

**A66 Northern Trans-Pennine Project
TR010062**

**3.4 Environmental Statement
Appendix 6.3 Phase 1 Habitat Survey**

APFP Regulations 5(2)(a)

Planning Act 2008

**Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009**

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Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed
Forms and Procedure)
Regulations 2009**

A66 Northern Trans-Pennine Project
Development Consent Order 202x

**3.4 ENVIRONMENTAL STATEMENT
APPENDIX 6.3 PHASE 1 HABITAT SURVEY**

| | |
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6.3 Phase 1 Habitat Survey Report

6.3.1 Introduction

- 6.3.1.1 The A66 Northern Trans-Pennine project is a programme of works to improve the A66 between the M6 at Penrith and A1 at Scotch Corner.
- 6.3.1.2 Between the M6 and the A1(M) the existing A66 is approximately 80km in length. Along this length it is intermittently dualled, with approximately 30km of single carriageway, in six separate sections, making the route accident prone and unreliable.
- 6.3.1.3 The route carries high levels of freight traffic and is an important route for tourism and connectivity to local communities. The variable road standards, together with the lack of available diversionary routes when incidents occur, affects road safety, reliability, resilience and attractiveness of the route. For a full project description see Chapter 2: The Project (Application Document 3.2).

Scope of the Document

- 6.3.1.4 This report presents desk study data and baseline survey results relating to habitats.
- 6.3.1.5 Baseline surveys were conducted during 2020, 2021 and 2022. It is intended that the information in this report will be used in conjunction with data from other surveys to identify and assess potential implications of the Project in relation to habitats and inform any mitigation and compensation required. This baseline report can be used to accompany any future planning application and associated Environmental Impact Assessment (EIA) for the project.

6.3.2 Legislation and Policy Framework

Legislation

The Conservation of Habitats and Species (CHS) Regulations 2017 (as amended by the EU Exit Regulations 2019) (the 'Habitat Regulations 2017')

- 6.3.2.1 The Habitats Regulations 2017 offer protection to a number of plant and animal species via the designation of Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In the United Kingdom these Regulations are implemented through the Wildlife and Countryside Act (WCA) 1981 (as amended).
- 6.3.2.2 The Habitats Regulations 2017 also offer protection to a number of 'European Protected Species' (EPS), and make it an offence to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4.
- 6.3.2.3 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 does not make any substantive changes to the protection of SACs, SPAs or species classed as EPS as protected under the Habitats Regulations 2017. It does however introduce

amendments in light of the United Kingdom's withdrawal from the European Union, including to change the nomenclature of the protected sites network within the UK. The Natura 2000 site network, comprising SPAs, SACs and Ramsar sites is now titled the National Sites Network within the UK. The National Sites Network does not include Ramsar sites however it is noted¹ that many Ramsar sites overlap with SAC and SPA sites and all Ramsar sites continue to be protected in the same way as SACs and SPAs.

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

- 6.3.2.4 The Wildlife and Countryside Act 1981 (as amended) is the primary legislation covering endangered species in England and sets out the framework for the designation of SSSI. It confers differing levels of protection on species themselves, their habitats, or both, depending on their conservation status.
- 6.3.2.5 Species offered protection by the WCA Act are listed in a series of schedules. These schedules are subject to a rolling review on a five yearly basis. Schedule 8 of the WCA Act lists plants which are afforded protection under the section 13 of the WCA Act. Subject to certain provisions, it is an offence to:
- Intentionally or recklessly pick, uproot or destroy any wild plant included in Schedule 8; or any seed or spore attached to any such wild plant
 - Not being an authorised person, intentionally or recklessly uproot any wild plant not included in that Schedule.

Natural Environment and Rural Communities (NERC) Act 2006

- 6.3.2.6 The UK Biodiversity Action Plan (UKBAP) covering 2011-2020 has been superseded by the UK Post-2010 Biodiversity Framework. The Framework identifies 65 Priority Habitats and 1150 Priority Species that are in need of protection from activities that threaten their long-term survival. This list has been used to define habitats and species of 'Principal Importance' in England (the Section 41 list) as required by the Natural Environment and Rural Communities (NERC) Act 2006.
- 6.3.2.7 Section 41 includes 402 vascular and non-vascular plants and 56 Habitats of Principle Importance (HoPI) (Natural England, 2022)².
- 6.3.2.8 All planning decisions must be made with regard for the conservation of Section 41 List species and habitats and any priority actions (Natural England, 2014)³ associated with them. Priority actions include habitat

¹ Policy paper 'Changes to the Habitats Regulations 2017' published by Defra on 1 January 2021 and available here: <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017> [accessed April 2022]

² Natural England (2022) Habits of principle importance, available at: <https://webarchive.nationalarchives.gov.uk/ukgwa/20140712055944/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>

³ Natural England (2014) Priority Actions for S41 Species, available at: <http://publications.naturalengland.org.uk/file/6518755878240256>

management, policy or legislation, survey or monitoring, research, species management, and education or awareness raising.

Environment Act 2021

- 6.3.2.9 The Environment Act 2021 received Royal Assent on 9th November 2021 and is expected to become fully mandated within the next years. The act creates a post Brexit framework to protect and enhance the natural environment. Through amendments to the Town and Country Planning Act 1990, the Act will require all planning permissions in England to be granted subject to a new general pre-commencement condition that requires approval of a biodiversity net gain plan. This will ensure the delivery of a minimum of 10% measurable biodiversity net gain. The key tool to calculate this will be the Defra Biodiversity 3.0 Metric. Works to deliver biodiversity net gain can be carried out either onsite or offsite or through the purchase of 'biodiversity credits' from the Secretary of State. However, this flexibility may be removed (subject to regulations) if the onsite habitat is 'irreplaceable'. Both onsite and offsite enhancements must be maintained for at least 30 years after completion of any development.

National level policy

National planning statement for national networks

- 6.3.2.10 The primary policy basis for deciding whether or not to grant a Development Consent Order (DCO) is the National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014)⁴, which sets out policies to guide how DCO applications will be decided and how the effects of national networks infrastructure should be considered by the relevant decision maker. The policies for biodiversity and ecological conservation include statements that:

“Biodiversity is the variety of life in all its forms and encompasses all species of plants and animals and the complex ecosystems of which they are a part. Government policy for the natural environment is set out in the Natural Environment White Paper (NEWP). The NEWP sets out a vision of moving progressively from net biodiversity loss to net gain, by supporting healthy, well-functioning ecosystems and establishing more coherent ecological networks that are more resilient to current and future pressures...” (NPSNN paragraph 5.20)

- 6.3.2.11 The NPSNN also advises:

“In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment.” (NPSNN paragraph 5.26)

⁴ Department for Transport (2014) National Policy Statement for National Networks, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387222/npsnn-print.pdf

6.3.2.12 Table 1: *NPSNN* of relevance to habitats identifies the *NPSNN* policies relevant to habitats.

Table 1: *NPSNN* of relevance to habitats

| Relevant <i>NPSNN</i> paragraph reference | Requirement of the <i>NPSNN</i> (paraphrase) |
|---|--|
| 5.22 | Ensure environmental statement clearly sets out any likely significant effects on internationally, nationally and locally designated sites of ecological or geological conservation importance (including those outside England) on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity and that the statement considers the full range of potential impacts on ecosystems. |
| 5.23 | The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity conservation interests. |
| 5.29 | Ensure proposals mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity are acceptable. |
| 5.31 | Sites of regional and local biodiversity interest (including Local Nature Reserves, Local Wildlife Sites, and Nature Improvement Areas) have a fundamental role to play in meeting overall national biodiversity targets, in contributing to the quality of life and the well-being of the community, and in supporting research and education. The Secretary of state should give due consideration to such regional or local designations. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent. |
| 5.32 | Ancient woodland is a valuable biodiversity resource for both its species diversity and its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this. |
| 5.33 | Development proposals potentially provide many opportunities for building in beneficial biodiversity features as part of good design. When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments. The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered. |
| 5.34 and 5.35 | Include appropriate mitigation measures as an integral part of their proposed development, including identifying where and how these will be secured. In particular, the applicant should demonstrate that: during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works; during construction and operation, best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised (including as a consequence of transport access arrangements); |

| Relevant NPSNN paragraph reference | Requirement of the NPSNN (paraphrase) |
|------------------------------------|--|
| | habitats will, where practicable, be restored after construction works have finished; developments will be designed and landscaped to provide green corridors and minimise habitat fragmentation where reasonable; opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals, for example through techniques such as the 'greening' of existing network crossing points, the use of green bridges and the habitat improvement of the network verge. |
| 5.36 | Consider what appropriate requirements should be attached to any consent and/or in any planning obligations entered into in order to ensure that mitigation measures are delivered. |
| 5.37 | Take account of what mitigation measures may have been agreed between the applicant and Natural England and/or the MMO, and whether Natural England and/or or the MMO has granted or refused, or intends to grant or refuse, any relevant licences, including protected species mitigation licences. |
| 5.38 | Take account of what mitigation measures may have been agreed between the applicant and Natural England and/or the MMO, and whether Natural England and/or or the MMO has granted or refused, or intends to grant or refuse, any relevant licences, including protected species mitigation licences. |

National planning policy framework

- 6.3.2.13 The *National planning policy framework (NPPF)* (Ministry of Housing, Communities & Local Government, 2021)⁵ originally published in March 2012 and most recently updated in July 2021, sets out the government's planning policies for England and provides a framework within which locally prepared plans can be produced. The NPPF is "*an important and relevant matter to be considered in decision making for NSIP*"⁶.

