i>) | 3 | ~0.94km west | - | RL |

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|--|----------------|--------------------|-------------|------------------------------|
| Common cudweed (<i>Filago vulgaris</i>) | 5 | ~0.94km west | - | RL |
| Common rock-rose (<i>Helianthemum nummularium</i>) | 10 | ~1.27km south-west | - | RL |
| Common valerian (<i>Valeriana officinalus</i>) | 1 | ~1.84km south-west | - | RL |
| Corn mint (<i>Mentha arvensis</i>) | 3 | ~1.20km south-east | - | RL |
| Crosswort (<i>Cruciata laevipes</i>) | 12 | ~0.34km north | - | RL |
| Devil's-bit scabious (<i>Succisa pratensis</i>) | 4 | ~1.02km north-west | - | RL |
| Dyer's greenweed | 3 | ~1.21km south-west | - | RL |
| Eyebright (<i>Euphrasia officinalis</i>) | 2 | ~1.27 south-west | - | RL, LRDB |
| Field garlic (<i>Allium vineale</i>) | 9 | Within the Site | - | RL |
| Field scabious (<i>Knautia arvensis</i>) | 6 | ~0.81km south-east | - | RL |
| Flea sedge (<i>Carex pulicaris</i>) | 1 | ~1.74km west | - | RL |
| Harebell (<i>Campanula rotundifolia</i>) | 5 | ~0.81km south-east | - | RL |
| Heath speedwell (<i>Veronica officinalis</i>) | 4 | ~1.74km west | - | RL |
| Hoary plantain (<i>Plantago media</i>) | 8 | ~1.02km north-west | - | RL |
| Lady's-mantle (<i>Alchemilla mollis</i>) | 1 | ~1.50km west | - | RL |
| Quaking-grass (<i>Briza media</i>) | 14 | ~0.74km north-east | - | RL |
| Ragged-robin (<i>Lychnis flos-cuculi</i>) | 3 | ~1.71km south-east | - | RL |

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|---|----------------|--------------------|-------------|------------------------------|
| Sainfoin (<i>Onobrychis viciifolia</i>) | 3 | ~0.96km south-east | - | RL |
| Sanicle (<i>Sanicula europaea</i>) | 8 | ~0.76km south-east | - | RL |
| Strawberry clover (<i>Trifolium fragiferum</i>) | 2 | ~1.89km south-east | - | RL |
| Tormentil (<i>Potentilla erecta</i>) | 1 | ~1.74km west | - | RL |
| Wild pansy (<i>Viola tricolor</i>) | 1 | ~1.38km west | - | RL |
| Wild strawberry (<i>Fragaria vesca</i>) | 18 | ~0.94km west | - | RL |
| Wood-sorrel | 2 | ~0.76km south-east | - | RL |
| Common meadow-rue (<i>Thalictrum flavum</i>) | 1 | ~1.89km south-east | - | LBAP |
| Cowslip (<i>Primula veris</i>) | 51 | ~5m north | - | LBAP |
| Herb-paris | 1 | ~1.50km west | - | LBAP, LRDB |
| Deadly nightshade (<i>Atropa belladonna</i>) | 1 | ~2.00km west | - | LRDB |
| Pyramidal orchid | 2 | ~1.72km north-west | - | LRDB |
| Small scabious (<i>Scabiosa columbaria</i>) | 1 | ~1.91km west | - | LRDB |
| Birds | | | | |
| Barn owl (<i>Tyto alba</i>) | 8 | ~80m north | WCA | LBAP |
| Kingfisher (<i>Alcedo atthis</i>) | 1 | ~1.52km north-west | WCA | LBAP |
| Peregrine (<i>Falco peregrinus</i>) | 2 | ~1.02km south-east | WCA | - |
| Red kite (<i>Tyto alba</i>) | 9 | ~5m north-east | WCA | RL, LBAP |
| Yellowhammer (<i>Emberiza citronella</i>) | 1 | ~1.27km south-west | - | SPI, RL, LBAP |
| Grey wagtail (<i>Motacilla cinerea</i>) | 1 | ~1.50km north-west | - | RL |

| Species | No. of Records | Closest Record | Protection* | Other Conservation Criteria* |
|--|----------------|--------------------|--------------|------------------------------|
| Mallard | 1 | ~1.82km south-west | - | RL |
| Swallow (<i>Hirundo rustica</i>) | 1 | ~1.40km west | - | LBAP |
| Invasive Non-Native Species | | | | |
| American mink (<i>Neovison vison</i>) | 2 | ~1.12km south-east | Sch 9 of WCA | - |
| Canadian waterweed (<i>Elodea canadensis</i>) | 4 | ~1.20km south-east | Sch 9 of WCA | - |
| Curly waterweed (<i>Lagarosiphon major</i>) | 1 | ~1.94km west | Sch 9 of WCA | - |
| Grey squirrel | 5 | ~0.42km south-west | Sch 9 of WCA | - |
| False-acacia (<i>Robinia pseudoacacia</i>) | 1 | ~1.66km north | Sch 9 of WCA | - |
| Giant hogweed (<i>Heracleum mantegazzianum</i>) | 8 | Within the Site | Sch 9 of WCA | - |
| Himalayan balsam (<i>Impatiens glandulifera</i>) | 51 | Within the Site | Sch 9 of WCA | - |
| Japanese rose (<i>Rosa rugosa</i>) | 3 | ~1.67km south | Sch 9 of WCA | - |
| New Zealand pigmy weed (<i>Crassula helmsii</i>) | 1 | ~1.55km south | Sch 9 of WCA | - |
| Nuttall's waterweed (<i>Elodea nuttallii</i>) | 4 | ~1.20km south-east | Sch 9 of WCA | - |
| Rhododendron | 4 | ~1.28km south-west | Sch 9 of WCA | - |
| American skunk-cabbage (<i>Lysichiton americanus</i>)*** | 1 | ~0.70km south-west | - | - |
| Canadian goldenrod (<i>Solidago canadensis</i>)*** | 1 | ~0.81 south-east | - | - |
| Turkey oak (<i>Quercus cerris</i>)*** | 2 | ~0.34km north | - | - |

Note: Absence of species records does not indicate absence from the Site or local area.

Key*

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

PBA – *Protection of Badgers Act 1992*.

WCA – *Wildlife and Countryside Act 1981 (as amended)*

Existing European Protected Species Mitigation Licences (EPSL), and GCN Class Survey Licence Returns

2.2.5 The desk study identified 25 EPSL for bat, two EPSL for GCN, and one EPSL for otter. Thirteen GCN class survey licence returns are located on or within approximately 2km of the Site. These are summarised in **Table 8C.2.4**. The location of these records relative to the Project is shown on **Figure 8.4** in **Volume 4**.

Table 8C.2.4 – Key species records from past ten years

| Species | Year | Record Type | Grid Reference | Distance and Direction from the Site | Notes |
|---------|------------------------------------|-------------|----------------|--------------------------------------|---|
| Bat | 2010-2012 | EPSL | SE 4730 4649 | ~530m south-west | EPSM2010-2217; brown long-eared bat; destruction of a resting place |
| Bat | 2017-2018 | EPSL | SE 5771 5871 | ~0.84km south-west | 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 |
| Bat | 2012-2014 | EPSL | SE 4751 2812 | ~1.1km south-west | EPSM2012-5102; common pipistrelle; destruction of a resting place |
| Bat | 2012-2014 (covers two licences) | EPSL | SE 4240 4211 | ~1.33km west | EPSM2013-6199; EPSM2012-4628; soprano pipistrelle; destruction of resting place |
| Bat | 2013-2015 | EPSL | SE 4710 2781 | ~1.5km south-west | EPSM2013-6358; common and soprano pipistrelle and brown long-eared bat; |

| Species | Year | Record Type | Grid Reference | Distance and Direction from the Site | Notes |
|---------|--------------------------------------|-------------|----------------|--------------------------------------|--|
| | | | | | destruction of a resting place |
| Bat | 2014-2021 (covers three licences) | EPSL | SE 4480 4493 | ~1.53km 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 | 2017 | EPSL | SE 5080 5012 | ~1.54km 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 | 2015-2020 | EPSL | SE 4510 4611 | ~1.73km north-west | 2014-5878-EPS-MIT; common pipistrelle; destruction of a resting place |
| Bat | 2013-2015 | EPSL | SE 4500 3087 | ~1.90km west | EPSM2012-5319; soprano pipistrelle and brown long-eared bat; destruction of a resting place |
| Bat | 2016-2021 | EPSL | SE 4487 4630 | ~2km north-west | 2016-24939-EPS-MIT; 2016-24939-EPS-MIT-1; common and soprano pipistrelle; damage of resting place; destruction of resting place |
| Bat | 2012-2014 | EPSL | SE 6230 5892 | ~2.53km 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 Site | Notes |
|----------------|-------------|--------------------|-----------------------|---|--|
| Bat | 2015-2019 | EPSL | SE 5059 3670 | ~3.22km east | 2014-4918-EPS-MIT; common pipistrelle; destruction of a resting place |
| Bat | 2010-2012 | EPSL | SE 6098 5612 | ~3.3km south-east | EPSM2010-1693; common pipistrelle; destruction of a resting place |
| Bat | 2013-2014 | EPSL | SE 4471 2800 | ~3.42km south-west | EPSM2011-2852; common pipistrelle, brown long-eared bat and Daubenton's bat; 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 | 2014-2020 | EPSL | SE 4350 2891 | ~4.02km 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 | ~4.07km south-east | EPSM2013-5983; brown long-eared bat; destruction of a resting place |
| Bat | 2010-2011 | EPSL | SE 5288 2668 | ~4.18km south-east | EPSM2009-1563; brown long-eared bat; impact on a breeding site; destruction of a breeding site; destruction of a resting place |
| Bat | 2014-2015 | EPSL | SE 5371 4801 | ~4.27km east | 2014-901-EPS-MIT; common pipistrelle; |

| Species | Year | Record Type | Grid Reference | Distance and Direction from the Site | Notes |
|---------|-----------|-------------|----------------|--------------------------------------|--|
| | | | | | Natterer's bat and soprano pipistrelle; destruction of a resting place |
| Bat | 2017 | EPSL | SE 5379 4778 | ~4.34km east | 2016-27078-EPS-MIT; common pipistrelle and Natterer's bat; 2027-2017; destruction of a resting place |
| Bat | 2012 | EPSL | SE 5150 4173 | ~4.35km south-east | EPSM2011-3498; common pipistrelle and Natterer's bat; destruction of a resting place |
| Bat | 2016 | EPSL | SE 5849 6472 | ~4.37km north-east | 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 | ~4.68km 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 |
| Bat | 2017-2030 | EPSL | SE 6001 5190 | ~4.88km south-east | 2017-31011-EPS-MIT; common pipistrelle; impact on breeding site; damage of breeding site; destruction of a resting place |
| Bat | 2013-2014 | EPSL | SE 6039 5220 | ~5.00km south-east | EPSM2013-6327; common pipistrelle; destruction of a resting place |

| Species | Year | Record Type | Grid Reference | Distance and Direction from the Site | Notes |
|----------------|-----------------------------------|------------------------------|-----------------------|---|---|
| GCN | 2016 | Class survey licence returns | SE 5128 5680 | ~15m north-east | GCN present – possibly P114 |
| GCN | 2015-2017 (covers three licences) | EPSL | SE 4591 4559 | ~0.92km north-west | 2015-11361-EPS-MIT-1; 2015-11361-EPS-MIT-2; 2015-11361-EPS-MIT; damage of resting place; destruction of resting place |
| GCN | 2015 | Class survey licence returns | SE 4451 4141 | ~0.19km south-east | GCN present – possibly P232 |
| GCN | 2014 | Class survey licence returns | SE 5930 5990 | ~0.27km north | GCN present – possibly D8 |
| GCN | 2015 | Class survey licence returns | SE 6469 5220 | ~0.48km north-east | GCN present – possibly D155 |
| GCN | 2017 | Class survey licence returns | SE 5189 5411 | ~0.90km south-east | GCN present |
| GCN | 2014 | Class survey licence returns | SE 5899 5739 | ~1.37km south | GCN present |
| GCN | 2017 | Class survey licence returns | SE 5710 5390 | ~1.56km south | GCN present |
| GCN | 2014 | Class survey licence returns | SE 5899 5720 | ~1.57km south | GCN present |
| GCN | 2015 | Class survey | SE 5709 5380 | ~1.65km south | GCN present |

| Species | Year | Record Type | Grid Reference | Distance and Direction from the Site | Notes |
|---------|---------------------------------|------------------------------|----------------|--------------------------------------|--|
| | | licence returns | | | |
| GCN | 2014 | Class survey licence returns | SE 5709 5380 | ~1.69km south | GCN present |
| GCN | 2013-2020 (covers six licences) | EPSL | SE 5710 5390 | ~1.78km south | 2014-146-EPS-MIT; 2014-146-EPS-MIT-1; 2014-146-EPS-MIT-2; 2014-146-EPS-MIT-3; 2014-146-EPS-MIT-4; EPSM2012-4512; damage of resting place; destruction of resting place |
| GCN | 2016 | Class survey licence returns | SE 5750 5370 | ~1.90km south-east | N/A |
| GCN | 2014 | Class survey licence returns | SE 5909 5681 | ~1.96km south | N/A |
| GCN | 2016 | Class survey licence returns | SE 5750 5360 | ~1.99km south-east | N/A |
| Otter | 2013 | EPSL | SE 4771 4409 | ~180m north-east | EPSM2012-5196; destruction of a resting place |

Habitats and features

Site context

2.2.6 A review of freely-available web-based aerial photography shows that the Site is 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.

2.2.7 These features provide suitable habitat linkages to and around the Site for a range of species including but not limited to GCN, bats, water voles and badgers. The Site appears unexceptional at the landscape scale, supporting a similar range of habitats and features.

Notable habitats and networks

2.2.8 A review of the MAGIC website identified the following notable habitat types within approximately 2km of the Site (see **Figure 8.2** in **Volume 4**):

- Ancient woodland (semi-natural and replanted), the closest parcel being within the Site;
- deciduous woodland¹⁰, the closest parcel being within the Site;
- traditional orchard, the closest parcel being within the Site;
- coastal floodplain grazing marsh, the closest parcel being within the Site;
- good quality semi-improved grassland, the closest parcel being within the Site;
- lowland fens, the closest being within the Site;
- open mosaic habitats on previously developed land (draft) (present within the Site);
- wood pasture and parkland (closest ~0.71km north of the Site); and
- lowland calcareous grassland, the closest being approximately 0.8km south-west of the Site; and

Waterbodies

2.2.9 Ponds and ditches within the 250m search area are shown on **Figure 8.3** in **Volume 4**.

2.2.10 The initial search identified 473 waterbodies (318 ponds and 155 ditches) within 500m of the Site which are potentially suitable for GCN. Of these ponds:

- 136 waterbodies have been **scoped out** of further assessment at the desk study stage:
 - P83 and D31 are scoped out as they are separated from the Site by the River Ouse which is likely to be a barrier to GCN dispersal;
 - 120 waterbodies were scoped out due to being located between 250-500m from the Site and given the lack of connective habitat to the Site and/or better quality terrestrial habitat closer to the waterbody than within the Site; and

¹⁰ 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 with 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 truth the woodland parcels it is unknown whether those habitats recorded within the Site are considered to qualify as either Section 41 or LBAP habitat.

- Ponds P182a-P182j and P182l-P182o, were scoped out due to being fisheries¹¹ and therefore unsuitable for GCN.
- 336 waterbodies (227 ponds and 109 ditches) were **scoped in** to be assessed further for their potential to support GCN during the extended Phase 1 habitat survey (see **Section 3**).

¹¹ Labelled as 'fish ponds' on Google Earth [Accessed 11 August 2021].

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 Site and a 50m surrounding buffer (where accessible), hereafter referred to as the ‘survey area’.
- 3.1.2 The buffer accounts for the potential for ecological features occurring outside of the Site 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).
- 3.1.3 The survey area for potential GCN waterbodies was extended to a 250m buffer surrounding the Site. As noted in **Section 2.1** and **2.2**, this distance reflects the potential for GCN to utilise terrestrial habitat up to ~250m from their breeding ponds/ditches and that waterbodies within 250-500m of the Site were scoped out of further consideration.

3.2 Methods

- 3.2.1 A Phase 1 habitat survey¹² of the survey area (where access was permitted and possible) was undertaken by Wood ecologists during 2021 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; and
 - 05 July – 08 July 2021.
- 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 a Target Note (TN; see **Annex 8C.2**). As the standard Phase 1 habitat survey methodology is largely concerned with vegetation communities only, the survey was ‘extended’ in accordance best practice guidance¹³ to include the following within the survey area (subject to access):

¹² Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit [online] Available at: <https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a> [Accessed 11 August 2021].

¹³ Institute of Environmental Assessment (1995). Institute of Environmental Assessment: Guidelines for Baseline Ecological Assessment. London: Taylor & Francis.

- preliminary searches for evidence of protected or conservation-notable species/species-groups (including, but not limited to: bats; GCN; 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 1997 (although note that formal surveys in this respect were not undertaken); and
- 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 at the Site.
- habitats present according to the UK Habitat Classification System and preliminary information on habitat condition to assist with Environmental Gain calculations¹⁴.

3.2.3 The search and assessment methods used for key species and species groups are summarised in **Table 8C.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 No preliminary searches for evidence of dormice or white-clawed crayfish/suitable habitat for these species were carried out as the Site is outside the known range for these species^{15,16}.

Table 8C.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 on the site 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; • 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> |

¹⁴ UK Habitat Classification data and opportunities for Environmental Gain will be reported under separate cover. It should be noted that information gathered at this stage will only provide an indication of the potential for Environmental Gain as calculations will be dependent on final scheme design and a detailed assessment of habitat condition.

¹⁵ 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.

¹⁶ Environment Agency (2020) Yorkshire Area Biosecurity Protocol – Crayfish Distribution Maps.

| Species | Methods |
|---------------|---|
| GCN | Ponds were assessed for their suitability to support GCN using the Habitat Suitability Index (HSI) ¹⁷ . The suitability of terrestrial habitats for GCN was also assessed, including the accessibility of terrestrial habitat within the Site to GCN that may be associated with waterbodies outside the Site. |
| Otters | 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 waterbodies) or feeding remains was noted, subject to access and H&S considerations for working near watercourses. |
| Water voles | The suitability for water voles was assessed using the Water Vole Habitat Suitability index (WVHS) ¹⁸ and taking into account factors within the Water Vole Mitigation Handbook ¹⁹ . 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. |
| Reptiles | 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 casual observations or encounters although possible refugia such as boards or logs were examined for any evidence of use by reptiles. |
| Badger | Evidence of badger activity (including setts, badger paths, foraging marks, dung pits and hair) was noted. |
| Other species | 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

3.2.5 The survey had the following principal constraints:

¹⁷ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*).

¹⁸ Harris J, Markwell H & Raybould B 2009. A Method for Assessing Water Vole Habitat Suitability. In Practice, IEEM

¹⁹ Dean, R. Strachan, D. Gow, and R. Andrews. The Water Vole Mitigation Handbook. London: The Mammal Society. 2016.

- At the time of writing the extended Phase 1 habitat survey is still on-going with approximately two thirds of the survey area having been surveyed. No surveys have been carried out either at or surrounding Osbaldwick Substation.
- The survey results represent an ecological snapshot of the Site 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 the Site to support protected and priority species which may be present in relation to the Site's location and the type and suitability of habitats present.
- At the time of writing, access has not been granted to approximately one third of land within the survey area. However, considering the survey information available from accessible land parcels, a review of satellite imagery of inaccessible land parcels, and the results of the desk study, the survey results obtained for areas of accessible land to date are likely to be broadly representative of land not yet accessed, with arable land as the dominant habitat type present.
- Access to the interior of Site structures such as residential and commercial buildings and outbuildings has not been possible. However, the Project is unlikely to impact on any buildings and therefore it is considered that this constraint would not affect the validity or robustness of the survey or its conclusions.
- Access has not yet been possible to a number of ponds and ditches within 250m of the Site and therefore HSI assessments have not taken place at these waterbodies.

3.2.6 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 to date. Further survey work is planned as access agreements are obtained and this report will be updated accordingly as further data is collated.

3.3 Results

3.3.1 Extended Phase 1 habitat surveys are intended to inform the design and delivery of a project through the early identification of potential ecological constraints and additional survey or further work requirements. They do not necessarily provide a comprehensive ecological baseline for the Site, and additional investigations will often be required to establish the presence/likely absence of some protected or conservation-notable species within the site or its surroundings, or the value of the Site for certain biodiversity features.

3.3.2 A glossary of project specific technical terms and abbreviations is provided as part of the PEIR. Note that species are referred to by their common names followed by their binomens (scientific names) when used for the first time in this report text. A separate list of binomens is provided in **Annex 8C.1**.

3.3.3 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 the Site; relative suitability of the habitats in a local context; etc.) moderated by professional experience of similar schemes and habitats.

Site habitats

3.3.4 The Site and survey area habitats are illustrated on **Figure 8.3** in **Volume 4** with descriptions of the TNs provided in **Annex 8C.2**. The main Site habitats are broadly as follows:

- The survey area is dominated by arable fields with field margins and bound by hedgerows.
- Parcels of woodland are scattered throughout the survey area.
- Dense and scattered scrub is common throughout the survey area.

3.3.5 A summary of the Site habitats, and their potential to qualify as HPIs is provided in **Table 8C.3.2**. The habitats most sensitive to negative effects as a result of the Project are:

- Semi-natural broadleaved woodland;
- neutral semi-improved grassland; and
- hedgerows along field boundaries.

Table 8C.3.2 Summary of Site habitats

| Habitats | Summary | HPI* |
|------------------------------------|---|--|
| Woodland: Semi-natural broadleaved | <p>Parcels of semi-natural broadleaved woodland dominated by semi-mature and mature trees exist throughout the survey area 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 (<i>Geum urbanum</i>), bluebell, dog's mercury and cleavers (<i>Galium aparine</i>) as the usual dominant species.</p> <p>Semi-natural broadleaved woodland is present at Shire Oaks, Healaugh SINC, comprising semi mature to mature sycamore and ash, with some shrub layer including field maple (<i>Acer campestre</i>), hawthorn, and hazel (<i>Corylus avellana</i>). 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 citation.</p> <p>The desk study identified parcels of lowland mixed deciduous woodland and</p> | Potentially (lowland mixed deciduous woodland) |

| Habitats | Summary | HPI* |
|----------------------------------|---|-----------------------------------|
| Woodland: Broadleaved plantation | <p>ancient woodland within the Site/survey area, for which this habitat may qualify.</p> <p>Parcels of land with immature and semi-mature broadleaved plantation woodland are present and scattered throughout the survey area. 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 (<i>Betula pendula</i>), lime (<i>Tilia x europaea</i>), ash, alder (<i>Alnus glutinosa</i>), 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 (<i>Hedera helix</i>), cleavers, dog's mercury, common nettle, and bramble ground flora; Himalayan balsam is also present in numerous woodland parcels.</p> <p>Overton Borrowpits SINC consists of two borrow pits either side of the railway. 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</p> | Potentially (traditional orchard) |

| Habitats | Summary | HPI* |
|---------------------------------|--|------|
| Woodland: Mixed plantation | <p>Japanese knotweed are present within the SINC.</p> <p>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. Ground flora is dominated by common nettle, hogweed (<i>Heracleum sphondylium</i>), and cleavers.</p> <p>The desk study identified two parcels of traditional orchard priority habitats within the survey area, of which both are within the Site (~40m south of XC514 and span YR001A-YR002); no orchard was identified during the extend 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. The second area span YR001A-YR002 is yet to be surveyed.</p> | No |
| Woodland: Coniferous plantation | <p>A land parcel towards the north of the Project contains coniferous plantation woodland managed commercially as Christmas tree farms with regular felling. Another area of coniferous plantation is present south-east of XC455 with pine</p> | No |

| Habitats | Summary | HPI* |
|-------------------------------|--|--|
| Grassland: Amenity | <p>dominate and planted in lines. 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. Larger areas of plantation that extend into the survey area are located to the north of XCP002 and west of XCP007C and could be used commercially.</p> | No |
| Grassland: Improved | <p>Improved grassland is present within the survey area 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>).</p> <p>The desk study identified parcels of coastal floodplain and grazing marsh within the Site/survey area, for which this habitat may qualify.</p> | Potentially (coastal floodplain and grazing marsh) |
| Grassland: Poor semi-improved | <p>Poor semi-improved grassland fields occur throughout the survey area. 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-</p> | Potentially (coastal floodplain and grazing marsh) |

| Habitats | Summary | HPI* |
|----------------------------------|--|---|
| Grassland: Neutral semi-improved | <p>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>The desk study identified parcels of coastal floodplain and grazing marsh within the Site/survey area, for which this habitat may qualify.</p> | Potentially (lowland meadows and/or coastal floodplain and grazing marsh) |
| | <p>Areas of neutral semi-improved grassland with a moderate to high diversity of grasses and wildflowers exist in localised patches including an open area surrounding a pond (P85) in Overton Borrowpits SINC, within Field nr Healaugh Manor Farm deleted SINC, Moor Lane, Stutton verges candidate SINC and to the north of XC498 around Cock Beck.</p> <p>A waterbody is located within an open glade within the western burrow 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, birds-foot trefoil (<i>Lotus corniculatus</i>), horsetail (<i>Equisetum</i> sp.), buttercup, sedge, and rush along the edge of the waterbody.</p> <p>No citation is available for Moor Lane, Stutton Verges candidate SINC, however during the extended Phase 1 habitat survey the four verges were recorded as neutral semi-improved</p> | |

| Habitats | Summary | HPI* |
|----------|--|------|
| | <p>grassland due to the diversity of grasses, wildflowers and herbs. Species present include cock's foot, Yorkshire fog, red campion (<i>Silene dioica</i>), hogweed, buttercup, vetch, cinquefoil (<i>Potentilla reptans</i>), orchids (bee and pyramidal), crosswort, creeping thistle, forget me not (<i>Myosotis</i> sp.), white clover (<i>Trifolium repens</i>), vetch, daisy (<i>Bellis perennis</i>), black medick, ribwort plantain (<i>Plantago lanceolata</i>), birds foot trefoil, and colts foot (<i>Tussilago farfara</i>). A sign board at TN57 indicates this is an important wildlife corridor and includes a species list with additional species such as early purple orchid, common broomrape (<i>Orobanche purpurea</i>), and common spotted orchid.</p> <p>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 (P214) in the south of the deleted SINC. Species present include Yorkshire fog and meadow foxtail dominant, with false-oat grass, meadowsweet, sedges, rushes, yellow flag iris (<i>Iris pseudacorus</i>), 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.</p> <p>An area to the north of around Cock Beck and east of XC496 and XC497 is identified as 'good quality grassland' non-priority habitat on MAGIC; following the extended Phase 1 habitat survey, large parts of this area is considered to be poor semi-improved grassland, although an area immediately adjacent</p> | |

| Habitats | Summary | HPI* |
|-------------------|--|--|
| Grassland: Marshy | <p>the Cock Beck is considered neutral semi-improved grassland.</p> <p>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 survey area such to the south of XCP001, east of XC466/north of XC467, east of XC472, immediately north-west of XC482, and span XC518-519.</p> <p>The desk study identified parcels of coastal floodplain and grazing marsh within the Site/survey area, for which this habitat may qualify.</p> <p>Marshy grassland is rare within the Site, being located predominately within Overton Borrowpits SINC and Healaugh Priory Marsh deleted SINC and in a field north of the River Ouse (TN20). These areas contain extensive swathes of habitat dominated by species such as meadowsweet, with sedges, 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, and which appeared to be dominated by meadowsweet during the survey.</p> <p>Towards the centre of Healaugh Priory Marsh deleted SINC, 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.</p> <p>Although reed canary grass can be indicative of swamp habitat (swamp habitat may have existed previously - an older citation from 1998 mapped some areas of swamp), 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</p> | Potentially (lowland fens and/or coastal floodplain and grazing marsh) |

| Habitats | Summary | HPI* |
|-----------|--|-----------------|
| Hedgerows | <p>year. Also, given that meadowsweet was recorded to be dominant during the extended Phase 1 habitat survey, it is therefore 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 parcels of lowland fen HPI within/adjacent to the Site at Overton Borrowpits SINC and Healaugh Priory Marsh deleted SINC; the extended Phase 1 habitat survey results also indicate this HPI may be present at these locations.</p> <p>Hedgerows are common throughout the survey area, typically bounding fields. There is a mix of species-poor and rich hedgerows, intact and defunct hedgerows, and some hedgerows have trees, all with varying levels of management. Shrub species typically comprise hawthorn, blackthorn and elder, with other species such as oak, dog rose (<i>Rosa canina</i>), 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>The extended Phase 1 habitat survey identified hedgerow HPI within the Site/survey area.</p> | Yes (hedgerows) |

| Habitats | Summary | HPI* |
|------------------------|--|---|
| Ponds | <p>The desk study and extended Phase 1 habitat survey to date have identified 115 ponds within the survey area; of these 57 ponds are within the Site. These vary in shape and size, but there are no particularly large waterbodies (for example large drinking water reservoirs) with the vast majority being less than a hectare in extent. All these ponds are considered potentially to fulfil the criteria as HPI²⁰.</p> | Potentially (may meet 'Ponds' priority habitat criteria depending on species supported) |
| Watercourses | <p>The desk study and extended Phase 1 habitat survey identified 14 watercourses within the survey area, of which eight were accessible during the field survey. Several major watercourses bisect the survey area, principally the River Ouse (north-west of Nether Poppleton), the River Wharfe (north-west of Tadcaster, a tributary of the Ouse) and Cock Beck (north-west of Saxton, itself a tributary of the Wharfe). Also of note within the survey area are several other watercourses which ultimately form tributaries of the River Ouse including Hurns Gutter, The Foss, Carr Dike and Bishop Dyke. Detailed descriptions of watercourses are given in Annexe 8C.4.</p> <p>There is no citation available for River Ouse candidate SINC, but Himalayan balsam was recorded along the banks during the extended Phase 1 habitat survey.</p> <p>A number of wet ditches with flowing water are also present (see Ditches: Running water).</p> | Potentially (Rivers) |
| Ditches: Running water | <p>Ten of the accessible ditches contained running water, comprising a smooth flow and the banks were vegetated usually with grass, herbs and scrub. Detailed descriptions of these are within Annexe 8C.4.</p> | No |
| Ditches: Dry | <p>Twenty-seven ditches were dry at the time of survey. The majority of dry</p> | No |