Regional and local level policy

- 6.3.2.14 The designation and protection afforded to Local Nature Reserves (LNR), Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINCs), County Wildlife Sites (CWS), and locally important habitats and species are controlled by local council policies. Although the UK Biodiversity Action Plan (BAP) has been superseded, BAPs are still widely used at county level to support Biodiversity 2020 (Department for Environment, Food and Rural Affairs, 2011)⁷

⁵ Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁶ Nationally Significant Infrastructure Projects. HM Government (2008) Planning Act 2008, available at <https://www.legislation.gov.uk/ukpga/2008/29/contents>

⁷ Department for Environment Food and Rural Affairs (2011) Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services. Department for Environment, Food and Rural Affairs, London.

6.3.2.15 The following local planning policies and documents are relevant to this report:

- *Eden Local Plan 2014-2032* (Eden District Council, 2014)⁸ Policy ENV1 and Policy ENV2⁸
- *County Durham Plan* (Adopted 2020) (Durham County Council, 2020)⁹ Policy 26, Policy 40, Policy 41, Policy 42 and Policy 43
- *Richmondshire Local Plan (2012-2028)* adopted 2014 (Richmondshire District Council, 2014)¹⁰ Core Policy CP12
- *Cumbria BAP* (Cumbria Biodiversity Partnership, 2001)¹¹.
- *Durham County Council BAP (2012/13)* now listed on North East England Nature Partnership (North East England Nature Partnership, 2013)¹².
- *Richmondshire District Councils BAP* (Richmond County Council, 2014)¹³.

6.3.2.16 Habitats identified as priorities within local BAPs are listed in Table 2: Habitats listed within local BAPs. Where possible duplicate habitat definitions have been combined. Where a habitat definition in one BAP is included within another BAP without being explicit (XX) indicates the overlap.

Table 2: Habitats listed within local BAPs. Where possible duplicate habitat definitions have been combined. Where a habitat definition in one BAP is included within another BAP without being explicit (XX) indicates the overlap

| Habitat | Cumbria BAP | Durham BAP | Richmondshire BAP |
|--|-------------|------------|-------------------|
| Standing water | | X | |
| Mesotrophic standing waters | X | (XX) | X |
| Rivers and streams | X | X | X |
| Cities towns and villages | X | | X |
| Honeycomb worm reefs | X | | |
| Farmland | | | X |
| Ancient and/ or species rich hedgerows | X | (XX) | X |
| Native hedgerows | (XX) | X | (XX) |
| Floodplain grassland | | | X |
| Calcareous grassland | X | (XX) | X |

⁸ Eden District Council (2014) *Eden Local Plan 2014 to 2032*, available at: <https://www.eden.gov.uk/media/5032/edenlocalplan2014-2032finalwithoutforeword.pdf>

⁹ Durham Council (2020) *County Durham Plan – Adopted 2020*, available at: <https://www.durham.gov.uk/media/34069/County-Durham-Plan-adopted-2020-/pdf/CountyDurhamPlanAdopted2020vDec2020.pdf?m=637424969331400000>

¹⁰ Richmond County Council (2014) *Richmondshire Local Plan 2012 - 2028 Core Strategy* (Adopted 9 December 2014), available at: <https://www.richmondshire.gov.uk/media/9616/core-strategy-2012-28.pdf>

¹¹ Cumbria Biodiversity Partnership (2001) *The Cumbria Biodiversity Action Plan*, available at: https://www.cumbria.gov.uk/planning-environment/conservation/biodiversity/bio_bap.asp

¹² North East England Nature Partnership (2013) *Biodiversity Priorities*, available at: <https://neenp.org.uk/natural-environment/biodiversity-priorities/>

¹³ Richmond County Council (2014) *Richmondshire Biodiversity Action Plan*, available at: <https://www.richmondshire.gov.uk/media/5114/richmondshire-biodiversity-action-plan.pdf>

| Habitat | Cumbria BAP | Durham BAP | Richmondshire BAP |
|---|-------------|------------|-------------------|
| Magnesian Limestone Grassland | | X | |
| Hay meadows and lowland pastures | X | X | X |
| Moorland edge including Upland acid grassland | | | X |
| Limestone pavement | X | | |
| Purple moorgrass and rush pasture | X | | |
| Blanket bog | X | | |
| Upland heathland | X | | X |
| Lowland heath | | X | |
| Basin mire | X | | |
| Lowland raised mire | X | | |
| Reedbed | X | X | X |
| Fen | | X | X |
| Woodland | | | X |
| Lowland wood pasture and parkland | | X | X |
| Veteran trees | | X | |
| Upland oak woodland | X | (XX) | (XX) |
| Upland mixed ashwood | X | (XX) | (XX) |
| Wet woodland | X | X | (XX) |
| Ancient Semi-Natural woodland | | X | (XX) |
| Other broadleaved woodland | | X | (XX) |
| Scrub | | X | |
| Early successional brownfield sites | | X | |
| Transport corridors | | X | |
| Waxcap grassland | | X | |
| Coastal habitats | | X | |

Other relevant policy and guidance

6.3.2.17 In addition to compliance with the *NPSNN* and *NPPF*, this report has been written in accordance with professional standards and guidance. The standards and guidance which relate to the assessment are:

- *Guidance for Ecological Impact Assessment in the United Kingdom Third Edition* (Chartered Institute of Ecology and Environmental Management, 2018)¹⁴
- *Design Manual for Roads and Bridges (D6MRB) LA 108 Biodiversity (DMRB LA 108)*, Revision 1, March 2020
- *DMRB LD 118 Biodiversity Design (DMRB LD 118)*, Revision 1, March 2020 (Highways England, 2020c)¹⁵

¹⁴ Chartered Institute of Ecology and Environmental Management (2018) *Guidance for Ecological Impact Assessment in the United Kingdom Third Edition*

¹⁵ Highways England (2020c) *Design Manual for Roads and Bridges LD 118 Biodiversity Design*, Revision 1, March 2020, available at:

6.3.3 Methodology

Desk study

- 6.3.3.1 Desk study data relating to protected or otherwise notable species within 2km¹⁶ of the Order Limits of the Project was requested from the following Local Record Centres (LRC):
- Environmental Records Information centre (ERIC) North East
 - Cumbria Biodiversity Data Centre (CBDC)
 - North and East Yorkshire Ecological Data Centre (NEYEDC)
- 6.3.3.2 The following information was extracted from the desk study records returned:
- species listed as invasive and notable¹⁷
 - locations of ancient woodland indicator (AWI) species
 - locally rare or otherwise notable species from Vice County BSBI recorders
- 6.3.3.3 Aerial photos and Ordnance Survey maps were used to classify habitats where land access was not possible for field survey work. This was carried out in accordance with Phase 1 Habitat survey methodology (Joint Nature Conservation Committee, 2010)¹⁸.

Field survey

- 6.3.3.4 Field surveys were undertaken during 2020, 2021 and 2022.
- 6.3.3.5 Habitats were identified and mapped using standard Phase 1 Habitat survey methodology (Joint Nature Conservation Committee, 2010)¹⁸. This included the mapping of habitats using polygons for areas, points for individual features (such as isolated trees) and lines for linear features (such as fence lines). Habitats were classified based principally on their vegetation, and the location, extent and distribution of these habitats was recorded.
- 6.3.3.6 During the course of surveys the location of invasive and notable species, or those categorised as AWI indicators (Kirby, 2004)¹⁹ were recorded to inform later assessment.
- 6.3.3.7 Field surveys were carried out on all land within the Order Limits and indicative site clearance boundary. The Order Limits comprise the extent of land required for the Project. The indicative site clearance boundary is an area of land within the Order Limits. Field surveys were also

<https://www.standardsforhighways.co.uk/prod/attachments/9317652b-4cb8-4aaf-be57-b96d324c8965?inline=true>

¹⁶ Due to the low mobility of floral species, a precautionary 2km search area for floral records has been used. This is based on prevailing guidance within Appendix 2 of CIEEM (2017) Guidelines for Preliminary Ecological Appraisal (second edition), CIEEM (2020) Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK and CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland (version 1.2).

¹⁷ Notable floral species are those considered to be habitat type indicators, positive habitat condition indicators, non-desirable invasive species or those listed within local rare plants registers.

¹⁸ Joint Nature Conservation Committee (2010) Handbook for Phase 1 habitat survey. A technique for environmental audit. Revised re-print. JNCC, Peterborough

¹⁹ Kirby, K.J. (2004) Table of Ancient Woodland Indicator Plants. In Rose F. (2006) The Wildflower Key. Updated by O'Reilly C. Penguin.

extended on a precautionary basis to land within 250m of the Order Limits. Where access was not possible desk based surveys of land within 250m of the Order Limits were carried out.