²⁰ 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.

| Habitats | Summary | HPI* |
|---------------------------|---|------------------------------------|
| Dense and scattered scrub | <p>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> <p>Dense and scattered scrub can often be found around the perimeter of agricultural/grassland field boundaries. There are also relatively extensive areas of dense scrub interspersed throughout the survey area, particularly in association with disturbed habitats such as existing and former quarries. Scrub species include bramble, hawthorn, blackthorn and elder. Buddleia (<i>Buddleia davidii</i>) is common at Jackdaw Quarry (TN58).</p> <p>Grey willow scrub is dominant in the damp base of the western pit of Overton Borrowpits SINC, 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>Disused Quarry, Newthorpe deleted SINC has not been surveyed as part of the extended Phase 1 habitat survey but the citation indicates the disused quarry supports scrub and tall ruderal vegetation which has outcompeted the initial limestone (calcareous) flora, which exists in scattered patches comprising tor grass and upright brome.</p> <p>The desk study identified a parcel of open mosaic habitat on previously developed land (draft) at Jackdaw Quarry (TN58) where scrub may form a component.</p> | No |
| Arable | <p>The dominant habitat type throughout the survey area is arable land. The arable land is in varying states and utilised for a variety of crops including corn and potato. Many arable fields throughout the survey area had been recently planted at the time of survey.</p> | Potentially (arable field margins) |

| Habitats | Summary | HPI* |
|---------------------------|---|------|
| Ephemeral/short perennial | <p>Fields are generally large and extensive creating 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. This type of habitat is widespread within the local area.</p> <p>Some arable margins may meet the criteria for the arable margin HPI.</p> | No |
| Tall ruderal | <p>Tall ruderal vegetation is present throughout the survey area, 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) at Jackdaw Quarry (TN58) where tall ruderal vegetation may form a component.</p> | No |
| Introduced shrub | <p>Small areas of introduced shrub are present throughout the survey area, largely associated with residential areas</p> | No |

| Habitats | Summary | HPI* |
|-----------------|---|------|
| | with shrubs such as leylandii (<i>Cupressus</i> × <i>leylandii</i>) and cherry laurel (<i>Prunus laurocerasus</i>) planted as hedgerows. | |
| 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 survey area 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 survey area. | No |
| Hardstanding | Hardstanding is mostly associated with roads, paving and residential/farm/commercial yards and is scattered throughout the Site. | No |
| Buildings | There are a range of residential, farm and commercial buildings scattered throughout the survey area. | No |

* Habitats meeting the UKBAP 'Priority Habitat' criteria²¹ (Maddock 2011); 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

3.3.6 The following sections summarise the evidence of protected species found during the field survey, and the suitability of habitats within the survey area 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 protected species surveys.

Bats

Roosting

3.3.7 The extended Phase 1 habitat survey did not include detailed roost inspections, although some buildings, individual trees and blocks of woodland within the survey area 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 (TN58) 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 TN30-32 (hibernation

²¹ Maddock, A. (2011). UK Biodiversity Action Plan; Priority Habitat Descriptions

box) also provide roosting opportunities. However, in a local context the Site 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

3.3.8 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 within the survey area 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 ecotones 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/waterbodies. Habitat in these locations is considered to have high suitability for commuting and foraging bats, though the majority of habitat within the Site and 50m buffer is on balance, considered to have moderate suitability²².

GCN

3.3.9 Following the desk study (see **Section 2.2**) 336 waterbodies (227 ponds and 109 ditches) within 250m of the Site were scoped in for further assessment during the extended Phase 1 habitat survey. A further 15 ponds and 15 ditches were recorded during the extended Phase 1 habitat survey, i.e. a total of 366 waterbodies were scoped in at this point distributed along the length of the Site, but with a higher concentration towards the northern half of the Site. Of these, 139 ponds and 70 ditches were accessible during the extended Phase 1 habitat survey (see **Section 3.1 – Constraints**).

3.3.10 HSI scores for the ponds and ditches which were accessible during the survey are provided in **Annexe 8C.3** and summarised below. All ponds and ditches assessed as having 'below average' suitability or above are scoped in for GCN presence/likely absence surveys (see **Section 4.2**), unless stated otherwise below.

Ponds

- One pond has good suitability for breeding GCN;
- 18 ponds have average suitability;
- 60 ponds have below average suitability;
- 31 ponds have poor suitability;
- Three ponds were scoped out due to being fishing lakes; and
- 26 ponds were either dry (six ponds) at the time of survey or were not present on the ground (20 ponds).

²² 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.

Ditches

- One ditch has good suitability for breeding GCN;
- Three ditches have average suitability;
- 12 ditches have below average suitability;
- 11 ditches have poor suitability;
- 32 ditches were found to be dry (27 ditches) at the time of survey or were not present on the ground (5 ditches);
- 10 of the ditches surveyed that held water were deemed unsuitable for GCN due to a flowing water, and are consequently scoped out of further surveys; and
- One ditch was considered unsuitable for GCN due to shallow heavily polluted water.

Terrestrial habitat

3.3.11 GCN spend most of their time in terrestrial habitats, either foraging, resting or hibernating. They return to ponds/other waterbodies to breed in the spring (broadly from around mid-March to mid-June, although this is strongly dependent on weather conditions). They will cross most habitats when migrating (including amenity grassland, hardstanding and roads) but tend to spend most of their time foraging in structurally 'complex' habitats – such as rough grassland, scrub, woodland, hedgerows. They will hibernate or seek refuge in a range of places, including mammal burrows or rubble and vegetation piles, but will generally make use of any small voids or crevices that provide protection – this can include under concrete slabs, within fissures in hardstanding, or alongside structures such as fenceposts. As a result, rubble/spoil piles and other construction materials are often attractive to this species. The most extensive habitats on Site are either unsuitable or unfavourable to GCN, namely arable and pasture fields which were close grazed, although areas of favourable terrestrial habitats are present across the Site and which regularly bound these unsuitable/unfavourable habitats including scrub, hedgerows, woodland edge and tussocky grasslands, and overgrown dry ditches which are suitable for foraging, dispersal, refuging and hibernating.

Otter

3.3.12 Otter footprints were recorded at TN39 and TN40 along The Foss, potential otter prints along Hurns Gutter (TN06), and an otter spraint was observed at TN25 along River Ouse; The Foss and Hurns Gutter are a 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 mink, although not recently.

3.3.13 The dominant habitat within the survey area (arable) is unsuitable for otter, however, the River Ouse, the River Wharfe and Cock Beck provide optimal habitat for foraging, commuting, holt creation and resting place, along with smaller tributaries with plentiful bankside cover such as The Foss. Ditches throughout the survey area 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 not suitable for foraging. A detailed description of watercourses and ditches, including their suitability for otter is provided within **Annex 8C.4**. Stocked fisheries within the survey area may also offer suitable foraging habitat

for otter, depending on distance and connectivity to watercourses and any deterrents (such as fencing) which may be in place.

Water vole

- 3.3.14 There are 94 watercourses and ditches within the survey area (based on the OS 1:10k mapping; see **Section 2.2.** and **Figure 8.3** in **Volume 4**, of which 59 watercourses and ditches were 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 D96 in close proximity to XC458.
- 3.3.16 Of the 59 watercourses and ditches assessed, five were not present on the ground. A summary of the water vole habitat assessment for the remaining accessible watercourses/ditches is detailed in **Annex 8C.4** and summarised below:
- 15 watercourses/ditches were considered optimal to support water vole by the WVHS method.
 - D96 and WC18 which were assessed to be optimal by the WVHS were dry at the time of survey. Potential vole feeding evidence was recorded along D96 while WC18 is connected to WC17 which contained water and was also assessed to be optimal for water vole. Therefore, D96 and WC18 are considered unsuitable to support water vole at this time of year, but may have potential to support water vole at other times.
 - 22 watercourses/ditches were considered sub-optimal to support water vole by the WVHS method.
 - D78, D95, D101, D104, D111, and D139 which were assessed to be sub-optimal by the WVHS were dry at the time of survey.
 - D78 is a continuation of D78b which contained water and was also assessed to be optimal for water vole. D111 had duckweed on the ground with damp areas also present indicating the ditch holds water at certain times of the year. Therefore, D78, D111 and D139 are considered unsuitable to support water vole at this time of year, but may have potential to support water vole at other times.
 - D95, D104 and D139 were choked by terrestrial grasses and herbs indicating they are dry for the majority of the year. These ditches are considered to be unsuitable to support water vole.
 - 17 watercourses/ditches were considered unsuitable to support water vole by the WVHS method. Of these, ditches D22, D27, D48, D55, D70, D71a, D79, D103 were dry at the time of survey.
 - Due to the length of WC6 (Hurns Gutter) and that it meanders through the Site, this watercourse was assessed at two locations. It was assessed to be both sub-optimal and optimal to support water vole at the respective locations.
 - 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 year²³. This is likely to be particularly applicable to ditches that have fluctuating water levels

²³ Dean, R. Strachan, D. Gow, and R. Andrews. The Water Vole Mitigation Handbook. London: The Mammal Society. 2016.

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 was recorded in the survey area at the time of survey. The majority of the survey area comprises large arable fields which are 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 Habitats within the survey that are particularly favourable for reptiles include the mosaic of habitats on previously disturbed ground such as at Jackdaw Quarry (TN58) and the disturbed ground at XC522/XC522T (TN71). Reptiles may be present in low numbers in the limited areas of suitable habitat present within the survey area.

Badgers

- 3.3.19 Suitable habitats for sett creation are present throughout the survey area including the banks of ditches, hedgerows, dense scrub and woodland. The habitats within the survey area 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.
- 3.3.20 Targeted badger surveys have been undertaken at suitable habitat within the survey area, the detailed methodology and results of which are presented in a separate confidential badger report in **Appendix 8D**²⁴. Occasional evidence of badger was recorded throughout including latrines, footprints, hairs with 11 well-used and two partially-used setts recorded throughout the survey area. A further four potential badger setts were also identified within the survey area; no direct evidence of badger was present although the size and shape of holes suggest they could be badger.

Other conservation-notable species

- 3.3.21 The suitability of the Site for those conservation-notable species recorded by the desk study (see **Table 8C.2.2**), or which are most commonly encountered in the habitats present within the Site, was assessed. This took into account the relative importance of the Site habitats in comparison to the local and regional habitats. In summary, with the exception of potential riparian tansy plants along the River Ouse (known were observed during the extended Phase 1 habitat survey), habitats within the Site and survey area are predominantly unfavourable 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.

²⁴ Wood (2021). Yorkshire Green Energy Enablement (GREEN) Project: CONFIDENTIAL Badger Survey Report

- 3.3.22 Four potential tansy beetles were observed in an arable margin on broadleaved dock at TN33 and TN34 approximately 60m south-west from the River Ouse.
- 3.3.23 Watercourses within the survey area could support notable fish species including those identified during the desk study:
- WC7 - River Ouse has records of sea lamprey, bullhead and eel. Atlantic salmon; the River Ouse bisects the Site span XC420-421 and XCP008-009.
 - WC11 – River Nidd has records of brown/sea trout, eel, bullhead and barbel; the River Nidd is located approximately 55m north-west of the Site at the nearest location, and flows into the River Ouse.
 - WC15 – River Wharfe has records of grayling, barbel and brown/sea trout; the River Wharfe bisects the Site span XC471-472.
 - WC19 – Cock Beck has records of eel and bullhead; the Cock Beck bisects the Site span XC497-498 and goes under a road that will be used to access to pylons XC491-497.
- 3.3.24 A summary of the habitat suitability assessment for fish of 59 watercourses/ditches is detailed in **Annex 8C.4**.
- 3.3.25 Evidence of non-protected conservation-notable species recorded during the survey are includes sightings of 24 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)

- 3.3.26 Habitats recorded in the survey area suitable for a range of nesting birds include scrub, hedgerow, vegetation on the banks of ditches and watercourses, grassland (ground nesting species) and woodland.
- 3.3.27 Sand martins were observed using holes in the banks of the River Ouse approximately 170m south-west of XCP009.
- 3.3.28 Buildings may also provide suitable nesting opportunities for a range of birds, with farm buildings such as barns being potentially suitable for barn owl.
- 3.3.29 Bird boxes were identified at TN30 and TN44, with owl boxes also recorded at TN09, TN43 and TN69. A barn owl was observed foraging within grassland/young woodland plantation at TN03.

Invasive non-native species

- 3.3.30 The following invasive non-native species were recorded within the survey area during the extended Phase 1 habitat survey:
- Japanese knotweed: stands located within Overton Borrowpits SINC along the railway at TN12 and TN15;
 - Himalayan balsam: extensive stands of this species were recorded within woodlands and along the banks of ditches and ponds (TN01, TN04, TN05, TN07, TN08, TN10, TN11, TN13, TN14, TN16-TN19, TN22, TN24, TN27-TN29, TN35-TN38, TN41, TN42, TN45, TN47-54, TN61-TN67,

- Giant hogweed: present along Hurns Gutter within woodland (TN07, TN21, TN22), in close proximity to XCP016 and along the River Ouse bank (TN26 (potential));
- Variegated archangel (*Lamium galeobdolon*) (potential): within a woodland garden (TN60);
- Snowberry (potential): stands are present within the understory of woodlands at TN55, TN56, and along hardstanding track (TN70) and the boundary of an arable field (TN73);
- Japanese Rose: individual plants within hedgerows/gardens at TN02, TN46, and TN59; and
- Cotoneaster²⁵: individual plants within hedgerows/gardens at TN23.

3.3.31 It is possible that these species will be present in, or colonise, other areas of the Site. 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 **Section 3.2.5**) on these surveys (e.g. timing, access).

²⁵ 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.

4. Recommendations

4.1 Additional surveys and investigations

4.1.1 The following additional surveys are likely to / may be required to establish the status (e.g. presence/likely absence, or population size class) of key ecological features of relevance to the Project.

- Extended Phase 1 habitat survey:
 - An extended Phase 1 habitat survey of the remaining land within the survey area that either has not been surveyed or was inaccessible at the time of survey in accordance with good practice guidance (see **Section 3.2**). The optimal period for extended Phase 1 habitat survey is April to October. However, in view of the predominantly arable landscape within the survey area (based on survey results to date and aerial imagery of the Site), it may be possible to extend the survey period (if required to enable access agreements to be obtained) without significantly compromising the robustness of the survey results.
- National Vegetation Classification (NVC):
 - Detailed botanical surveys in accordance with NVC methodology²⁶ of any areas which may qualify as HPIs (including species-rich neutral semi-improved grassland and good quality semi-natural woodland) likely to be impacted by the Project; the optimal time for surveys is between April and August, dependent on habitat type.
- Bats:
 - Ground level tree assessment of any trees/buildings planned for removal/works to facilitate the Project, to determine suitability for roosting bats in accordance with good practice guidance²⁷. Based on current proposals this is likely to include, but not limited to, woodland at Overton Borrowpits SINC and along Cock Beck and The Foss. Depending on the results of this assessment, and the likelihood of trees/buildings being impacted, further surveys to determine presence/likely absence of bat roosts may be required during the period May to September.
 - Activity surveys to determine the nature and significance of any bat activity associated with habitats favourable to bats, notably woodland, good quality grassland and linear features (such as tree lines/hedgerows/ watercourses) across the Site which may be lost or disturbed as a result of the Project. Based on current proposals this is likely to include, but not limited to areas around Monk Fryston substation, Overton Borrowpits SINC, along Cock Beck and The Foss. A mix of walked transect surveys and static bat recorders should be utilised in accordance with good practice guidance²⁷ at intervals throughout suitable habitat on the site during the months between September/October 2021 and April to August 2022, to record bat activity.

²⁶ Rodwell, J. S. (2006) NVC Users' Handbook. JNCC, Peterborough.

²⁷ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidance (3rd edn). The Bat Conservation Trust, London.

- GCN:
 - The requirement for further GCN surveys is dependent on whether National Grid opt to join the district level licensing (DLL) scheme²⁸ for GCN (which would not require further surveys) or decide to continue with baseline surveys to determine any traditional EPSL requirements. Discussions with Natural England are currently ongoing to determine the most appropriate course of action.
 - Prior to this decision it is recommended that HSI assessments should be undertaken of the remaining ponds and ditches that were inaccessible at the time of survey, to determine their suitability for breeding GCN and whether they should be scoped in for further consideration in either the DLL or traditional survey licensing process. Any ponds found to be unsuitable for GCN (e.g. due to absence on the ground or severe pollution) may be removed from the DLL process subject to agreement with Natural England.
 - Should National Grid opt to pursue a traditional survey and licensing approach, targeted GCN surveys of waterbodies likely to be impacted as a result of the project (including those where impacts would likely be limited to surrounding suitable terrestrial habitat within ~250m) would be required. These would comprise environmental DNA (eDNA) surveys to determine presence/likely absence of GCN at suitable ponds and ditches with an HSI suitability score of below average or above (which have not been scoped out for other reasons), in accordance with the methods approved by Natural England²⁹ during the period mid-April to June.
 - If presence of GCN is recorded during eDNA surveys, up to six further survey visits using traditional methods (e.g. torch survey, bottle trapping and egg searching) in accordance with Natural England guidance³⁰ may be required during the period mid-March to mid-June. These surveys would be required to determine population size class assessments in certain circumstances based on the nature, extent and distance of proposed activities from waterbodies where GCN are present, and the likelihood of licensable mitigation being required.
- Otter:
 - A habitat suitability assessment for otter on all ditches/watercourses within the survey area that were inaccessible at the time of survey.
 - Targeted otter surveys of ditches and watercourses suitable for otter (as detailed in **Annexe 8C.4**) where works are planned to take place within up to 200m of the bankside (depending on the habitat to be affected) in accordance with good practice guidance³¹. Surveys are not seasonally dependent but should avoid periods of high water.

²⁸ Department for Environment Food & Rural Affairs (2021). Great crested newts district level licensing schemes [online]. Available at: [Developers: how to join the district level licensing scheme for GCNs - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/how-to-join-the-district-level-licensing-scheme-for-great-crested-newts). [Accessed 02 August 2021].

²⁹ Biggs et al. (2014) Analytical and methodological development for improved surveillance of the Great Crested Newt. *Appendix 5*. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

³⁰ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

³¹ Chanin, P. (2003) Monitoring the otter *Lutra Lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English nature, Peterborough.

- Water Vole:
 - A habitat suitability assessment for water voles on all ditches/watercourses within the survey area that were inaccessible at the time of survey.
 - Targeted water vole surveys of ditches and watercourses suitable for water vole (as detailed in **Annexe 8C.4**) where works are planned to take place within 10m of the bankside in accordance with good practice guidance³². A spring and summer survey are usually required at each ditch/watercourse during the periods mid-April to June 2022 and July to September 2022, respectively.
- Badger:
 - Detailed badger surveys of the remaining suitable habitat within the survey area that either has not been surveyed or was inaccessible at the time of survey based on good practice guidance³³. Surveys are not seasonally dependent.

4.1.2 The following additional surveys may also be required to establish the status (e.g. presence/likely absence, or population size class) of key ecological features of relevance to the Project, although these will be considered if required based on the developing Project scope:

- Reptiles:
 - A habitat suitability assessment for reptiles on all habitats within the survey area that were inaccessible at the time of survey.
 - Targeted presence/likely absence surveys of habitats suitable for reptiles where works are planned to take place in accordance with good practice guidance³⁴. Surveys would be undertaken April to September 2022 where required. If reptiles are found to be present, consideration would be given as to whether an additional 14 survey visits would be carried out to attain population size.
- Fish:
 - A habitat suitability assessment for notable fish species on all ditches/watercourses within the survey area that were inaccessible at the time of survey.
 - Targeted surveys of ditches/watercourses suitable for notable fish species where works are planned to take place during 2022.
- Invertebrates:
 - A habitat suitability assessment for notable invertebrate species on all habitats within the survey area that were inaccessible at the time of survey.
 - Targeted surveys of habitats suitable for notable or diverse invertebrate species/assemblages, including for the tansy beetle within riparian habitat along the River Ouse, where works are planned to take place, in line with best practice

³² Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook. (Mammal Society Mitigation Guidance Series). Eds. Fiona Matthews and Paul Chanin. Mammal Society, London.

³³ Scottish Natural Heritage (2003) Best Practice Guidance – Badger Surveys. Inverness Badger Survey 2003. Commissioned Report No. 096.

³⁴ Froglife (1999). Froglife Advice Sheet 10 Reptile Survey.[online] Available at: https://www.wildcare.co.uk/media/wysiwyg/pdfs/froglife_advice_sheet_10_-_reptile_surveys.pdf [Accessed 11 August 2021].

guidance³⁵. Time of year dependant on species but likely May to September 2022.

- Birds:
 - The requirement for further bird surveys is dealt with under separate cover³⁶.
 - Walkover surveys will be targeted in areas of suitable habitat for Schedule 1 breeding bird species such as kingfisher (*Alcedo atthis*), barn owl (*Tyto alba*), red kite (*Milvus milvus*) and peregrine (*Falco peregrinus*) in accordance with best practice guidance^{37,38,39}. Four monthly surveys programmed for the period April to July 2022.
 - Winter bird walkover surveys are partially complete with further surveys to be undertaken during the period October 2021 to March 2022.

4.2 Consultations

- 4.2.1 The full scope and requirement of additional surveys would be subject to agreement with statutory consultees through the DCO consultation process. This would also involve agreeing a protocol to follow for land where access isn't permitted for surveys.

³⁵ Natural England (2007). Research Report NERR005: Surveying terrestrial and freshwater invertebrates for conservation evaluation. [online] Available at: <http://publications.naturalengland.org.uk/publication/36002> [Accessed 11 August 2021].

³⁶ Wood (2021). 2021 Wintering Birds Survey Report.

³⁷ Gilbert, G., Gibbons, D.W., and Evans, J. (2001). Bird Monitoring Methods: a manual of techniques for key UK species. Sandy, Bedfordshire, England: The Royal Society for the protection of Birds.

³⁸ Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). Raptors: a field guide to survey and monitoring. Stationary Office

³⁹ Shawyer, C. (2012). Barn owl *Tyto alba* Survey Methodology and techniques for use in Ecological Assessment. Wildlife Conservation Partnership.

Annex 8C.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> |
| 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> |
| Birds foot trefoil | <i>Lotus corniculatus</i> |
| Black alder | <i>Alnus glutinosa</i> |

| Common Name | Scientific Name |
|---------------------|----------------------------------|
| 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> |
| Colts foot | <i>Tussilago farfara</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 reed | <i>Phragmites australis</i> |
| Common rock-rose | <i>Helianthemum nummularium</i> |

| Common Name | Scientific Name |
|------------------------|--------------------------------|
| Common spotted orchid | <i>Dactylorhiza fuchsia</i> |
| Common valerian | <i>Valeriana officinalus</i> |
| Corn mint | <i>Mentha arvensis</i> |
| Cotoneaster | <i>Cotoneaster</i> sp |
| 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 gentian | <i>Gentianella anglica</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> |
| Field maple | <i>Acer campestre</i> |

| Common Name | Scientific Name |
|----------------------|---------------------------------|
| 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> |
| Lesser water parsnip | <i>Berula erecta</i> |

| Common Name | Scientific Name |
|-----------------------|-------------------------------|
| Leylandii | <i>Cupressus × 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 sp</i> |
| 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 sp</i> |
| 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> |
| Red fescue | <i>Festuca rubra</i> |

| Common Name | Scientific Name |
|------------------------|-----------------------------------|
| 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> |
| Vetch | <i>Vicia</i> sp |

| Common Name | Scientific Name |
|--------------------|------------------------------------|
| 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> |
| Ruff | <i>Philomachus pugnax</i> |

| Common Name | Scientific Name |
|--------------------|----------------------------|
| 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 8C.2 – Target Notes

| TN | Grid Reference | Description |
|------|----------------|---|
| TN01 | SE 59169 58722 | Himalayan balsam prevalent within woodland and on road verge. |
| TN02 | SE 57723 59829 | Individual Japanese rose within hedgerow. |
| TN03 | SE 57740 59966 | Barn owl foraging over grassland/plantation woodland. |
| TN04 | SE 56372 60232 | Himalayan balsam interspersed throughout woodland. |
| TN05 | SE 56294 57513 | Himalayan balsam within woodland. |
| TN06 | SE 56231 57451 | Potential otter footprints in muddy banks along Hurns Gutter on edge of woodland. |
| TN07 | SE 56274 57350 | Area of multiple stands of giant hogweed and Himalayan balsam along small ditch within woodland. |
| TN08 | SE 56140 57217 | Himalayan balsam along Hurns Gutter bounding an arable field. |
| TN09 | SE 55901 56759 | Owl box in mature ash tree. |
| TN10 | SE 55872 56639 | Himalayan balsam on banks of Hurns Gutter. |
| TN11 | SE 56028 56399 | Himalayan balsam on banks of Hurns Gutter. |
| TN12 | SE 56114 56155 | Japanese knotweed interspersed for about 20m along railway embankment. |
| TN13 | SE 56269 55964 | Scattered Himalayan balsam within woodland. |
| TN14 | SE 56291 55908 | Scattered Himalayan balsam within woodland. |
| TN15 | SE 56220 55879 | Stand of Japanese knotweed immediately adjacent railway embankment. Looks like it has undergone previous cutting/treatment, probably from network rail. |
| TN16 | SE 56208 55925 | Scattered Himalayan balsam within woodland. |
| TN17 | SE 56452 55572 | Himalayan balsam on margin of marshy grassland. |
| TN18 | SE 56499 55577 | Himalayan balsam along ridge embankments. |
| TN19 | SE 56562 55571 | Himalayan balsam along Hurns Gutter within woodland. |
| TN20 | SE 56558 55472 | Marshy grassland. |
| TN21 | SE 56663 55415 | Giant hogweed along Hurns Gutter within woodland. |
| TN22 | SE 56684 55380 | Giant hogweed and Himalayan Balsam along Hurns Gutter within woodland. |
| TN23 | SE 55225 55928 | Cotoneaster sp. within residential introduced shrub. |
| TN24 | SE 54965 55996 | Scattered Himalayan balsam amongst old machinery. |

| TN | Grid Reference | Description |
|-----------|-----------------------|--|
| TN25 | SE 54631 56037 | Otter spraint along bank of River Ouse on base of tree. |
| TN26 | SE 54809 55815 | Possible giant hogweed plant on southern bank of River Ouse – observed from distance on opposite bank. |
| TN27 | SE 54768 55585 | Himalayan balsam on banks of small stream. |
| TN28 | SE 54778 55478 | Himalayan balsam along D38. |
| TN29 | SE 54744 55403 | Himalayan balsam along D38. |
| TN30 | SE 54421 54983 | Bat and bird boxes on trees within tree line along the road. |
| TN31 | SE 54001 55330 | Bat box. |
| TN32 | SE 54010 55371 | Bat hibernation box. |
| TN33 | SE 54377 56256 | Potential tansy beetle on broadleaved dock on arable margin. |
| TN34 | SE 54397 56283 | Three potential tansy beetles on broadleaved dock on arable margin. |
| TN35 | SE 54418 56329 | Himalayan balsam along banks of River Ouse. |
| TN36 | SE 54525 56747 | Himalayan balsam along edge of coniferous plantation/Overton Wood ancient replanted woodland. |
| TN37 | SE 54179 56500 | Himalayan balsam prevalent along the banks of The Foss. |
| TN38 | SE 54057 56421 | Himalayan balsam prevalent along margins of The Foss. |
| TN39 | SE 53887 56190 | Otter footprints along muddy banks of The Foss. |
| TN40 | SE 53870 56172 | Otter footprints along muddy banks of The Foss. |
| TN41 | SE 53743 56260 | Himalayan balsam scattered throughout woodland. |
| TN42 | SE 53378 56128 | Himalayan balsam on edge of woodland. |
| TN43 | SE 51012 56248 | Owl box within hay bale shed and pellets on ground underneath box. |
| TN44 | SE 49774 52718 | Bird box on oak tree. |
| TN45 | SE 49994 52548 | Stand of Himalayan balsam on edge of woodland/P167. |
| TN46 | SE 48735 50531 | Individual Japanese rose on metal fence/edge of broadleaved plantation woodland. |
| TN47 | SE 49296 49800 | Himalayan balsam dominates northern part of woodland and around P187/P187a and along access track within woodland. |
| TN48 | SE 49262 49739 | Himalayan balsam scattered throughout woodland. |
| TN49 | SE 48713 49088 | Himalayan balsam starts to dominate woodland towards the north and around P195. |

| TN | Grid Reference | Description |
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| TN50 | SE 48679 48977 | Himalayan balsam along D95. |
| TN51 | SE 48258 46634 | Himalayan balsam scattered within mixed plantation woodland surrounding Field nr Healaugh Manor Farm deleted SINC. |
| TN52 | SE 48587 46574 | Himalayan balsam on edge of broadleaved plantation woodland at Healaugh Priory marsh deleted SINC. |
| TN53 | SE 48599 46536 | Himalayan balsam prevalent along D103. |
| TN54 | SE 47479 44296 | Himalayan balsam on both banks of River Wharfe. |
| TN55 | SE 46045 42133 | Stands of snowberry within woodland. |
| TN56 | SE 45879 42166 | Stands of snowberry within woodland. |
| TN57 | SE 46578 41808 | Moor Lane, Stutton Verges local wildlife site sign. |
| TN58 | SE 46326 41559 | Jackdaw Quarry. |
| TN59 | SE 46728 37598 | Individual Japanese rose amongst otherwise intact native species-rich hedgerow. |
| TN60 | SE 46939 37661 | Possible variegated archangel within broadleaved plantation woodland. |
| TN61 | SE 46959 37698 | Himalayan balsam along banks of Cock Beck. |
| TN62 | SE 46863 37250 | Himalayan balsam along banks of Cock Beck. |
| TN63 | SE 46655 37044 | Himalayan balsam along banks of Cock Beck. |
| TN64 | SE 46544 36961 | Himalayan balsam along banks of Cock Beck. |
| TN65 | SE 46612 36870 | Himalayan balsam along banks of Cock Beck. |
| TN66 | SE 46378 36724 | Himalayan balsam along banks of Cock Beck. |
| TN67 | SE 47445 33474 | Himalayan balsam along railway and up embankment. |
| TN68 | SE 47058 32099 | The desk study identified two parcels of traditional orchard priority habitat within the survey area, of which one is within the Site (approx. 40m south of XC514); no orchard was identified during the extend Phase 1 habitat survey, with the area appearing to be mainly amenity grassland bordered by scrub along the railway and some trees. Works located within or immediately adjacent this habitat could damage/destroy this priority habitat. |
| TN69 | SE 46955 31458 | Owl box on tree within woodland. |
| TN70 | SE 47634 29827 | Potential stand of snowberry along hardstanding track. |
| TN71 | SE 47682 29782 | Mosaic of habitats in this arera including scrub, tall ruderal, grass, ephemeral/short perennial and bare ground. |

| TN | Grid Reference | Description |
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| TN72 | SE 48231 29721 | Disused quarry near Monk Fryston. Steep walls and dense scrub, cannot assess how deep it goes and what the habitat is like at the bottom. |
| TN73 | SE 48855 29092 | Potential stand of snowberry on arable field boundary. |