- 6.3.3.8 Surveys were extended to 250m from the Order Limits on a precautionary basis to identify any habitats and flora which could be within the Zone of Influence of the Project, in accordance with Chartered Institute of Ecology and Environmental Management guidelines²⁰.

6.3.4 Assumptions and Limitations

- 6.3.4.1 Data provided by LRCs is often subject to the spatial coverage of biodiversity recording schemes, many of which are not carried out in a systematic way. This data frequently does not include negative survey data (data showing where surveys have occurred and species absence has been proven likely). In particular, certain areas (for example, nature reserves) have been heavily recorded whereas other areas (for example, private farmland) have not been well studied. For this reason, the absence of desk study records for a species has not been taken to indicate species absence. Desk study records have been used alongside habitat data and the known and anticipated species distributions to infer whether these species may be present. The desk study has been used to inform the field survey scope and has been subsequently updated by the field survey results.
- 6.3.4.2 Surveys were undertaken between September 2020 and November 2020, between October 2021 and December 2021, and in January 2022. Some of these survey periods are outside of the optimal period for botanical survey (May to August). Therefore, some floral species may not have been visible at the time of survey. However, this is not considered to have significantly effected the surveyor's ability to identify habitat types. Therefore, this did not significantly limit the survey results or the conclusions drawn.
- 6.3.4.3 All land within the Order Limits has been subject to field surveys. In addition, the majority of land within 250m of the Order Limits has been field surveyed. Small isolated areas within 250m of the Order Limits that could not be field surveyed due to land access restrictions have been subject to desk based aerial assessment. It is accepted within the JNCC Phase 1 handbook that broad habitat types can be determined by aerial imagery²¹ and therefore the results of this field and desk based survey work are considered accurate.
- 6.3.4.4 Access was not available to all ponds identified within 250m of the Order Limits. As such, a precautionary approach to the assessment of these habitats has been taken, with all ponds, unless otherwise specified, assumed to qualify as S41 Habitats of Principal Importance (HoPI) with regards to their conservation and ecological importance.

²⁰ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

²¹ JNCC (2010). Handbook for Phase 1 habitat survey. A technique for environmental audit. Available online at: <https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a>.

6.3.5 Results

Routewide

- 6.3.5.1 To the west of the Pennines, the A66, between the M6 at Penrith and Brough, predominantly runs through agricultural land comprising arable and grazed fields of improved grassland with boundary hedgerows, fences and stone walls.
- 6.3.5.2 Between these areas are pockets of semi-natural woodland and plantations, many mixed with conifer species and otherwise broad-leaved plantations. Occasionally the fields support dry to flowing drainage ditches and ponds.
- 6.3.5.3 Hedgerows are often species poor, the majority of which are defunct. However, good examples of intact hedgerows remain with mature native trees, including ash and oak, in addition to occasional ornamental species.
- 6.3.5.4 Larger forested areas of both mixed and broad-leaved woodland are evident at Whinfell within which are large waterbodies and pond habitats. Elsewhere there are areas of parkland landscape with scattered mature trees within areas of improved to semi-improved grasslands, adjacent to the River Eden corridor.
- 6.3.5.5 The River Eden and associated tributaries are bordered by narrow banks of semi-natural woodland or broad-leaved plantation woodlands with occasional presence of larger woodlands associated with old ox-bow lakes. Some of these support ponds that are occasionally linked to the main river at times of high flow.
- 6.3.5.6 Small areas of riparian habitats are present including marsh, floodplain grassland, steep sandy banks or exposed sandstone and areas of exposed sediments, gravels and cobbles. Man-made habitats and flood defences, such as walls and flood banks become more common where the River Eden and River Eamont pass under the A66, and as they pass through urban areas.
- 6.3.5.7 Rail corridors provide habitat connectivity across the landscape. Commercially active rail corridors at Penrith and Appleby feature open mosaic habitat, neutral grasslands, scrub and semi-natural woodland. A historic rail route at Warcop supports mixed soils and mixed habitats, with areas of open industrial land, wet pastures and semi-natural mire habitats. A disused railway is located to the south of Whinfell Forest, some distance from the Order Limits. It passes closer to the Project south of Kirkby Thore through to Crackenthorpe, with scrub, woodland, scattered semi-mature to mature trees, hedgerows, stone walls, banks and open mosaic habitats present.
- 6.3.5.8 Historic areas, associated with an old Roman road, are present along the A66 until Brough. These areas feature banks and lynchets which support acid to neutral grassland, scrub and hedgerow habitats.
- 6.3.5.9 The tributaries to the River Eden, west of the Pennines, also flow at the peripheries of a golf course with acid to improved grassland habitats and occasional waterbodies. Between Warcop and Brough are significant

areas of wooded cover on the hillsides comprising largely of mixed woodland with some areas of broad-leaved woodland.

- 6.3.5.10 The Pennines, which are in the majority located outside the Project, support the North and South Pennines Area of Outstanding Natural Beauty (AONB) and several sites designated for their ecological value, including SAC, SPA, SSSI and local sites. Habitats associated with these areas predominantly comprise a farmed landscape of grazed pastures, but with larger expanses of connected areas of upland. The upland habitats present include acid grasslands, slopes with bracken, heaths, moors, bogs, mires, flushes, ponds and other wetlands. In this area there are also a number of minor watercourses flowing off the hillsides and down under the A66 to the River Eden.
- 6.3.5.11 To the east of the Pennines, both north and south of the A66, are a continuation of the upland habitats associated with the designated sites. In the valley is the A66 and to the south is the River Greta, within the Tees catchment. The River Greta and its tributaries form the majority of the connective habitat across the A66. The valley has agricultural pasture habitats with many poor quality hedgerows, or stone walls as the main boundary feature.
- 6.3.5.12 There is a disused railway in this area, much of which has been converted to agricultural land. However, some banks, stone walls, non-ruderal habitat, damp to ponded areas, acid to neutral grasslands and scattered scrub habitats remain.
- 6.3.5.13 At Rokeby, areas of broadleaved woodland meet the river valleys of the Greta, Thorsgill Beck and Tees, these sometimes being steep and/or with sheer cliff faces of sandstone, within the river banks. There are ancient woodlands associated with densely wooded areas of Rokeby Hall. In addition, some of the scattered trees within the historical parkland setting of Rokeby Hall are of ecological significance in their own right, due to their veteran or ancient status. Further east the agricultural landscape is more intense with larger field systems of improved pasture and arable habitat, between which are occasional to locally frequent small pockets of woodland, some ancient in origin.
- 6.3.5.14 Areas of wetland are also present. These have mostly been historically created through human intervention. One large area comprises recently felled land which has been colonised by reedbed habitat (which is uncommon routewide) and is now developing into willow scrub. Another area has been dug out to form a fishing lake.
- 6.3.5.15 Hedges of varying quality and age are present as field boundaries, some containing areas of scrub and lines of semi-mature to mature trees.
- 6.3.5.16 To the far south are larger areas of upland heathland and wooded cover on both hillsides and lowland areas, within the latter are numerous streams and becks associated with the Yorkshire Ouse catchment and a continuation of arable habitats with some areas of mixed farming. In this section to the north of West Layton are some larger areas of woodland close to the A66, some of which are ancient. Further north are occasional current and historic limestone quarries and areas showing

little ecological connectivity other than the fragmented hedgerows and areas of broadleaved and mixed woodland along the tributaries to the River Tees and specifically via Maiden Gill. Habitats around Scotch Corner comprise further areas of mixed agriculture (arable and pasture) surrounding the infrastructure associated with the A1(M) motorway.

Desk study

Habitats of Principal Importance (HoPI)

6.3.5.17 The desktop study identified three types of HoPI within the indicative site clearance boundary of the Project. A further three (six in total) HoPI habitats were identified within 250m of the Order Limits. These are detailed within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study

Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study

| Habitat of Principal Importance | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Description ²² |
|--------------------------------------|-------------------------------|---------------------------------------|--|
| Coastal and floodplain grazing marsh | 2.24 | 15.02 | Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds. |
| Deciduous woodland | 12.36 | 82.40 | Includes woodland growing on the full range of soil conditions, from very acidic to base-rich. There is great variety in the species composition of the canopy layer and the ground flora. |
| Traditional orchard | 0.11 | 0.78 | Habitat structure rather than vegetation type, topography or soils, is the defining feature of the habitat. Traditional orchards are structurally and ecologically similar to wood-pasture and parkland, with open-grown trees set in herbaceous vegetation, but are generally distinguished from these priority habitat complexes by the following characteristics: the species composition of the trees, these being primarily in the family Rosaceae; the usually denser arrangement of the trees; the small scale of individual habitat patches; the wider |

²² JNCC, 2019. UK BAP Priority Habitats. Available online: <https://jncc.gov.uk/our-work/uk-bap-priority-habitats/>.

| Habitat of Principal Importance | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Description ²² |
|-------------------------------------|-------------------------------|---------------------------------------|--|
| | | | dispersion and greater frequency of occurrence of habitat patches in the countryside. Traditional orchards include plantings for nuts, principally hazel nuts, but also walnuts. Management of the trees is the other main feature distinguishing traditional orchards and wood-pasture and parkland. Trees in traditional orchards are, or were, grown for fruit and nut production, usually achieved through activities such as grafting and pruning. |
| Lowland fens | None within Order Limits | 6.54 | Fens are peatlands which receive water and nutrients from the soil, rock and ground water as well as from rainfall: they are minerotrophic. Two types of fen can broadly be distinguished: topogenous and soligenous. Topogenous fens are those where water movements in the peat or soil are generally vertical. They include basin fens and floodplain fen. Soligenous fens, where water movements are predominantly lateral, include mires associated with springs, rills and flushes in the uplands, valley mires, springs and flushes in the lowlands, trackways and ladder fens in blanket bogs and lagsgs of raised bogs. |
| Purple moor grass and rush pastures | None within Order Limits | 2.7 ha | Purple moor grass and rush pastures occur on poorly drained, usually acidic soils in lowland areas of high rainfall. Their vegetation, which has a distinct character, consists of various species-rich types of fen meadow and rush pasture. Purple moor grass (<i>Molinia caerulea</i>), and rushes, especially sharp-flowered rush (<i>Juncus acutiflorus</i>), are usually abundant. |
| Upland heathland | None within Order Limits | 5.53ha | Heathland vegetation occurs widely on mineral soils and thin peats (<0.5m deep) throughout the uplands and moorlands of the UK. It is characterised by the presence of dwarf shrubs at a cover of at least 25%. |

6.3.5.18 Further areas which have been confirmed as fulfilling the criterion of HoPI through field survey are detailed within the relevant scheme results within this report.

Protected, controlled and locally notable floral species

- 6.3.5.19 Protected and notable plant species identified within the desk study are detailed within Table 3: Protected and notable flora within the Order Limits and within 250m of the boundary. This includes those listed as Species of Principal Importance (SoPI) under S41 (Natural England, 2013)²³, Schedule 9, Schedule 8, IUCN Red List (*A vascular Plant Red List for England*, (Stroh et al., 2014))²⁴, ancient woodland indicator species (*The Wild Flower Key*, (Rose, 2006))²⁵, the Rare Plant Register north-west Yorkshire, and Rare Plant Register Cumbria.

²³ Natural England (2013) Section 41 Species - Priority Actions Needed (B2020-008)., available online: <http://publications.naturalengland.org.uk/publication/4958719460769792>.

²⁴ Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D. & Taylor, I. (2014) A Vascular Plant Red List for England. Botanical Society of Britain and Ireland, Bristol.

²⁵ Rose. F. (2006) *The Wild Flower Key*. Penguin Books Ltd: London.

Table 3: Protected and notable flora within the Order Limits and within 250m of the boundary

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------------------|---------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Anomodon longifolius</i> | Long-leaved Tail-moss | NZ01 | 0 | | | Yes | | | | |
| <i>Gyalecta ulmi</i> | Elm gyalecta | NZ10 | 0 | | | Yes | | | | |
| <i>Silene noctiflora</i> | Night-flowering Catchfly | NZ10 | 0 | | | | VU | | Yes | |
| <i>Cerastium arvense</i> | Field Mouse-ear | NZ10 | 0 | | | | LC | | | Yes |
| <i>Spergula arvensis</i> | Corn Spurrey | NZ10 | 0 | | | | VU | | Yes | Yes |
| <i>Filago vulgaris</i> | Common Cudweed | NZ10 | 0 | | | | NT | | Yes | Yes |
| <i>Caloplaca luteoalba</i> | Orange-fruited elm-lichen | NZ11 | 0 | | | Yes | | | | |
| <i>Chenopodium bonus-henricus</i> | Good-King-Henry | NY6326 | 0 | | | | | | Yes | Yes |
| <i>Viburnum opulus</i> | Guelder-rose | NY62N | 0 | | | | LC | Yes | | |
| <i>Oxalis acetosella</i> | Wood-sorrel | NY62N | 0 | | | | LC | Yes | | |
| <i>Brachypodium sylvaticum</i> | False-brome | NY62N | 0 | | | | LC | Yes | | |
| <i>Elymus caninus</i> | Bearded Couch | NY62N | 0 | | | | LC | Yes | | |
| <i>Festuca gigantea</i> | Giant Fescue | NY62N | 0 | | | | | Yes | | |
| <i>Acer campestre</i> | Field Maple | NY6425 | 0 | | | | LC | Yes | | |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|---|-----------------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Fallopia japonica</i> | Japanese Knotweed | NY6325 | 0 | | Yes | | | | | |
| <i>Impatiens glandulifera</i> | Indian Balsam | NY6424 | 0 | | Yes | | | | | |
| <i>Hyacinthoides non-scripta</i> | Bluebell | NY7516 | 0 | | | Yes | LC | Yes | | |
| <i>Adoxa moschatellina</i> | Moschatel | NY6621 | 0 | | | | LC | Yes | | |
| <i>Lathraea squamaria</i> | Toothwort | NY6621 | 0 | | | | LC | Yes | | |
| <i>Anemone nemorosa</i> | Wood Anemone | NY6621 | 0 | | | | LC | Yes | | |
| <i>Ranunculus auricomus</i> | Goldilocks Buttercup | NY6621 | 0 | | | | LC | Yes | | |
| <i>Lamium galeobdolon subsp. argentatum</i> | Yellow Archangel | NY6621 | 0 | | Yes | | | | | |
| <i>Rhododendron ponticum</i> | Rhododendron ponticum | NY7416 | 0 | | Yes | | | | | |
| <i>Chrysosplenium alternifolium</i> | Alternate-leaved Golden-saxifrage | NY6621 | 0 | | | | LC | Yes | | |
| <i>Sanicula europaea</i> | Sanicle | NZ01S | 0 | | | | LC | Yes | | |
| <i>Allium ursinum</i> | Ramsons | NZ01S | 0 | | | | LC | Yes | | |
| <i>Arum maculatum</i> | Lords-and-Ladies | NZ01S | 0 | | | | LC | Yes | | |
| <i>Galium odoratum</i> | Woodruff | NZ01S | 0 | | | | LC | Yes | | |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------------------|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Mercurialis perennis</i> | Dog's Mercury | NZ01S | 0 | | | | LC | Yes | | |
| <i>Myosotis sylvatica</i> | Wood Forget-me-not | NZ01S | 0 | | | | LC | Yes | | |
| <i>Stellaria nemorum</i> | Wood Stitchwort | NZ01S | 0 | | | | LC | Yes | | |
| <i>Carex sylvatica</i> | Wood-sedge | NY7815 | 0 | | | | LC | Yes | | |
| <i>Luzula pilosa</i> | Hairy Wood-rush | NY7815 | 0 | | | | LC | Yes | | |
| <i>Polystichum setiferum</i> | Soft Shield-fern | NZ0614 | 0 | | | | LC | Yes | | |
| <i>Melica uniflora</i> | Wood Melick | NZ0614 | 0 | | | | LC | Yes | | |
| <i>Myriophyllum verticillatum</i> | Whorled Water-milfoil | NY645264 | 0 | | | | VU | | Yes | |
| <i>Vicia tetrasperma</i> | Smooth Tare | NY543290 | 0 | | | | | | | Yes |
| <i>Potentilla crantzii</i> | Alpine Cinquefoil | NY71X | 0 | | | | LC | | Yes | Yes |
| <i>Gagea lutea</i> | Yellow Star-of-Bethlehem | NY508284 | 0 | | | | LC | Yes | | |
| <i>Milium effusum</i> | Wood Millet | NY508284 | 0 | | | | LC | Yes | | |
| <i>Poa nemoralis</i> | Wood Meadow-grass | NY508284 | 0 | | | | LC | Yes | | |
| <i>Sorbus torminalis</i> | Wild Service-tree | NY508284 | 0 | | | | LC | | | Yes |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------------------|-------------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Veronica montana</i> | Wood Speedwell | NZ16150832 | 0 | | | | LC | Yes | | |
| <i>Campanula latifolia</i> | Giant Bellflower | NY9913 | 0 | | | | LC | Yes | | |
| <i>Apium graveolens</i> | Wild Celery | NY669218 | 0 | | | | | | | Yes |
| <i>Carex diandra</i> | Lesser Tussock-sedge | NY6026 | 0 | | | | NT | | | Yes |
| <i>Heracleum mantegazzianum</i> | Giant Hogweed | NY508283 | 33 | | Yes | | | | | |
| <i>Galeopsis angustifolia</i> | Red Hemp-nettle | NZ167082 | 85 | Yes | | | CR | | Yes | Yes |
| <i>Linum perenne subsp. anglicum</i> | Linum perenne subsp. anglicum | NZ020136 | 96 | | | | VU | | | |
| <i>Ophrys insectifera</i> | Fly Orchid | NY71T | 175 | Yes | | | VU | | Yes | Yes |
| <i>Rorippa islandica</i> | Northern Yellow-cress | NY763156 | 180 | | | | | | | Yes |
| <i>Cotoneaster bullatus</i> | Hollyberry Cotoneaster | NZ2105 | 208 | | Yes | | | | | |
| <i>Juncus subnodulosus</i> | Blunt-flowered Rush | NY727170 | 259 | | | | LC | | | Yes |
| <i>Potentilla argentea</i> | Hoary Cinquefoil | NY575294 | 265 | | | | NT | | | Yes |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|---|-------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Goodyera repens</i> | Creeping Lady's-tresses | NY5727 | 299 | | | | LC | Yes | | Yes |
| <i>Vaccinium uliginosum</i> | Bog Bilberry | NY5727 | 299 | | | | LC | | | Yes |
| <i>Ranunculus lingua</i> | Greater Spearwort | NY5727 | 299 | | | | LC | | | Yes |
| <i>Polystichum aculeatum</i> | Hard Shield-fern | NY5929 | 301 | | | | LC | Yes | | |
| <i>Crocsmia pottsii x aurea = C. x crocosmiiflora</i> | Montbretia | NZ2005 | 327 | | Yes | | | | | |
| <i>Stellaria pallida</i> | Lesser Chickweed | NZ0847913010 | 329 | | | | LC | | | Yes |
| <i>Stellaria neglecta</i> | Greater Chickweed | NY6748320991 | 384 | | | | LC | | | Yes |
| <i>Anacamptis pyramidalis</i> | Pyramidal Orchid | NY51982824 | 496 | | | | LC | | | Yes |
| <i>Juncus compressus</i> | Round-fruited Rush | NY6323 | 653 | | | | VU | | Yes | Yes |
| <i>Euonymus europaeus</i> | Spindle | NZ025133 | 656 | | | | LC | Yes | | |
| <i>Phegopteris connectilis</i> | Beech Fern | NY7816 | 662 | | | | LC | Yes | | |
| <i>Primula farinosa</i> | Bird's-eye Primrose | NY7816 | 662 | | | | NT | | Yes | Yes |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|------------------------------|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Sesleria caerulea</i> | Blue Moor-grass | NY7816 | 662 | | | | LC | | Yes | Yes |
| <i>Saxifraga hypnoides</i> | Mossy Saxifrage | NY7816 | 662 | | | | VU | | Yes | |
| <i>Carex ornithopoda</i> | Bird's-foot Sedge | NY71Y | 662 | | | | LC | | | Yes |
| <i>Viola tricolor</i> | Wild Pansy | NY5630 | 735 | | | | NT | | Yes | Yes |
| <i>Carex remota</i> | Remote Sedge | NY5630 | 735 | | | | LC | Yes | | |
| <i>Bromopsis ramosa</i> | Hairy-brome | NY677202 | 887 | | | | LC | Yes | | |
| <i>Neottia nidus-avis</i> | Bird's-nest Orchid | NY677202 | 887 | | | | NT | Yes | | Yes |
| <i>Trifolium striatum</i> | Knotted Clover | NY42Y | 907 | | | | LC | | | Yes |
| <i>Agrostis vinealis</i> | Brown Bent | NY81C | 970 | | | | LC | | | Yes |
| <i>Rosa rugosa</i> | Japanese Rose | NZ1009 | 1030 | | Yes | | | | | |
| <i>Epipactis helleborine</i> | Broad-leaved Helleborine | NY787163 | 1071 | | | | LC | Yes | | |
| <i>Groenlandia densa</i> | Opposite-leaved Pondweed | NY61Z | 1109 | | | | VU | | Yes | Yes |
| <i>Paris quadrifolia</i> | Herb-paris | NY7849916393 | 1120 | | | | LC | Yes | | |
| <i>Equisetum hyemale</i> | Rough Horsetail | NY6719 | 1121 | | | | LC | | | Yes |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------------|----------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Stellaria palustris</i> | Marsh Stitchwort | NY704176 | 1229 | Yes | | | VU | | Yes | Yes |
| <i>Equisetum sylvaticum</i> | Wood Horsetail | NY726194 | 1231 | | | | LC | Yes | | |
| <i>Carex paniculata</i> | Greater Tussock-sedge | NY726194 | 1231 | | | | LC | Yes | | |
| <i>Ballota nigra</i> | Black Horehound | NY6155928305 | 1306 | | | | LC | | | Yes |
| <i>Symphytum officinale</i> | Common Comfrey | NY6155928305 | 1306 | | | | LC | | | Yes |
| <i>Melampyrum sylvaticum</i> | Small Cow-wheat | NY6155928305 | 1306 | | | | EN | | Yes | |
| <i>Potentilla fruticosa</i> | Shrubby Cinquefoil | NY6002829715 | 1316 | | | | | | Yes | Yes |
| <i>Astragalus glycyphyllos</i> | Wild Liquorice | NY598299 | 1352 | | | | LC | | | Yes |
| <i>Hippocrepis comosa</i> | Horseshoe Vetch | NY78321669 | 1398 | | | | LC | | | Yes |
| <i>Pimpinella major</i> | Greater Burnet-saxifrage | NY80561488 | 1549 | | | | LC | | | Yes |
| <i>Polystichum lonchitis</i> | Holly-fern | NY7120 | 1646 | Yes | | | VU | | Yes | Yes |
| <i>Allium ursinum</i> | Ramsons (also Wild Garlic) | NZ0416 | 1666 | | | | LC | Yes | | |
| <i>Bromopsis ramosa</i> | Wood Brome | NZ0416 | 1666 | | | | LC | Yes | | |