Annex 8C.3 – GCN HSI Results of Waterbodies within 250m

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E2s
4c
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7-
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(Below Average

In

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FS~-----
1E4
1E0
E1r
2s
7c
2L
Et
E1
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2V
2e
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FS~
1E3
1E0
E0r
Ev
7e
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Et
E
L
2
E

Fishing lake

Out

FS~
1E1
1E2
E0E
7r
Ev
Ee
E
E

Fishing lake

Out

£s
£t
£

FS~ Fishing lake Out
1E9
2E0
CCr
Ev
4e
2s
Et
€
£
£
€

FS~10001110.80 (Below Average In
1E1
2E2 21€ £
100 007 £
Er
Cv
€€
Es
Et
C
£
£

FS~100001110.30 (Poor Out
1E1
2E2 0102 £
200 5000 £
Er
2v
£€

Es
Et
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|-----|---|------------|
| FS~ | Pond doesn't exist on the ground | Out |
| 1E9 | | |
| 2EE | | |
| 3Cr | | |
| Es | | |
| Ec | | |
| 1L | | |
| Et | | |
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| 1E | | |
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| FSV----- | -- | - |
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| 2Et | | |
| 41r | | |
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| Er | | |
| Et | | |
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| ci | | |
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| e | | |

FSV1000111100.9

1Ei
2Et C1E E
41F E E E
e1i
Er
1t
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Ee
Es
7i
Ct
e

(Poor

Out

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4
6

FS~1000101000.4

1E1
2E3 EEE E 1E
51C E E 7 7
4r
1e
1e
Es
Et
1
E
E

(Below Average

In

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E
E

FS~-----

1E1
2E7
71E
7r
Es
2C
5L
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|------------------|--|------------------|------------|
| 7t 2r | | | |
| FS~1000100000.35 | | (Average | In |
| 1E2 | | . | |
| 2E5 8E6 6E13 | | £ | |
| 82r 007 7703 | | 4 | |
| Cv | | | |
| 7e | | | |
| 2s | | | |
| Et | | | |
| E | | | |
| E | | | |
| E | | | |
| E | | | |
| FS~1100100000.35 | | (Average | In |
| 1E5 | | . | |
| 2E5 9E 6E16 | | € | |
| 92r 07 7707 | | 0 | |
| Cr | | | |
| 1c | | | |
| 4r | | | |
| Et | | | |
| Et | | | |
| E- | | | |
| Ev | | | |
| Ce | | | |
| s | | | |
| t | | | |
| FS~1010100100.35 | | (Poor | Out |
| 1E6 | | . | |
| 3E0 8 3 0E 3 | | 4 | |
| 01r 0 3 17 3 | | 2 | |
| Er | | | |
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4r
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E-
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F9~100001110.90

(Below Average

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1E7
355 21E4 e
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F9~-----

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| s t | | | | | | | | | |
| FS~1C1C11CCCC0.40 | | | | | | | | | |
| 1EE | | | | | | | | | |
| 3EE 8 3 613 | | | | | | | | | |
| 61r C 3 703 | | | | | | | | | |
| Es | | | | | | | | | |
| Ec | | | | | | | | | |
| 7U | | | | | | | | | |
| Et | | | | | | | | | |
| Et | | | | | | | | | |
| 3- | | | | | | | | | |
| 7e | | | | | | | | | |
| 5e | | | | | | | | | |
| s t | | | | | | | | | |
| FSV1CCCC111C0.30 | | | | | | | | | |
| 1Ei | | | | | | | | | |
| 3Et 2532 3 | | | | | | | | | |
| 71r CC3C 3 | | | | | | | | | |
| 4i | | | | | | | | | |
| 3r | | | | | | | | | |
| 4t | | | | | | | | | |
| Et | | | | | | | | | |
| 5e | | | | | | | | | |
| 33 | | | | | | | | | |
| 6i | | | | | | | | | |
| 6t | | | | | | | | | |
| e | | | | | | | | | |
| FS~11CC1CCC10.40 | | | | | | | | | |
| 1EE | | | | | | | | | |
| 3EE 96 661 | | | | | | | | | |
| 81r 7 77C | | | | | | | | | |
| 3r | | | | | | | | | |

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F5V11C11CCC10.7

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F5V11CC1CCC10.9

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4Et €€ €€1
C1r € 77
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| FSV11CC1CC110.3 | (Below Average | In |
| 1Ei | . | |
| 4Et €€ €€ | € | |
| 21F 1 77 | 1 | |
| Ci | | |
| 1r | | |
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| FSV1CCC1CCC10.35 | (Below Average | In |
| 1Ei | . | |
| 4Et €€€ €€1 | € | |
| 31F 5 3 77 | € | |
| Ci | | |
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| 49 | | | |
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| 1E5 | | . | |
| 4Er | 99 661 | ε | |
| 41v | 3 77 | ε | |
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| E | | | |
| 1 | | | |
| FS~ | Pond doesn't exist on the ground | | Out |
| 1E1 | | | |
| 4E7 | | | |
| 5CE | | | |
| 7r | | | |
| 9v | | | |
| 7e | | | |
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| FS~----- | | -- | - |
| 1E2 | | | |
| 4E2 | | | |
| 71C | | | |
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FSc-----
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FSc-----
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FS~----- -- -
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FS~1CCCC111C0.9 (Poor Out
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EEr C1E4 E
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FS~1CCCC111C0.85 (Poor Out
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FS~10CC1111C1

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FS~1000100000.35

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FS~1000100000.35

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FS~1000100000.35

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FS~1000100000.35

1E8
EEC EE6 EE1E
E1r 7 77 7
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FS~1000100000.35

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E1C C 7 77 7

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| FS-100010000.35 | | (Below Average | In |
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| EE4 999 9919 | | E | |
| E1E 1 7 77 7 | | 9 | |
| c2r | | | |
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| FS-100010000.35 | | (Below Average | In |
| 1E1 | | . | |
| EE5 999 9919 | | E | |
| E1C 2 7 77 7 | | 9 | |
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| FS~1000100000.35 | (Average | In |
| 1E2 | . | |
| EE2 EE6 EE1E | € | |
| E10 E 7 77 7 | | |
| Er | | |
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|------------------|-----------|----|
| FS~1100100000.35 | (Average | In |
| 1E2 | . | |
| EE0 EE EE1E | € | |
| E1E 7 77 7 | | |
| rEr | | |
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| El | | |
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| E+ | | |
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| FS~1000100000.35 | (Below Average | In |
| 1E2 | . | |
| EE0 EE6 EE1E | € | |
| 10 E 7 77 7 | € | |
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FS~1000100000.35

(Below Average In

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E1E 1 7 77 7
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FS~1000100000.35

(Below Average In

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E1E 1 7 77 7
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FS-100010000.35

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51r 5 7 77 7
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FS-110010010.4

1E1
557 55 50 5
615 7 71 5
/Cr
1Es
52c
75L
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1r
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Out

FSV-----

1Ei
55t
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7i
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Et
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4e
Cs
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e

FSV **Pond has been filled in** **Out**

1Ei
5Et
9Cr
3i
3r
Et
Er
3e
Cs
3i
4t
e

FS~ **Pond doesn't exist on the ground** **Out**

1E2
643
CsC
Er
Er
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Er
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FS~-----
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FS~-----
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FS~1000100100.4
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| FS~ | Pond doesn't exist on the ground | | Out |
| 1E5 | | | |
| 6E0 | | | |
| 4Cr | | | |
| 3V | | | |
| 7E | | | |
| Cs | | | |
| Et | | | |
| 2 | | | |
| 8 | | | |
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| FS~----- | | -- | - |
| 1E1 | | | |
| 6E2 | | | |
| 5C0 | | | |
| 2r | | | |
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| 6 | | | |
| 6 | | | |
| 5 | | | |
| FS~1CCCC11CC0.5 | | (Below Average | In |
| 1E6 | | . | |
| 6E0 | 29E4 1E | 5 | |
| 6Cr | 7 7 | 2 | |
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7c
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F5~11CCCC11C10.35

(Below Average

In

1E5
64r 552 1
75s 7

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F5~11CCCCCC10.5

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55r 7 77

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| s t | | | | | | | | |
| FS~1100010010.6 | | | | | | | | (Below Average In |
| 1E1 | ... | .. | | | | | | . |
| 640 | 992 | 61 | | | | | | £ |
| 99r | 7 | 7 | | | | | | £ |
| Es | | | | | | | | |
| 7c | | | | | | | | |
| 7u | | | | | | | | |
| Et | | | | | | | | |
| 2f | | | | | | | | |
| 4- | | | | | | | | |
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| s t | | | | | | | | |
| FS~1010011010.6 | | | | | | | | (Below Average In |
| 1E2 | . | .. | . | | | | | . |
| 741 | 4 | 62 | 1 | | | | | £ |
| 290 | 7 | | | | | | | € |
| 6r | | | | | | | | |
| 3s | | | | | | | | |
| 0c | | | | | | | | |
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F5V1C1CC111C0.3

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49r 74 3
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F5V1C1CC111C0.3

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| FS~ | | Pond doesn't exist on the ground | Out |
| 1E1 | | | |
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| FS~ | | Pond doesn't exist on the ground | Out |
| 1E1 | | | |
| 741 | | | |
| £££ | | | |
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| FS~11CCC1CCC0.35 | | | (Below Average |
| 1E€ | ... | ... | In |
| 74C | ££4 | £13 | £ |
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FES-----
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FS-----
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| c7v | | | |
| 1€ | | | |
| €s | | | |
| €t | | | |
| 0 | | | |
| 2 | | | |
| 1 | | | |
| 2 | | | |
| F€----- | | -- | - |
| 1E€ | | | |
| €40 | | | |
| 2€r | | | |
| c€v | | | |
| €€ | | | |
| 7€ | | | |
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| 0 | | | |
| 2 | | | |
| 0 | | | |
| € | | | |
| F€----- | | -- | - |
| 1E1 | | | |
| €40 | | | |
| 2€0 | | | |
| €€r | | | |
| €v | | | |
| 4€ | | | |

Es
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1
7
ε

FSc-----
1E1
ε4C
2εε
fEr
Ev
εε
Es
Ct
1
4
C

FSc-----
1E1
ε41
2εε
cEr
Ev
4ε
Es
Ct
1
C
ε

FSc-----
1E1
ε41
2εC
rEr

7s
Cc
E_L
Ct
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E-
2v
ε
s
t

Fε-----

1E1
E4E
2Eε
i εr
1v
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Ct
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Fε-----

1E1
E44
2Eε
j εr
2v
1ε
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FS-----
1E1
E47
2EC
kEr
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FS-----
1E1
E42
2EE
lEr
Ev
5e
Es
Ct
2
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FS-----
1E1
E49
2EC
rEr
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|--|--|---------------|-----------|
| 9 2 | | | |
| F9~----- 1E2 842 280 rEr 4v 5e 5s Ct 1 6 8 | | -- | - |
| F9~1000011110.3 1E7 845 C132 4Er 5030 9e 6a 9s 5t C C 6 8 | | (Poor | |
| F9~1001111010.60 1E1 . . . 842 99 1 595 80 C 1r 6r 1c 4r | | (Good | In |

£t
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1-
£v
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t

| | | |
|---|---|------------|
| F£~ 1E1 £44 €€C Cr £r £c 4r £t £t £- £€ £ £ t | Pond doesn't exist on the ground | Out |
|---|---|------------|

| | | |
|---|------------------------|-----------|
| F£~1000000010.70 1E4 £4£ £££2££1 7£r 5C7C77C £€ C£ C£ 4t £ 7 £ 7 | (Below average | In |
|---|------------------------|-----------|

| | | | |
|-----------------|-------|---|------------|
| F 1000011100.90 | | (Below average | In |
| 1 | | . | |
| 8 | €132 | € | |
| 7 | 0000 | 7 | |
| ε | | | |
| F9~ | | Pond doesn't exist on the ground | Out |
| 1E5 | | | |
| 840 | | | |
| 79r | | | |
| ε3ε | | | |
| 0ε | | | |
| 1s | | | |
| 4t | | | |
| 9 | | | |
| 7 | | | |
| 8 | | | |
| 1 | | | |
| F9~ | | Pond doesn't exist on the ground | Out |
| 1E2 | | | |
| 840 | | | |
| 99r | | | |
| 0s | | | |
| 20 | | | |
| 7L | | | |
| 4t | | | |
| 9f | | | |
| ε- | | | |
| 9v | | | |
| 4ε | | | |
| ε | | | |
| t | | | |
| F9V | | Pond doesn't exist on the ground | Out |
| 1Ei | | | |
| 4t | | | |