| Scientific name | Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|------------------------------|----------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| <i>Vulpia myuros</i> | Rat's-tail Fescue | NZ0416 | 1666 | | | | LC | | | Yes |
| <i>Hypochaeris glabra</i> | Smooth Cat's-ear | NZ162112 | 1742 | | | | VU | | | Yes |
| <i>Teesdalia nudicaulis</i> | Shepherd's Cress | NZ162112 | 1742 | | | | NT | | Yes | Yes |
| <i>Epipactis atrorubens</i> | Dark-red Helleborine | NY80081631 | 1809 | | | | LC | | Yes | Yes |
| <i>Rosa rubiginosa</i> | Sweet-briar | NY698201 | 1868 | | | | LC | | | Yes |
| <i>Trifolium ochroleucon</i> | Sulphur Clover | NZ159055 | 1885 | | | | VU | | | |
| <i>Juniperus communis</i> | Juniper | NY7618 | 1906 | Yes | | | LC | Yes | | |
| <i>Viola rupestris</i> | Teesdale Violet | NY71U | 1906 | | | | LC | | | Yes |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.20 The habitats recorded routewide within 250m of the indicative site clearance boundary and those recorded within the Order Limits are outlined in Table 4: Routewide areas of phase 1 habitat types and shown on ES Figure 6.3: Phase 1 Habitat and Terrestrial Invertebrate Survey (Application Document 3.3). The importance of habitats has been assessed on a precautionary basis. As a result, the highest reasonable value has been ascribed to each.
- 6.3.5.21 Table 5: Summary of phase 1 habitat points recorded within 250m of the Order Limits routewide and Table 6: Summary of linear phase 1 habitats recorded within 250 of the Order Limits routewide summarise the point and linear phase 1 habitat types recorded within 250m of the Order Limits.

Table 4: Routewide areas of phase 1 habitat types

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---------------------------------------|---|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 231.45ha | 800.63ha | 198.57ha | 729.83ha | Farmlands adjacent to the routewide project are largely pastureland (improved grasslands), but closely followed by arable farming. The majority of the crops grown are bread wheat but also occasionally of barley, and rarely for swede and potatoes. In general, the arable lands do not appear to have appreciable arable margins. | Local value for arable fields but arable field margins may be up to National value due to the presence of HoPI (Arable Field Margins) County or Local Authority Plan Habitats present; Richmondshire District Council BAP Habitat-Farmland. |
| B4 - Improved grassland | 365.74ha | 1217.92ha | 335.73ha | 1182.53ha | This is one of the most frequent habitat types routewide, outside the highway boundary. It is typically dominated by perennial rye grass (<i>Lolium perenne</i>), sometimes with | Local value. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|----------------------|-------------------------------|---------------------------------------|---|---|---|----------------------------------|
| | | | | | <p>frequent smooth meadow grass (<i>Poa pratensis</i>), cock's-foot (<i>Dactylis glomerata</i>), Yorkshire-fog (<i>Holcus lanatus</i>) and white clover (<i>Trifolium repens</i>). Creeping bent-grass (<i>Agrostis stolonifera</i>), broad-leaved dock (<i>Rumex obtusifolius</i>) and creeping thistle (<i>Cirsium arvense</i>) are locally frequent, with occasional creeping buttercup (<i>Ranunculus repens</i>), common mouse-ear (<i>Cerastium fontanum</i>), dandelion agg. (<i>Taraxacum officinale</i> agg.) with rare autumn hawkbit (<i>Scorzoneroides autumnalis</i>). Some of these grasslands are low in forb presence and show higher levels of improvement and some, observed to be used for hay-making, lean towards poor semi-improved grassland mixes where Yorkshire-fog becomes the dominant species, often with frequent common nettle (<i>Urtica dioica</i>) and meadow buttercup (<i>Ranunculus acris</i>) and aforementioned forbs. This also occurs in areas where there is periodic inundation from adjacent floodwaters.</p> | |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|--|--|
| B6 - Poor semi-improved grassland | 79.03ha | 95.44ha | 69.97ha | 101.63ha | False oat grass (<i>Arrhenatherum elatius</i>) is dominant with abundant grasses similar to semi-improved grassland. | Local value. |
| J3.6 - Buildings | 4.66ha | 50.86ha | 3.83ha | 49.67ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 3.92ha | 32.92ha | 3.85ha | 32.57ha | Amenity grassland habitats are situated adjacent to areas of urban dwellings and infrastructure. This habitat is typically dominated by perennial rye-grass, with frequent cock's-foot, dandelion, common daisy (<i>Bellis perennis</i>), ribwort plantain, white clover, red clover and common mouse-ear. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity limit the ecological importance of this common and widespread habitat type to negligible. |
| J5 - Other habitat | 2.55ha | 13.87ha | 2.71ha | 14.45ha | Range of habitats, some small areas of orchard, compacted bare ground soils, gavel tracks and hardstanding. | National to Negligible - orchard areas qualify as HoPI Traditional Orchards. Other vegetated areas within this habitat classification are of Local importance with those remaining of Negligible interest. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|---|---|
| J4 - Bare ground | 3.75ha | 4.73ha | 3.96ha | 5.08ha | Bare ground is found along riverbanks, adjacent to inland cliff areas. Greater expanses of this habitat are found at areas of current works or quarries. | Local value unless within the HoPI Open Mosaic Habitat, which would be National level as a whole. |
| B2.2 - Neutral grassland - semi-improved | 20.18ha | 58.14ha | 18.31 ha | 57.46ha | False oat grass (<i>Arrhenatherum elatius</i>) is dominant with abundant red fescue, frequent presence of Yorkshire-fog, occasional cock's-foot, common bent, crested dog's-tail, common couch (<i>Elymus repens</i>), meadow foxtail (<i>Alopecurus pratensis</i>) and rare sheep's fescue. Forb diversity in these grasslands varies and can be limited to ruderal species or can be diverse. | Up to National value due to presence of HoPI (Lowland Meadows and Upland Hay Meadows) County or Local Authority Plan Habitats present; Durham County Council BAP - Lowland Meadows and Pasture. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.94ha | 0.42ha | 0.71ha | 0.43ha | Recorded at gates, field entrances, small areas of disturbed habitats associated with play areas and sports pitches and by larger areas within quarries or areas of current works such as housebuilding. | Local value unless within the HoPI Open Mosaic Habitat, which would be National value as a whole. |
| A1.1.2 - Broadleaved woodland - plantation | 16.46ha | 27.4ha | 11.14ha | 30.21ha | This is present in many locations either as part of amenity planting contiguous to the existing A66 corridor, or over more native woodland habitats. There is great diversity amongst the planted stands. | Up to National value due to the possible presence of HoPI's (deciduous woodland types). |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---------------------------------------|---|---|---|---|
| | | | | | | <p>County or Local Authority Plan Habitats present;</p> <p>Cumbria BAP - Upland oak woodland, upland mixed ash woodland, wet woodland.</p> <p>Durham County Council BAP - Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites, Other Broadleaved Woodland, Wet Woodland.</p> <p>Richmondshire District Council BAP Habitat- Ash woodland, oak woodland, wet woodland, other woodland types, lowland wood pasture and parkland.</p> |
| A1.2.2 - Coniferous woodland - plantation | 11.48ha | 36.42ha | 8.05ha | 32.9ha | These are either dominated wholly by conifer species or have a low mix of broad-leaved species. These woodlands tend to be dominated by | Local - low level of naturalness and minimal ground flora |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--------------------------------------|-------------------------------|---------------------------------------|---|---|---|--|
| | | | | | Scot's pine, Norway spruce (<i>Picea abies</i>), silver fir (<i>Abies alba</i>), or are stands of Leyland cypress (<i>Cupressus x leylandii</i>). | limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 17.81ha | 37.29ha | 14.95ha | 39.11ha | Often these are associated with mature gardens, game planting or are more recently planted woodland blocks within private land. | Up to National value due to the possible presence of HoPIs (deciduous woodland types and heathland). County or Local Authority Plan Habitats present; Cumbria BAP - Upland oak woodland, upland mixed ash woodland, wet woodland. Durham County Council BAP - Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites, Restored Native Woodland on Ancient Sites, Other Broadleaved Woodland, Wet Woodland. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|--|--|
| | | | | | | Richmondshire District Council BAP Habitat- Ash woodland, oak woodland, wet woodland, other woodland types, lowland wood pasture and parkland. |
| A1.1.1 - Broadleaved woodland - semi-natural | 8.19ha | 61.6ha | 7.85ha | 67.07ha | <p>Several types of this woodland are present across the route, most being small and/or fragmented from other areas of continuous semi-natural habitats, with varying degrees of naturalness. Drier soils/areas support pedunculate oak (<i>Quercus robur</i>) as the canopy dominant. The drier stands are dominated by ash (<i>Fraxinus excelsior</i>). Where field layers are evident in both the ash and oak woodlands, these are often represented by dog's mercury (<i>Mercurialis perennis</i>) and native bluebell (<i>Hyacinthoides non-scripta</i>).</p> <p>Chapel Wood CWS is designated for broad-leaved woodland habitats. These woodlands may qualify as the Annex 1 alluvial woodland habitat, for which the adjacent River Eden SAC is designated.</p> | <p>Majority up to National value due to the presence of HoPIs (deciduous woodland types).</p> <p>Up to International value for the Temple Sowerby to Appleby scheme due to the possible presence of an Annex 1 woodland habitat</p> <p>County or Local Authority Plan Habitats present;</p> <p>Cumbria BAP - Upland oak woodland, upland mixed ash woodland, wet woodland.</p> <p>Durham County Council BAP - Woodland and</p> |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|----------------------|-------------------------------|---------------------------------------|---|---|-------------|---|
| | | | | | | <p>Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites, Restored Native Woodland on Ancient Sites, Other Broadleaved Woodland, Wet Woodland.</p> <p>Richmondshire District Council BAP Habitat-Ash woodland, oak woodland, wet woodland, other woodland types, lowland wood pasture and parkland.</p> |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---------------------------------------|---|---|---|--|
| A2.1 - Scrub - dense/continuous | 6.18ha | 4.87ha | 5.84ha | 5.16ha | The routewide area is typified by dominant stands of hazel, hawthorn, willow, gorse or bramble, each being locally dominant where they occur. Blackthorn occurs at much lower densities. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| C3.1 - Other tall herb and fern - ruderal | 5.24ha | 6.29ha | 2.82ha | 8.44ha | This habitat is present along the river and stream corridors routewide, which are often fenced off from adjacent pasture. It is also present at field margins, within hedgerow ground flora, and on embankments and cuttings for current and prior rail corridors, and at roadsides. The most dominant species is common nettle, with locally frequent patches of rosebay willowherb, and occasional ragwort, hogweed (<i>Heracleum sphondylium</i>), cow parsley (<i>Anthriscus sylvestris</i>), | Local value |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|---|--|
| | | | | | coltsfoot (<i>Tussilago far-fara</i>), broad-leaved dock, scattered throughout. Several stands of Indian balsam (<i>Impatiens glandulifera</i>) were identified across the routewide project. | |