CEr
CEi
1r
Et
4r
9e
7S
7i
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e

FS-----
1EE
94E
1Er
Er
3c
3r
4t
9r
E-
Cv
3e
s
t

FSV-----
1Ei
94t
3Er
7i
1r
Et
4r
9e
2S
i

| | | |
|------------------|----------------------------------|----------|
| £t | | |
| £€ | | |
| FS~1000100000.50 | | (Average |
| 1E€1. | | . |
| 94€ 88€ 66€ | | € |
| 48r 007 77 7 | | 1 |
| 7€ | | |
| 7€ | | |
| 4s | | |
| 4t | | |
| € | | |
| 2 | | |
| 2 | | |
| 2 | | |
| FS~ | Pond doesn't exist on the ground | Out |
| 1E3 | | |
| 940 | | |
| 58r | | |
| 7€ | | |
| 4€ | | |
| 5s | | |
| 4t | | |
| € | | |
| 1 | | |
| € | | |
| € | | |
| FS----- | | -- |
| 1E1 | | - |
| 942 | | |
| 68€ | | |
| 8r | | |
| 3€ | | |
| 4€ | | |
| 4 | | |

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| £ | | | | |
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| 1E2 | | | | |
| £4£ | | | | |
| 7£C | | | | |
| £r | | | | |
| 7v | | | | |
| £e | | | | |
| 4s | | | | |
| £t | | | | |
| C | | | | |
| 2 | | | | |
| £ | | | | |
| FS-1000110000.30 | | | (Poor | Out |
| 1E1 | | | . | |
| £4£ 4££ 61£ | | | 4 | |
| ££C 5££ 7££ | | | £ | |
| Cr | | | | |
| 1r | | | | |
| £c | | | | |
| 4r | | | | |
| £t | | | | |
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| 4C | | | | |

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£c
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££~1100010000.35

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(Below Average

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F5V1C1C111C0.90

2Ei . . .
C4t € € 13
58t € 7 C3
1i
8r
7t
4t
7e
C3
6i
8t
€

C Average

In

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7

F5~-----

2E2
C4C
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8r
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F5~-----

2E2
C41
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4r
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F£v-----
2Ei
C4t
£7t
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F£-----
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| FS~----- | -- | - |
| 2E1 | | |
| 14E | | |
| 17E | | |
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| 4L | | |
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|------------------|-----------------|----|
| FS~1000111000.80 | (Below Average | In |
| 2E2 | . | |
| 14C 4EE 1E | E | |
| 37r 007 0E | E | |
| Es | | |
| 2C | | |
| 7L | | |
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| FSV1100100010.40 | (Average | In |
| 2Ei | . | |
| 14t EE EE1 | E | |
| 4Et C7 770 | E | |
| 2i | | |
| 4r | | |

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FS~1C1CC11CC0.40

(Below Average

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14C 4 €4 1€
€7r C 7C C€

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FS~1C1C1CCCC0.30

(Below Average

In

2E1
14€ 4 € €€1€
7€r C 7 77C€

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FSV1000111000.80

2Ei
14t 41€ 93
87r 007 13
9i
Cr
7t
4r
5e
99
8i
2t
e

(Average In
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FS~-----

2E2
245
17C
1r
9v
9e
4s
5t
3
9
2

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FS~1110101000.40

2E1
24C 3 6 13
27r 3 7 03
5r
1c
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| 375 | | | |
| 3r | | | |
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| 4r | | | |
| 4t | | | |
| 8r | | | |
| 9- | | | |
| Cv | | | |
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| FS~ | 1000110000.90 | (Below Average | In |
| 2E1 | | . | |
| 242 | 456 613 | € | |
| 480 | 007 703 | € | |
| Cr | | | |
| 4r | | | |
| 1c | | | |
| 4r | | | |
| 4t | | | |
| 7r | | | |
| C- | | | |
| 9e | | | |
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| FS~ | 1001100100.40 | (Poor | Out |
| 2E1 | | . | |

243 88 60 3
580 00 71 3
Cr
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F8-----
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F8-----
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| FSV1000111100.4 | | |
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| 34t 013 3 | 4 | |
| 04r 5 3 3 | 3 | |
| 4i | | |
| 4r | | |
| 6t | | |
| 4r | | |
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| 6t | | |
| e | | |
| FS~1000000000.45 | (Poor | Out |
| 2E2 | . | |
| 34C 49346313 | 4 | |
| 14r 3 73 3 | 1 | |
| 3e | | |
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FSV-----
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FS-----
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FS-----
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34C
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250 7 63

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FSV
2Ei
44t
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7i
3r
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Dry at time of survey

Out

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FS-----
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44E
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FS~1000111001
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444 156 13
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FSV----- -- -
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F9----- **Pond doesn't exist on the ground** **Out**
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FS~1000011010.30

2E7
545 1132 5
3Er 0030 4
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FS~1100100000.70

2E4
545 96 6616
4Er C7 7707
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| FSV1CCC1CCCC0.50 | | (Below Average | In |
| 2Ei | | . | |
| 54t | 886 6613 | 5 | |
| 67r | CC7 77C3 | 6 | |
| 2i | | | |
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| FSV1CCC111CC0.30 | | (Poor | Out |
| 2Ei | | . | |
| 54t | CC3 63 | 4 | |
| 67r | 5C3 13 | 5 | |
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FS-----
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FSV-----
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Flow

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ES-100001110.35

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Dry at time of survey

Out

ESV
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Flow

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| 5t | | |
| 3i | | |
| 9r | | |
| 1t | | |
| 5t | | |
| 7e | | |
| CS | | |
| 9i | | |
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| € | | |

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|-----------------|---------|-----------------|----|
| ESV1000011000.9 | | | |
| 2Ei | | . | |
| 55t | 9162 63 | 5 | |
| 5t | 8 7 13 | 4 | |
| 6i | | | |
| 8r | | | |
| 2t | | | |
| 5t | | | |
| 6e | | | |
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|------------------|--------|-----------------|----|
| ESV10000111000.9 | | | |
| 2Ei | | . | |
| 55t | 456 13 | 5 | |
| 5t | 7 3 | 7 | |
| 1i | | | |

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Out

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c5r 7 3

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[SV
2Ei
55t
c5r
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Heavily polluted and shallow

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[SV **Dry at time of survey** **Out**

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Dry at time of survey

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Dry at time of survey

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Dry at time of survey

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Dry at time of survey

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Key to HSI component scores:

SI1 – Location in country; SI2 – Pond area; SI3 – Frequency of pond drying; SI4 – Water quality; SI5 – Shade; SI6 – Presence of waterfowl; SI7 – Presence of fish; SI8 – Proximity of other ponds; SI9 – Terrestrial habitat; SI10 – Macrophyte cover.

*SI8 – due to the number of ponds and ditches present, an accurate calculation of number of ponds within a 1km radius has not been undertaken for every waterbody. Instead a conservative/worst case estimate has been provided which would not impact whether the waterbody would be scoped in or not. For example, for many ponds 'scoped out' an arbitrary value of 13 ponds within a 1km radius has been provided (13 ponds is the lowest number of ponds to achieve the highest score), whereas for many waterbodies 'scoped in' the arbitrary value was 0 ponds. For waterbodies where the number of ponds within a 1km radius was an influencing factor whether they would be scoped in or out (i.e. below average/higher (scoped in) or poor (scoped out)), the number of ponds within a 1km radius was worked out accurately.

Annex 8C.4 – Watercourse and Ditch Assessments within 50m of the Site 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 the Site 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 the Site to support protected and priority species which may be present in relation to the Site's location and the type and suitability of habitats present;

| Reference | Grid reference from Closest Point of watercourse /ditch to Site | Distance and direction from Site | Description | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|------|-----|-------------------|---------------------------------------|--------------------------------------|
| WC3 | SE 58961 59435 | Within the Site | Not surveyed yet | | | | | | | | |
| | | | WVHS features present | | | | WVHS | | Otter suitability | Conservation notable fish suitability | Invasive plant species ⁴¹ |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |

⁴¹ 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 Site | Distance and direction from Site | WVHS features present | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|--|---|----------------------------------|--|-----|-----|-----|-----|-----|-------------|--|---|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| WC5 | SE 57776 59731 | Within the Site | | | | | | | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | - |
| WC6 (Hurns Gutter) – location 1 | SE 56285 58437 | Within the Site | Ditch ~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.. | | | | | | Sub-optimal | Suitable for commuting (flows into and so connected to the River Ouse) but unfavourable for foraging | Unsuitable for majority of species (small watercourse with slow flow) and is unfavourable for eel (small watercourse) | None observed |
| | N | Y | Y | Y | Y | N | Y | N | | | | |

(small watercourse with likely limited prey source) and holt/resting place (scrub/trees 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 at TN06. with slow flow with poor/little assemblage of structural habitat features⁴²).

| Reference | Grid reference | Distance and | Description |
|-----------|----------------|--------------|-------------|
|-----------|----------------|--------------|-------------|

⁴² 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 (<https://insideecology.com/2017/12/22/habitat-preferences-of-the-critically-endangered-european-eel/>)

| | from closest point from Site | direction from Site | | | | | | | | | | | | |
|--|-------------------------------------|----------------------------|------------------------------|------------|------------|------------|------------|------------|------------|-------------|--------------------------|--|---|------|
| | | | WVHS features present | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| WC6 (Hurns Gutter) – location 2 | SE 56072 56353 | Within the Site | | | | | | | | | Optimal | Suitable for commuting (flows into and so connected to the River Ouse) but unfavourable for foraging (small watercourse with likely limited prey source) and holt/resting place (scrub/trees provide potential resting | Unsuitable for majority of species (small watercourse with slow flow) and is unfavourable for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features). | None |
| | | | Y | Y | Y | Y | Y | Y | Y | Y | | | | |

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 at TN06.

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|------------------|---|----------------------------------|--|
| WC7 (River Ouse) | SE 54473 56302 | Within the Site | 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

| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----|-----|-----|-----|-----|-----|-----|-----|---------|--|---|---------------------------------------|
| Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Favourable for foraging, commuting holt/resting place (large River with deep vegetated banks). Otter spraint was recorded at TN25. | Favourable 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 Site | Distance and direction from Site | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|-----|---|---|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| WC8 | SE 55354 54820 | ~35m south-east | - | - | - | - | - | - | - | - | - | - | - | |
| | | | | | | | | | | | | | | |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|-----|--|--|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| | | | | | | | | | | | | | | |

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|-------------------------------------|-------------------|-----------------|--|
| WC10 (The Foss) – location 1 | SE 53140 56209 | Within the Site | 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 I 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 | Conservation notable fish suitability | Invasive plant species | |
|-----------------------|-----|-----|------|-----|-----|-----|-----|-------------------|--|---|---------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Favourable 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 TN39 and TN40. | Favourable for notable fish species (quite wide stream with likely deep depth and sufficient flow). | None observed |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|-------------|
|-----------|---|----------------------------------|-------------|

| WC12 White Sike | SE 50381 53668 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Suitable for commuting and resting places (flows into and so connected to the Foss with vegetated banks) but unfavourable for foraging (small watercourse with likely limited prey source) and holt (potential disturbance from agricultural machinery in adjacent fields). | Unsuitable for majority of species (small watercourse with slow flow) and is unfavourable for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features). | None observed |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|------------------------------|---|----------------------------------|-----------------------|------|------|------|------|------|---|---|-------------------|---------------------------------------|------------------------|
| WC13 (Redwith Beck) | SE 48858 50053 | Within the Site | Not surveyed yet | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
| WC14 (The Foss) – location 2 | SE 48394 47750 | Within the Site | Not surveyed yet | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|--|---|--|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|--|-------------------------------|
| WC15 (River Wharfe) – location 2 | SE 47426 44284 | Within the Site | Not surveyed yet | | | | | | | | | |
| | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
| WC16 | SE 46110 38014 | ~5m west | Not surveyed yet | | | | | | | | | |
| | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
| WC17 | SE 46340 37996 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|---------|---|---|---------------------------------------|------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| Y | Y | Y | N | Y | Y | Y | Y | Optimal | Suitable for commuting (flows into and so connected to Cock Beck) but unfavourable for 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 unfavourable for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features). | None observed | |

| Reference | Grid reference | Distance and | Description |
|-----------|----------------|--------------|-------------|
|-----------|----------------|--------------|-------------|

| | from closest point from Site | direction from Site | | | | | | | | | | | |
|-------------------------|--|---|---|-------------|------------|------------|------------|------------|--------------------------|--|-------------------------------|---------------|--|
| WC18 | SE 46295 37904 | Within the Site | Dry drain ~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 | Conservation notable fish suitability | Invasive plant species | | |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| | Y | Y | Y | Y | N | N | Y | Y | Optimal | Unsuitable for foraging (dry drain) and unfavourable for holt/resting place and commuting (dry drain but connected to WC17). | Unsuitable as dry drain. | None observed | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | | | | Description | | |
| WC19 (Cock Beck) | SE 46688 36970 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|---------|---|--|------------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Favourable for foraging, commuting holt/resting place (quite wide stream with vegetated banks). | Unsuitable 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 Site | Distance and direction from Site | Description |
|--------------------|---|----------------------------------|--|
| WC20 (Stream Dike) | SE 47018 35116 | Within the Site | Dyke ~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 | Conservation notable fish suitability | Invasive plant species | |
|--|-----------------------|-----|-----|-----|-----|-----|-----|------|-------------------|---|---|------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | | | | | SI8 |
| | Y | N | Y | Y | Y | Y | Y | Y | Optimal | Suitable for commuting and resting site (grassy and tall ruderal vegetated banks) but unfavourable for foraging (small and fairly shallow watercourse with likely limited prey source) and holt (no scrub/trees and banks appear to lack suitable features and potential disturbance from agricultural machinery in adjacent fields). | Some small fish observed but considered Unsuitable for majority of species (small and shallow watercourse with slow flow) and is unfavourable for eel (small watercourse with slow flow and poor/little assemblage of structural habitat features). | None |

| Reference | Grid reference | Distance and | Description |
|-----------|----------------|--------------|-------------|
|-----------|----------------|--------------|-------------|

| | from closest point from Site | direction from Site | | | | | | | | | | |
|------------------------------|--|---|------------|-------------|-------------|-------------|-------------|-------------|--------------------------|--|-------------------------------|--|
| WC21 (Newthorpe Beck) | SE 47100 32352 | Within the Site | | | | | | | | Not surveyed yet | | |
| | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | | | Description | | |
| D4 | SE 59941 59481 | ~50m east | | | | | | | | Not surveyed yet | | |
| | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | | | Description | | |
| D5 | SE 59900 59516 | ~15m north-east | | | | | | | | Not surveyed yet | | |
| | WVHS features present | | | WVHS | | | | | | | | |

| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
|-----------|---|----------------------------------|-----------------------|------|------|------|------|------|-------------------|---------------------------------------|---------------------------------------|------------------------|---|
| | - | - | - | - | - | - | - | - | - | - | - | | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| D11 | SE 59046 59319 | Within the Site | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | - | - | - |
| | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| D12 | SE 58952 59394 | ~20m south-west | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | - | - | - |
| | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest | Distance and | WVHS features present | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | - | - | - |
| | | | - | - | - | - | - | - | - | - | - | - | - |

| | point from Site | direction from Site | |
|------------|------------------------|----------------------------|---|
| D15 | SE 57235 59796 | Within the Site | No ditch was identified during the extended Phase 1 habitat survey. |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|------------------|--|---|--|
| D21a | SE 56453 60128 | ~5m south | 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 | Conservation notable fish suitability | Invasive plant species | |
|------------------------------|------------|------------|-------------|-------------|-------------|-------------|-------------|--------------------------|---|---|---------------|
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| N | N | N | Y | N | N | N | N | Unsuitable | Unfavourable for foraging, commuting, holt/resting place (small and shallow ditch with only isolated patches of water with likely limited prey source and potential | Unsuitable as largely dry ditch and does not appear to be readily connected to any larger watercourses. | None observed |

disturbance from agricultural machinery in adjacent fields/hardstanding road)

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|------------|--|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| D22 | SE 56236 58351 | Within the Site | N/A | | | | | Unsuitable | Unsuitable for foraging (dry ditch), holt/resting place (small banks in between two arable fields that are likely disturbed by agricultural machinery) and unfavourable for commuting. | Unsuitable as dry. | None observed |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|-----|---------|---|---|--|--|--|
| D24 | SE 56247 57314 | Within the Site | Stream ~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 | Conservation notable fish suitability | Invasive plant species | | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Favourable for commuting (connected to Hurns Gutter) and holt/resting place (within adjacent woodland), but unfavourable for foraging (small watercourse with likely limited prey | Unsuitable for majority of species (small watercourse with slow flow) and is unfavourable for eel (small and shallow watercourse with slow flow and poor/little assemblage of structural habitat features). | Himalayan balsam and giant hogweed along banks | | |

source).
Potential otter
footprints
were
recorded
along Hurns
Gutter at
TN06 in close
proximity to
this stream.