| C1.1 - Bracken - continuous | 0.58ha | 2.06ha | 0.57ha | 1.7ha | This occurs as monotypical stands on steep hillsides. Occasional bracken management was recorded within agricultural land, with evidence of areas that have been cut and bailed. | Local value. |
| A1.3.1 - Mixed woodland - semi-natural | 1.92ha | 15.2ha | 2ha | 14ha | Various species-mixes are present across the scheme, often originating from plantation woodland but sufficiently developed as to form mixed semi-natural woodlands. | Up to National value due to the presence of HoPIs (deciduous woodland types and heathland). County or Local Authority Plan Habitats present; Cumbria BAP - Upland oak woodland, upland mixed ash woodland, wet woodland. Durham County Council BAP - Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|----------------------|-------------------------------|---------------------------------------|---|---|---|--|
| | | | | | | Sites, Restored Native Woodland on Ancient Sites, Other Broadleaved Woodland, Wet Woodland. Richmondshire District Council BAP Habitat- Ash woodland, oak woodland, wet woodland, other woodland types, lowland wood pasture and parkland. |
| F1 - Swamp | 2.81ha | 8.24ha | 1.36ha | 8.26ha | The extent of this habitat is limited within the Project. It is dominated by common reed (<i>Phragmites australis</i>), reed canary grass (<i>Phalaris arundinacea</i>) and bulrush (<i>Typha latifolia</i>). | County value. Habitat falls short of HoPI (Reedbed) criteria but retain features which are of ecological importance. County or Local Authority Plan Habitats present; Cumbria BAP – Reedbed, purple moor-grass and rush pasture Durham County Council BAP - Lowland Fen |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|-----------------------------|-------------------------------|---------------------------------------|---|---|---|---|
| | | | | | | (Reedbed, Lowland Fen habitats), Richmondshire District Council BAP Habitat– Fens, reedbeds. |
| B5 - Marsh/marshy grassland | 10.79ha | 36.6ha | 6.32ha | 37.55ha | This habitat is evident in both areas of floodplain and other low-lying ground across the Project. Areas of the Yorkshire-fog dominated /damp neutral grasslands frequently grade into this habitat. This includes a range of areas where tufted hair-grass dominates, to areas dominated by rush; and across gradients from low species diversity to species-rich damp habitats. | Up to National value due to presence of HoPI (Coastal and Floodplain Grazing Marsh, Upland Flushes, Fens and Swamps, Purple Moor-grass and Rush Pastures) County or Local Authority Plan Habitats present; Cumbria BAP - purple moor-grass and rush pasture, reedbed. Durham County Council BAP - Lowland Fen (Reedbed, Lowland Fen habitats), Floodplain Grazing Marsh Richmondshire District Council BAP Habitat - flood plain grassland, fens, reedbeds. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---------------------------------------|---|---|---|--|
| A3.1 - Broadleaved Parkland/scattered trees | 0.38ha | 25.34ha | 0.22ha | 24.90ha | This is represented by diverse types which include areas of semi-natural grassland overplanted with trees. Some of these trees are mature with veteran features; where such trees are present, these have been noted as of importance. | National to Local importance. Areas of National importance due to presence of HoPI (Wood- Pasture and Parkland) and ancient and/or veteran trees. Areas which fall short of this criteria are of County importance under Durham County Council BAP - Parkland and Wood Pasture or Richmondshire District Council BAP Habitat-lowland wood pasture and parkland. Remaining areas are of Local importance due to presence of mature trees. |
| A2.2 - Scrub - scattered | 0.39ha | 3.27ha | 0.33ha | 3.19ha | Self-seeded and planted stands of scrub on rail embankments and road verges, scattered along rocky exposures/ escarpments, scattered along riverbanks, is represented by growth at woodland edges, or occurs as remnants of defunct hedge | Local value unless within the HoPI Open Mosaic Habitat, which would be National value as a whole. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---------------------------------------|---|---|---|--|
| | | | | | systems. Species composition similar to dense scrub. | |
| G1.1 - Standing water - eutrophic | 0.14ha | 1.88ha | 0.13ha | 1.66ha | A series of ponds within the Project. Beyond the boundary a variety of waterbodies are present including quarry ponds, large ornamental ponds, farmland ponds, waterbodies formed from old ox-bows of the rivers, ponded areas with wetland areas, wet ditches, and man-made drainage or water storage ditches. | Up to National value due to presence of HoPI (Ponds) County or Local Authority Plan Habitats present; Durham County Council BAP - Ponds Richmondshire District Council BAP Habitat–standing water. |
| G1 - Standing water | 0.01ha | 0.94ha | 0.01ha | 0.85ha | A series of natural and man-made depressions that hold water. Usually within low lying areas of the landscape. Those that are manmade are of less ecological interest. Semi-natural and unlined bodies of standing water are mostly ponds and all assumed to qualify as the HoPI Ponds. | National to Negligible - natural ponds assumed to meet the HoPI criteria for Ponds. Man-made areas of standing water unlikely to qualify but some remain of Local importance. |
| C3.2 - Other tall herb and fern - non ruderal | 0.02ha | 0.03ha | 0.016ha | 0.03ha | This habitat is too small to be mapped but is present in limited and largely inaccessible areas comprising both steep banksides of ditches and streams through woodland habitats and on steep river banks above flood | Local value. |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---------------------------------------|-------------------------------|---------------------------------------|---|---|---|---|
| | | | | | level. Species present include male fern, broad-buckler fern and hart's-tongue fern with moss and liverwort cover between and occasional presence of opposite-leaved golden saxifrage (<i>Chrysoplenium oppositifolium</i>). | |
| D3 - Lichen/bryophyte heath | 0.37ha | 1.67ha | 0.37ha | 1.67ha | A small area of this habitat is present within the Project Order Limits with remaining areas recorded adjacent to the Order Limits. It consists of areas with limited grass presence and dominated by moss species, with varying levels of common heather presence. | Up to National value due to presence of HoPI (Upland and Lowland Heathland) County or Local Authority Plan Habitats present; Cumbria BAP - Upland heathland, blanket bog Durham County Council BAP - Lowland Heath (Acid Grassland), Richmondshire District Council BAP Habitat-Upland heathland & bog. |
| B1.2 - Acid grassland - semi-improved | 0.15ha | 10.78ha | 0.15ha | 8.89ha | This grassland type is only found in a few locations, typically within low intensity sheep-grazed pasture. | Up to National value due to presence of HoPI (Lowland Acid Grassland) |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|---------------------------------------|-------------------------------|---------------------------------------|---|---|--|--|
| | | | | | | County or Local Authority Plan Habitats present; Durham County Council BAP - Lowland Heath (Acid Grassland) Richmondshire District Council BAP Habitat-moorland edge including Upland acid grassland. |
| G1.2 - Standing water - mesotrophic | 0ha | 0.03ha | >0.001ha | 0.03ha | This habitat is limited to a recently created ornamental pond with good water quality but little to no marginal or aquatic vegetation. | Up to County value due to presence of County or Local Authority Plan Habitat County or Local Authority Plan Habitats present; Cumbria BAP - Mesotrophic standing waters Richmondshire District Council BAP Habitat- Standing water. |
| A3.3 - Mixed Parkland/scattered trees | 0.09ha | 0.99ha | 0.04ha | 1.04ha | Includes trees over marshy grassland habitats with mature pine trees and standing deadwood or scattered trees | National value due to presence of HoPI (Wood- Pasture and Parkland) |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|--|--|
| | | | | | on amenity grasslands including mature examples of Scot's pine. | County or Local Authority Plan Habitats present; Durham County Council BAP - Parkland and Wood Pasture Richmondshire District Council BAP Habitat-lowland wood pasture and parkland. |
| I2.2 - Spoil | 0.04ha | 0.02ha | >0.01ha | 0.06ha | Large areas of this habitat are associated with quarry industries in the area or with storage areas and comprise piles of vegetated (rank grasses) to non-vegetated sands and gravels and in limited areas manure heaps. | Local value as has some value for reptiles and invertebrates. |
| F2.2 - Marginal and inundation - inundation vegetation | 0ha | 0.41ha | >0.01ha | 0.41ha | Very few examples of this habitat have been recorded routewide. Where recorded present, it includes bulrush, soft rush, with occasional stands of common reed and meadowsweet. | Up to National value due to presence of HoPIs (Coastal and Floodplain Grazing Marsh, Upland Flushes, Fens and Swamps, Purple Moor-grass and Rush Pastures) County or Local Authority Plan Habitats present; |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---------------------------------------|---|---|---|---|
| | | | | | | Cumbria BAP - Reedbed Durham County Council BAP - Lowland Fen (Reedbed, Lowland Fen habitats), Rivers and Streams (Floodplain Grazing Marsh, Exposed Riverine Sediments) Richmondshire District Council BAP Habitat– Fens, reedbeds, flood plain grassland. |
| J1.4 - Introduced shrub | 0ha | 0.18ha | >0.01ha | 0.18ha | This habitat is present in areas of amenity planting, urban areas, shopping centres and within gardens. | Local value. |
| I1.4.1 - Other exposure - acid/neutral | 0ha | 0.02ha | 0ha | 0.02ha | There are limited areas of rock exposure routewide, none very extensive and mostly obscured by surrounding vegetation. | Up to National value due to possible presence of HoPI (Inland Rock Outcrop and Scree Habitats). |
| D2 - Wet dwarf shrub heath | #N/A | 1.14ha | | 1.08ha | This habitat is limited to one main location within the Project Order Limits. Stands of common heather between small tussocks of heath grass, with abundant bog asphodel (<i>Narthecium ossifragum</i>), frequent heath woodrush, occasional cross- | Up to National value due to presence of HoPI (Upland and Lowland Heathland) |