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|---|----------------------------------|--|-----------------------|------|------|------|-------------------|---|--|---------------|-------------------|---------------------------------------|------------------------|-----|-----|-----|------|------|------|------|------|---|---|---|---|---|---|---|---|-------------|---|--|---------------|
| D25 | SE 55391 57097 | Within the Site | 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <table border="1"> <thead> <tr> <th colspan="3">WVHS features present</th> <th colspan="5">WVHS</th> <th rowspan="2">Otter suitability</th> <th rowspan="2">Conservation notable fish suitability</th> <th rowspan="2">Invasive plant species</th> </tr> <tr> <th>SI1</th> <th>SI2</th> <th>SI3</th> <th>SI 4</th> <th>SI 5</th> <th>SI 6</th> <th>SI 7</th> <th>SI 8</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>Y</td> <td>N</td> <td>Y</td> <td>N</td> <td>N</td> <td>N</td> <td>Y</td> <td>Sub-optimal</td> <td>Unfavourable for foraging and holt/resting place (small</td> <td>Unsuitable for majority of species and is unfavourable for eel (small,</td> <td>None observed</td> </tr> </tbody> </table> | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | Y | Y | N | Y | N | N | N | Y | Sub-optimal | Unfavourable for foraging and holt/resting place (small | Unsuitable for majority of species and is unfavourable for eel (small, | None observed |
| WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | | | | | | | | | | | | | | | | | | | | | | | |
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y | Y | N | Y | N | N | N | Y | Sub-optimal | Unfavourable for foraging and holt/resting place (small | Unsuitable for majority of species and is unfavourable for eel (small, | None observed | | | | | | | | | | | | | | | | | | | | | | | |

shallow ditch with likely limited prey source, hedgerow may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields), although is more favourable for commuting.

shallow ditch with slow flow and poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|--|
| D25a | SE 55682 56954 | Within the Site | 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

| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----|-----|-----|------|------|------|------|------|-------------|---|---|------------------------|
| Y | Y | Y | Y | N | N | N | N | Sub-optimal | Unfavourable 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 favourable for commuting (connected to Hurns Gutter). | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed |

| Reference | Grid reference | Distance and | Description |
|-----------|----------------|--------------|-------------|
|-----------|----------------|--------------|-------------|

| | from closest point from Site | direction from Site | | WVHS features present | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
|-------------|-------------------------------------|----------------------------|--|------------------------------|------------|------------|-------------|-------------|-------------|-------------|--------------------------|--|--|---|---------------|
| | | | | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| D25b | SE 55179 57173 | Within the Site | 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. | N | Y | N | Y | N | N | N | N | Unsuitable | Unfavourable 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 | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed |

agricultural machinery in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|-----|-------------|--|---|-------------------|---------------------------------------|------------------------|
| D25c | SE 55199 56767 | Within the Site | Ditch ~0.5-1m wide with ~0.2-0.5m depth of water that has a no perceptible flow; no obvious evidence of pollution; bank top heights are ~30cm and the bank material is earth; water level likely to fluctuate ~20cm seasonally; bankside trees are rare, scrub are dominant, herbs are dominant, with reed/sedges, short and tall grass are rare; bankside species include hawthorn, blackthorn, willowherb, common nettle, and cleavers; there are no aquatic macrophytes within the channel; the substrate is not visible; bordering land use is arable, and there is no evidence of current or recent management; there are culverts present and the ditch is dry at one end. | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| Y | Y | N | Y | N | N | N | N | Sub-optimal | Unfavourable for foraging, holt/resting place and commuting (small, fairly shallow ditch with likely limited prey source, hedgerow may provide resting place | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed | | |

cover but there is potential disturbance from agricultural machinery in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
|-----------|---|----------------------------------|---|-----|-----|-----|-----|------|-----|-----|-------------------|---|---|------|
| D25d | SE 55163 56890 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | | | N | Y | N | Y | N | N | N | N | Unsuitable | Unsuitable due to high levels of pollution. | Unsuitable due to high levels of pollution. | None |
| Reference | Grid reference | Distance and | Description | | | | | | | | | | | |

| | from closest point from Site | direction from Site | | | | | | | | | | |
|------------|-------------------------------------|----------------------------|------------|-------------|-------------|-------------|-------------|-------------|--------------------------|--|-------------------------------|--|
| D26 | SE 56489 56766 | ~5m north-east | | | | | | | | Not surveyed yet | | |
| | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|------------------|--|---|---|-------------|-------------|-------------|-------------|-------------|--------------------------|---|-------------------------------|------|
| D27 | SE 55962 56336 | Within the Site | Dry ditch; bank top heights are ~1m in height and the bank material is earth; bankside trees and scrub are dominant as located near edge of woodland; substrate is predominately earth; bordering land use is woodland and then arable; there is no evidence of current or recent management. | | | | | | | | | |
| | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | N | N | N | N | N | N | Y | N | Unsuitable | Unsuitable for foraging and (dry ditch), unfavourable or commuting (dry ditch but connected to Hurns Gutter), and favourable or | Unsuitable as dry. | None |

holt/resting
place (within
adjacent
woodland)

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|------------------|--|---|---|
| D28 | SE 56522 55683 | ~15m east | No ditch was identified during the extended Phase 1 habitat survey. |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|------------------|--|---|--|
| D30 | SE 56516 55523 | Within the Site | Ditch was not accessible during survey due to head high common nettle in field, however it is considered based on viewpoints from distance along a public footpath there is likely to be flowing water in the drain, which is covered by grass/tall ruderal along the earthy banks. Likely to be sub-optimal for water and unfavourable for otter foraging and holt creation, although more favourable for commuting. Considered unsuitable for majority of freshwater fish species and unfavourable for eel. Himalayan balsam and giant hogweed are present within the area and there is potential for these to be located along the ditch. |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|------------------|--|---|--------------------|
| D38 | SE 54732 55390 | Within the Site | Not surveyed yet |

WVHS features present

WVHS

| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|--|------|-----|-----|-----|-----|-------------|---|---|------------------------|
| | - | - | - | - | - | - | - | - | | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| D39a | SE 54100 55302 | ~10m north-east | 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 | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | Y | Y | N | Y | N | N | N | Y | Sub-optimal | Unfavourable for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, hedgerow may provide resting place | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed |

cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along the hardstanding road).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|---|------|------|------|------|------|------------|---|--|---------------------------------------|------------------------|
| D39b | SE 54053 55351 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| N | Y | N | Y | N | N | N | N | N | Unsuitable | Unfavourable for foraging, holt/resting place and commuting | Unsuitable for majority of species and is unfavourable for eel (small, | None observed | |

(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). shallow ditch with no flow and poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|-----|------|--|--|-------------------|---------------------------------------|------------------------|
| D40 | SE 54724 54677 | ~25m south-west | Not surveyed yet | | | | | | | | | | | |
| | | | WVHS features present | | | | | | WVHS | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| | - | - | | - | - | - | - | - | - | | | - | - | - |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|-----------|---|----------------------------------|-------------|--|--|--|--|--|--|--|--|--|
|-----------|---|----------------------------------|-------------|--|--|--|--|--|--|--|--|--|

D40a SE 54466 54954 Within the Site 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 culverts present.

| WVHS features present | | WVHS | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
|-----------------------|-----|------|------|------|------|------|------|-------------------|--|---|---------------|
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| N | Y | N | N | N | N | Y | N | Unsuitable | Unfavourable 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 | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed |

along
hardstanding
road).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|-----------------------|---|----------------------------------|--|-----|-----|-----|-----|-------------------|--|---|---------------|--|
| D40b | SE 54196 55051 | Within the Site | 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. | | | | | | | | | |
| WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| N | Y | N | N | N | N | Y | N | Unsuitable | Unfavourable for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed | |

there is potential disturbance from agricultural machinery in adjacent fields and vehicles along hardstanding road).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|----------------------------------|---|------|------|------|------|-------------------|--|--|-------------------|---------------------------------------|------------------------|-----|-----|-----|------|------|------|------|------|---|---|---|---|---|---|---|---|---------|--|--|---------------|
| D41 | SE 53857 56143 | Within the Site | 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th colspan="3">WVHS features present</th> <th colspan="5">WVHS</th> <th rowspan="2">Otter suitability</th> <th rowspan="2">Conservation notable fish suitability</th> <th rowspan="2">Invasive plant species</th> </tr> <tr> <th>SI1</th> <th>SI2</th> <th>SI3</th> <th>SI 4</th> <th>SI 5</th> <th>SI 6</th> <th>SI 7</th> <th>SI 8</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>N</td> <td>Y</td> <td>Y</td> <td>Y</td> <td>N</td> <td>Y</td> <td>Y</td> <td>Optimal</td> <td>Unfavourable for foraging, and commuting (small, shallow ditch</td> <td>Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch</td> <td>None observed</td> </tr> </tbody> </table> | | WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | Y | N | Y | Y | Y | N | Y | Y | Optimal | Unfavourable for foraging, and commuting (small, shallow ditch | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch | None observed |
| WVHS features present | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | | | | | | | | | | | | | | | | | | | | | | |
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y | N | Y | Y | Y | N | Y | Y | Optimal | Unfavourable for foraging, and commuting (small, shallow ditch | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch | None observed | | | | | | | | | | | | | | | | | | | | | | |

with likely limited prey source, is connected to The Foss), and favourable for holt/resting place (within adjacent woodland).
with no flow and poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|---|-----|-----|-----|-----|------|------------|--|--|---------------------------------------|------------------------|
| D42a | SE 53629 55969 | ~5m 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 | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| N | Y | N | Y | N | N | N | N | N | Unsuitable | Unfavourable for foraging, and commuting (small, shallow ditch | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch | None observed | |

with likely limited prey source, is connected to The Foss), and favourable for holt/resting place (within adjacent woodland).
with no flow and poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|------|-----|-----|---|---|-------------------|---------------------------------------|------------------------|---|
| D43 | SE 53334 56060 | ~45m south | Not surveyed yet | | | | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|--|--|--|--|------|--|--|--|--|
| D44 | SE 53166 56118 | ~15m south | Not surveyed yet | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | | |

| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-------------------|---|----------------------------------|---|-----|-----|------|-------------------|---------------------------------------|------------------------|--|---|------------------------|
| | - | - | - | - | - | - | - | - | | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
| D45 (Wood Gutter) | SE 52572 56288 | Within the Site | Drain 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 | Conservation notable fish suitability | Invasive plant species | | | |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | Y | Y | Y | Y | N | N | Y | N | Sub-optimal | Unfavourable for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey source, trees and scrub may provide resting place cover but | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed |

there is potential disturbance from agricultural machinery in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|-----|------|-----|-----|-------------------|---|------------------------|---------------|
| D48 | 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 | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | | | Y | N | N | N | N | N | N | N | Unsuitable | Unsuitable for foraging (dry ditch), and unfavourable for holt/resting place and commuting (small, dry ditch with likely limited prey source, | Unsuitable as dry. | None observed |

grass may provide resting place cover but there is potential public disturbance (caravan/camping site). Anecdotal evidence that otter feed in nearby P132.

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|-----|---|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| D50 | SE 51947 56500 | Within the Site | - | - | - | - | - | - | - | - | - | - | |
| | | | | | | | | | | | | | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |

D55 SE 51492 56656 Within the Site 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 | Conservation notable fish suitability | Invasive plant species | |
|-----------------------|-----|-----|------|------|------|------|------|-------------------|--|------------------------|---------------|
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| N | N | N | N | N | N | Y | N | Unsuitable | Unsuitable for foraging (dry ditch), and unfavourable for holt/resting place and commuting (small dry shallow 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 Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|-------------|
|-----------|---|----------------------------------|-------------|

D56 SE 51274 56313 Within the Site Drain ~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 | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|------|------|------|------|------|------|---------|--|---|---------------------------------------|------------------------|
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | |
| Y | Y | Y | Y | N | Y | Y | Y | Optimal | Unfavourable 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 | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed | |

adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|------|------|------|------|------|---|---|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| D57 | SE 52098 55931 | ~10m south-east | - | - | - | - | - | - | - | - | - | - | - | |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|------|------|------|------|------|---|---|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| D59 | SE 51986 55712 | ~5m south-east | - | - | - | - | - | - | - | - | - | - | - | |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|------|------|------|------|------|--|--|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| | | | | | | | | | | | | | | |

| | point from Site | | | | | | | | | | | | | |
|-----------|---|----------------------------------|---|-------------|-------------|-------------|-------------|-------------|------------|--|--|-------------------------------|--|--|
| D60 | SE 51911 55606 | ~10m south-east | | | | | | | | | Not surveyed yet | | | |
| | WVHS features present | | | WVHS | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| | - | - | - | - | - | - | - | - | | - | - | - | | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
| D66 | SE 50989 55408 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species | | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| | Y | N | N | Y | N | N | N | N | Unsuitable | Unfavourable for foraging, holt/resting place and commuting (small, shallow polluted ditch | Unsuitable for majority of species and is unfavourable for eel (small, shallow polluted ditch with no flow | None observed | | |

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 poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|------------|---|----------------------------------|---|-------------|-------------|-------------|-------------|-------------|--------------------------|---|-------------------------------|---------------|
| D70 | SE 50821 54740 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | N | N | N | Y | N | N | N | N | Unsuitable | Unsuitable for foraging (dry ditch) and unfavourable for foraging, holt/resting place and commuting | Unsuitable as dry. | None observed |

(dry ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery and cows in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | WVHS features present | | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|-----|---|---|---|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | | |
| D71 | SE 51161 54625 | ~5m south-east | - | - | - | - | - | - | - | - | - | - | - | - | |
| | | | | | | | | | | | | | | | |

D71a SE 51135 54629 Within the Site 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 are 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 | Conservation notable fish suitability | Invasive plant species | | |
|-----------------------|-----|-----|------|------|------|------|------|-------------------|---------------------------------------|---|--------------------|---------------|
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | |
| Y | N | N | N | N | N | N | N | N | Unsuitable | Unsuitable for foraging (dry ditch), and unfavourable for holt/resting place and commuting (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 Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|---|-----|-----|-----|------|-------------|---|---|-------------------|---------------------------------------|------------------------|
| D73 | SE 50796 53987 | Within the Site | 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. | | | | | | | | | | |
| | | | WVHS features present | | | | WVHS | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| N | Y | Y | Y | N | N | N | Y | Sub-optimal | Unfavourable 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 | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features). | None observed | | |

cover but there is potential disturbance from agricultural machinery in adjacent fields and vehicles along adjacent road).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
|-----------|---|----------------------------------|---|-----|-----|-----|-----|------|-------------------|---------------------------------------|------------------------|
| D76 | SE 50716 53075 | ~15m south-east | Not surveyed yet | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
| D76a | SE 50416 52854 | ~5m north-west | Ditch ~0.5-1m wide and ~0.2-0.5m deep that has no perceptible flow; pollution present from agricultural runoff; bank top heights are ~30cm and the bank material is earth; potential fluctuation of water level is likely to be ~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 broad-leaved dock; 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 | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-------------|--|--|------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| N | N | Y | Y | N | N | N | Y | Sub-optimal | Unfavourable for foraging, holt/resting place and commuting (small, fairly 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 adjacent road). | Unsuitable for majority of species and is unfavourable 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 Site | Distance and direction from Site | Description | | | | | | | | | |
|-----------|---|----------------------------------|--|------|------|------|------|-------------|---|---------------------------------------|------------------------|--|
| D78 | SE 49737 52730 | Within the Site | Same drain as D78b (see below) but ditch becomes dry to the southwest (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 | Conservation notable fish suitability | Invasive plant species | |
| SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | |
| Y | Y | Y | Y | N | N | N | N | Sub-optimal | Unfavourable 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 | Unsuitable as dry. | None observed | |

adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|------|---|---------|---|---|---------------------------------------|------------------------|
| D78b | SE 50238 53357 | Within the Site | Drain~ 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 are is a culvert. | | | | | | | | | | |
| | | | WVHS features present | | | | WVHS | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| Y | Y | Y | Y | Y | Y | Y | Y | Y | Optimal | Unfavourable for foraging, holt/resting place and commuting (small, fairly shallow ditch with likely limited prey source, trees and scrub | Unsuitable for majority of species and is unfavourable for eel (small, fairly shallow ditch with no flow and poor/little assemblage of structural | None observed | |

may provide habitat resting place features). cover but there is potential disturbance from agricultural machinery in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|--|------------|------------|------------|------------|-------------|------------|---|--------------------------|--|-------------------------------|
| D79 | SE 49767 52710 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| | Y | N | N | N | N | N | N | N | Unsuitable | Unsuitable for foraging (dry), and unfavourable for holt/resting place and commuting (small dry | Unsuitable as dry. | None observed | |

ditch, trees and scrub may provide resting place cover but there is potential disturbance from agricultural machinery in adjacent fields and hardstanding track).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
|-----------|---|----------------------------------|---|------------|------------|------------|-------------|------------|------------|------------|--------------------------|--|---|---------------|
| D82 | SE 49748 52381 | ~20m south | Ditch ~1-2m wide and ~0.06-0.1m deep that has no perceptible flow; no obvious evidence of pollution; bank top heights are ~3m and ~1m and the bank material is earth respectively; potential fluctuation of water level is likely to be infrequent; bankside trees are abundant, scrub dominant, herbs are abundant, reed/sedges and short grass are rare, and tall grass are occasional; bankside species include oak, blackthorn, cow parsley, white dead nettle, cleavers, and cocks foot; 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 is a culvert. | | | | | | | | | | | |
| | | | WVHS features present | | | | WVHS | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | | | Y | Y | Y | Y | N | N | Y | Y | Sub-optimal | Unfavourable for foraging, holt/resting | Unsuitable for majority of species and is | None observed |

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 adjacent road). unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of structural habitat features).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|--|
| D91 | SE 48732 50513 | ~10m 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 | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-------------|---|---|------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | N | Y | Y | N | N | N | Y | Sub-optimal | Unfavourable 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 unfavourable 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 Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|------|-------------|---|--|-------------------|---------------------------------------|------------------------|
| D94 | SE 48736 49267 | ~10m 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 | Conservation notable fish suitability | Invasive plant species |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | | |
| Y | Y | Y | Y | N | N | Y | N | Sub-optimal | Unfavourable for foraging and commuting (small, fairly shallow ditch with likely limited prey source) and favourable for holt/resting place (within adjacent woodland). | Unsuitable for majority of species and is unfavourable 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 Site | Distance and direction from Site | Description | | | | | | | | | | |

| | | | |
|------------|-------------------|-----------------|--|
| D95 | SE 48638 48966 | Within the Site | 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 | Conservation notable fish suitability | Invasive plant species | |
|-----------------------|-----|-----|-----|------|-----|-----|-----|-------------------|--|------------------------|---------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | Y | N | Y | N | N | Y | N | Sub-optimal | Unsuitable for foraging (dry), unfavourable for holt/resting place and commuting (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 Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|-------------|
|-----------|---|----------------------------------|-------------|

D96 SE 48486 48217 Within the Site 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 | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|------|-----|-----|-----|---------|--|---------------------------------------|------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | Y | Y | Y | N | Y | N | Y | Optimal | Unsuitable for foraging (dry), and unfavourable for holt/resting place and commuting (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 Site | Distance and direction from Site | Description | | | | | | | | | | | | |
|-----------|---|----------------------------------|---|-----|-----|-----|-----|------|-----|-----|-------------|--|--------------------|---------------------------------------|------------------------|
| D100 | SE 48433 47054 | Within the Site | Not surveyed yet | | | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| | | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | | |
| D101 | SE 48228 46900 | Within the Site | 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. | | | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| | | | Y | Y | Y | N | N | N | Y | Y | Sub-optimal | Unsuitable for foraging (dry), unfavourable for commuting (small dry | Unsuitable as dry. | None observed | |

ditch) and favourable for holt/resting place (within adjacent woodland).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|-----|-----|-----|-----|------|-------------------|---------------------------------------|------------------------|---|---|
| D102 | SE 4863 846612 | ~35m east | Not surveyed yet | | | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| | | | - | - | - | - | - | - | - | - | - | - | - |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|-----|------|-------------------|---------------------------------------|------------------------|---|--------------------|------------------------|
| D103 | SE 48587 46520 | ~20m 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 | Conservation notable fish suitability | Invasive plant species | | | |
| | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | | | Y | N | Y | N | N | N | N | N | Unsuitable | Unsuitable for foraging (dry), unfavourable | Unsuitable as dry. | Himalayan balsam along |

for commuting (small dry ditch) and favourable for holt/resting place (within adjacent woodland). banks and within channel.

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
|-----------|---|----------------------------------|--|-----|-----|-----|-----|-------------------|---------------------------------------|--|--------------------|---------------|
| D104 | SE 48026 46412 | Within the Site | 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 | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| | Y | Y | Y | Y | N | N | Y | N | Sub-optimal | Unsuitable for foraging (dry), unfavourable for holt/resting place and commuting (small dry ditch, trees and scrub may provide resting place | Unsuitable as dry. | None observed |

cover but there is potential disturbance from agricultural machinery in adjacent fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
|------------------------------|---|----------------------------------|--|------------|------------|------------|------------|---------|--|---|-------------------------------|
| D107 | SE 47800 45792 | Within the Site | Drain ~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 | | | | | | | | | | | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| Y | Y | Y | Y | N | N | Y | Y | Optimal | Unfavourable for foraging, holt/resting place and commuting (small, shallow ditch with likely limited prey | Unsuitable for majority of species and is unfavourable for eel (small, shallow ditch with no flow and poor/little assemblage of | None observed |

source, scrub structural
 may provide habitat
 resting place features).
 cover but
 there is
 potential
 disturbance
 from
 agricultural
 machinery in
 adjacent
 fields).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|--|
| D108 | SE 47791 45568 | Within the Site | No ditch was identified during the extended Phase 1 habitat survey |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|--|
| D109 | SE 47562 45531 | ~10m north-west | Drain ~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. |

WVHS features present

| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----|-----|-----|-----|-----|-----|-----|-----|---------|--|---|------------------------|
| Y | N | Y | Y | Y | N | Y | Y | Optimal | Unfavourable 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 unfavourable 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 Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|---|
| D111 | SE 47744 45386 | Within the Site | 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 | | | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-------------------|---|----------------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| N | N | Y | Y | N | Y | Y | Y | Sub-optimal | Unsuitable for foraging (dry), unfavourable 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 Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|------------------|
| D115 | SE 46927 44531 | ~25m west | Not surveyed yet |

| | WVHS features present | | | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | | |
|-----------|---|----------------------------------|-----------------------|------|------|------|------|------|-------------------|---------------------------------------|------------------------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | | | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | | | |
| D116 | SE 46975 44463 | ~25m west | | | | | | | | | | | | |
| | | | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | | | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | | | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | | | |
| D120 | SE 47376 44088 | Within the Site | | | | | | | | | | | | |
| | | | WVHS features present | | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | | | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | | | - | - | - | - | - | - | - | - | - | - | - | |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
|-----------|---|----------------------------------|------------------------------|-------------|-------------|-------------|-------------|--------------------------|--|--|-------------------------------|
| D121 | SE 47360 44039 | Within the Site | Not surveyed yet | | | | | | | | |
| | | | WVHS features present | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
| D122 | SE 47351 43995 | Within the Site | Not surveyed yet | | | | | | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |

| | | | | | | | | | | | | |
|------------------|--|---|------------------------------|-------------|-------------|-------------|-------------|-------------|--------------------------|--|-------------------------------|--|
| D124 | SE 45507 40381 | ~25m north- west | | | | | | | Not surveyed yet | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | | Description | | | |
| D126 | SE 45901 39651 | Within the Site | | | | | | | Not surveyed yet | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - | |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | | | | | | | Description | | | |
| D128 | SE 46098 39485 | Within the Site | | | | | | | Not surveyed yet | | | |
| | | | WVHS features present | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |

| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|---|------|------|------|------|------|-------------------|---------------------------------------|------------------------|
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| D129 | SE 46346 38515 | Within the Site | Not surveyed yet | | | | | | | | |
| | WVHS features present | | | | | | | | | | |
| | SI1 | SI2 | SI3 | SI 4 | SI 5 | SI 6 | SI 7 | SI 8 | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| D129a | SE 46682 37050 | Within the Site | 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 | | | | | | | | | | |

| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----|-----|-----|-----|-----|-----|-----|-----|-------------|---|--|------------------------|
| Y | N | Y | Y | N | Y | Y | N | Sub-optimal | Unfavourable for foraging, holt/resting place and commuting (shallow ditch with likely limited prey source, trees and scrub may provide resting place cover). | Unsuitable for majority of species and is unfavourable for eel (shallow ditch with no flow and poor/little assemblage of structural habitat features). | Himalayan balsam |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
|-----------|---|----------------------------------|--|------------------------------|-----|-----|-----|-------------|-------------------|---------------------------------------|------------------------|--|
| D134 | SE 47091 33963 | Within the Site | 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 | | | | |
| | | | | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|-------------|---|---|---------------|
| Y | Y | N | Y | Y | N | N | Y | Sub-optimal | Unfavourable 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 unfavourable 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 Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|---|
| D138 | SE 47336 30917 | Within the Site | 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.

| WVHS features present | | | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-------------------|--|---|---------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| Y | N | Y | Y | N | N | N | Y | Sub-optimal | Unfavourable 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 unfavourable 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 Site | Distance and | Description |
|-----------|---|--------------|-------------|
|-----------|---|--------------|-------------|

| | | direction from Site | | | | | | | | | | |
|-------------|-------------------|--------------------------------|---|------------------------------|------------|------------|------------|-------------|---|--|-------------------------------|--|
| | | | | WVHS features present | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| D139 | SE 47228 30877 | Within the Site | 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. | | | | | | | | | |
| Y | Y | N | Y | N | N | N | N | Sub-optimal | Unsuitable for foraging (dry), and unfavourable for holt/resting place and commuting (small dry ditch with likely limited prey source, scrub and grass may provide resting place cover but there is potential disturbance from agricultural | Unsuitable as dry. | None observed | |

machinery in adjacent fields and vehicles along adjacent road).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|---|
| D140 | SE 47201 30677 | ~25m west | No ditch was identified during the extended Phase 1 habitat survey. |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|------------------|
| D141 | SE 47824 30284 | ~5m south | Not surveyed yet |

| WVHS features present | | | | | | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|---|-------------------|---------------------------------------|------------------------|
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description |
|-----------|---|----------------------------------|-------------|
|-----------|---|----------------------------------|-------------|

| D145 | SE 48779 29076 | Within the Site | No ditch was identified during the extended Phase 1 habitat survey | | | | | | | | | |
|------------------------------|--|---|--|-------------|------------|------------|------------|------------------------------|--|--|---------------|--|
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | | |
| D145a | 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. | | | | | | | | | |
| WVHS features present | | | | WVHS | | | | Otter suitability | Conservation notable fish suitability | Invasive plant species | | |
| SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | | | |
| N | N | N | Y | N | N | N | N | Unsuitable | Unfavourable for foraging, holt/resting place and commuting (small ditch with likely limited prey source, scrub may provide resting place cover but there is | Unsuitable for majority of species and is unfavourable for eel (small ditch with no flow and poor/little assemblage of structural habitat features). | None observed | |

potential disturbance from agricultural machinery in adjacent fields and horses from adjacent running track).

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
|-----------|---|----------------------------------|-----------------------|-----|-----|------|-----|-----|-------------------|---------------------------------------|------------------------|
| D150 | SE 63930 51967 | ~10m south-east | Not surveyed yet | | | | | | | | |
| | | | WVHS features present | | | WVHS | | | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | SI8 | | | |
| | - | - | - | - | - | - | - | - | - | - | - |

| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
|-----------|---|----------------------------------|------------------|--|--|--|--|--|--|--|--|
| D152 | SE 64290 51758 | Within the Site | Not surveyed yet | | | | | | | | |

| | WVHS features present | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
|-----------|---|----------------------------------|------------------|-----|-----|-----|-----|------|-------------------|---------------------------------------|------------------------|
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - |
| Reference | Grid reference from closest point from Site | Distance and direction from Site | Description | | | | | | | | |
| D153 | SE 64413 51728 | Within the Site | Not surveyed yet | | | | | | | | |
| | WVHS features present | | | | | | | WVHS | Otter suitability | Conservation notable fish suitability | Invasive plant species |
| | SI1 | SI2 | SI3 | SI4 | SI5 | SI6 | SI7 | | | | |
| | - | - | - | - | - | - | - | - | - | - | - |

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