| Phase 1 habitat type | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Description | Ecological importance of habitat |
|----------------------|-------------------------------|---------------------------------------|---|---|---|--|
| | | | | | leaved heath (<i>Erica tetralix</i>), with red bog-moss (<i>Sphagnum capillifolium</i>) and (<i>Polytrichum commune</i>). | County or Local Authority Plan Habitats present; Cumbria BAP - Upland heathland, blanket bog. Durham County Council BAP - Lowland Heath (Acid Grassland), Richmondshire District Council BAP Habitat- Upland heathland & bog. |
| J3.4 - Caravan site | #N/A | 1.83ha | | 1.83ha | A combination of amenity grassland, mixed ornamental shrubs and buildings with associated hardstanding. | Negligible - low level of species diversity and naturalness combined with high levels of disturbance and management. |
| I2.1 - Quarry | #N/A | 3.92ha | | 3.92ha | Active aggregate quarry. | Negligible - no notable floral component, high level of disturbance. |

Table 5: Summary of phase 1 habitat points recorded within 250m of the Order Limits routewide

| Phase 1 habitat type | Number of points within indicative site clearance boundary | Number of points within Order Limits | Number of points within 250m of Order Limits | Description | Ecological importance of habitat |
|--------------------------|--|--------------------------------------|--|--|---------------------------------------|
| A2.2 - Scrub - scattered | 43 | 60 | 92 | Areas of mixed scattered scrub predominantly | Local - common and widespread habitat |

| Phase 1 habitat type | Number of points within indicative site clearance boundary | Number of points within Order Limits | Number of points within 250m of Order Limits | Description | Ecological importance of habitat |
|---|--|--------------------------------------|--|---|--|
| | | | | comprising hawthorn, blackthorn, bramble, elder and ash. | type comprising common species. |
| A3.1 - Broadleaved Parkland/scattered trees | 147 | 166 | 325 | Individual trees located within fields, in isolation within hedgerows or of particular note within a broader habitat type. These mostly include veteran, mature and semi-mature native broadleaved specimens. | Up to National value due to the presence of veteran trees. Mature trees are of up to County importance. Semi-mature trees are of Local importance. |
| A3.2 - Coniferous Parkland/scattered trees | 2 | 2 | 8 | Scattered Picea sp. (likely Norway spruce). | Local - comprising non-native species limits the ecological importance of this habitat. However, trees remain of intrinsic interest, therefore, they are of importance at the Local level. |

Table 6: Summary of linear phase 1 habitats recorded within 250 of the Order Limits routewide

| Linear phase 1 habitat type | Total habitat length within indicative site clearance boundary (m) | Total habitat length within Order Limits (m) | Total habitat length within 250m of Order Limits (m) | Description |
|--|--|--|--|--|
| A1.1.1 - Broadleaved woodland - semi-natural | 642 | 849.7 | 1820.5 | Lines of mature and semi-mature trees. |
| A1.1.2 - Broadleaved woodland - plantation | 884.3 | 997.3 | 1738.4 | Lines of mature and semi-mature planted trees. |
| A1.3.1 - Mixed woodland - semi-natural | 8.2 | 8.2 | 68.4 | Line of trees. |
| A1.3.2 - Mixed woodland - plantation | 536.3 | 536.3 | 0 | Line of trees. |
| A2.1 - Scrub - dense/continuous | 234.4 | 234.4 | 16.7 | Linear strip of scrub. |
| A2.2 - Scrub - scattered | 302.2 | 305.7 | 371 | Linear strip of scattered scrub. |
| A3.1 - Broadleaved Parkland/scattered trees | 3883.3 | 5599 | 11915.3 | Predominantly comprising lines of mature trees. |
| A3.2 - Coniferous Parkland/scattered trees | 0 | 0 | 35.5 | Line of planted coniferous trees. |
| A3.3 - Mixed Parkland/scattered trees | 338.2 | 338.2 | 98.1 | Line of mature and semi-mature trees. |
| B4 - Improved grassland | 125.1 | 757.8 | 574.1 | Grassland strip. |
| C3.1 - Other tall herb and fern - ruderal | 0 | 0 | 353.3 | Line of tall ruderal vegetation, including Indian balsam. |
| G2 - Running water | 16712.7 | 23616.1 | 79886.5 | Wet ditches and sections of watercourses. See ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey for further information). |
| G2.1 - Running water - eutrophic | 3452.1 | 5447 | 8330.7 | Wet ditches and sections of watercourses. See ES Appendix 6.20: Aquatic Macrophyte and River |

| Linear phase 1 habitat type | Total habitat length within indicative site clearance boundary (m) | Total habitat length within Order Limits (m) | Total habitat length within 250m of Order Limits (m) | Description |
|---|--|--|--|--|
| | | | | Corridor Survey for further information). |
| G2.2 - Running water - mesotrophic | 1048.8 | 1190.8 | 6309.8 | Wet ditches and sections of watercourses. See ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey for further information). |
| I1.1.1 - Inland cliff - acid/neutral | 32.2 | 32.3 | 642.3 | Cliff of exposed sandstone. |
| I2.2 - Spoil | 0 | 0 | 0.6 | Vegetated rock and soil heaps. |
| J1.1 - Cultivated/disturbed land - arable | 561 | 561 | 2468.6 | Strips of arable habitat. |
| J1.4 - Introduced shrub | 0 | 0 | 58 | Strips of ornamental planting. |
| J2.1.1 - Intact hedge - native species-rich | 30258.7 | 34840.1 | 60065.4 | See ES Appendix 6.4: Hedgerow (Application Document Number 3.4) for full description. |
| J2.1.2 - Intact hedge - species-poor | 9057.6 | 9898.9 | 8946.6 | See ES Appendix 6.4: Hedgerow (Application Document Number 3.4) for full description. |
| J2.3.1 - Hedge with trees - native species-rich | 5710.3 | 6520.7 | 7151.2 | See ES Appendix 6.4: Hedgerow (Application Document Number 3.4) for full description. |
| J2.3.2 - Hedge with trees - species-poor | 3936.7 | 4506.1 | 4906.7 | See ES Appendix 6.4: Hedgerow (Application Document Number 3.4) for full description. |
| J2.4 - Fence | 44008.2 | 51808.3 | 88036.2 | Post and wire fences. |
| J2.5 - Wall | 17024.3 | 19055.5 | 28741.1 | Dry stone walls. |
| J2.6 - Dry ditch | 1831.9 | 2530.5 | 2522.7 | Dry ditches mostly vegetated with tall ruderal species. |
| J3.6 - Buildings | 0 | 0 | 228 | Manmade structure. |

| Linear phase 1 habitat type | Total habitat length within indicative site clearance boundary (m) | Total habitat length within Order Limits (m) | Total habitat length within 250m of Order Limits (m) | Description |
|-----------------------------|--|--|--|--|
| J4 - Bare ground | 3565.8 | 3765.1 | 6223.4 | Unvegetated access, pedestrian and vehicle tracks. |
| J5 - Other habitat | 535.5 | 784.2 | 692.6 | Access tracks with partial grass cover. |

M6 Junction 40 to Kemplay Bank

Overview

- 6.3.5.22 Improved grassland dominates the habitats within this scheme. Areas of hardstanding, buildings and amenity grasslands, associated with urban habitat and infrastructure at Penrith, are also present. Areas of deciduous woodland, semi-natural neutral grasslands, neutral grassland and scrub are also present within the indicative site clearance boundary.
- 6.3.5.23 Riparian corridor and running water habitat associated with the River Eden and River Eamont are present within 250m of the indicative site clearance boundary. Much of this habitat is bound by adjacent areas of semi-natural woodlands and mixed woodland habitats (see ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Document Number 3.4) for full details).
- 6.3.5.24 Further habitats of note, outside of the indicative site clearance boundary but within 250m, include an area of mixed woodland that meets the River Eamont west of the M6, an area of deciduous woodland south-west of Kemplay Bank roundabout, and an area of mixed woodland east of Kemplay Bank roundabout on the eastbound carriageway side of the existing A66.

Habitats of Principal Importance

- 6.3.5.25 Table 7: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within, and within 250m of, both the indicative site clearance boundary and the Order Limits of this scheme recorded through the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 7: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 1.55 | 11.72 | 1.71 | 13.83 |
| Lowland fens | N/A | 0.19 | N/A | 0.19 |

Protected or otherwise notable species

6.3.5.26 Protected and notable plant species identified within the desk study are detailed within Table 8: Protected and notable plant species identified within the desk study. This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List (*A vascular Plant Red List for England*), AWI species (*The Wild Flower Key*), the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

6.3.5.27 The following notable species were recorded during the field surveys within 250m of the Order Limits:

- cotoneaster sp. (*Cotoneaster* sp.)
- Indian balsam
- snowberry (*Symphoricarpos albus*) present within woodland areas.

Table 8: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Yellow Star-of-Bethlehem | NY508284 | 0 | | | | LC | Yes | | |
| Wood Millet | NY508284 | 0 | | | | LC | Yes | | |
| Wild Service-tree | NY508284 | 0 | | | | LC | | | Yes |
| Pyramidal Orchid | NY51982824 | 496 | | | | LC | | | Yes |
| Lords-and-Ladies | NY506277 | 664 | | | | LC | Yes | | |
| False-brome | NY506277 | 664 | | | | LC | Yes | | |
| Wood Melick | NY506277 | 664 | | | | LC | Yes | | |
| Wood Meadow-grass | NY506277 | 664 | | | | LC | Yes | | |
| Knotted Clover | NY42Y | 907 | | | | LC | | | Yes |
| Northern Yellow-cress | NY507307 | 1416 | | | | | | | Yes |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

6.3.5.28 Invasive non-native plant species listed on Schedule 9 of the WCA were also recorded during the field surveys within the Order Limits. These included giant hogweed and Indian balsam which were both associated with the banks of the River Eamont.

Phase 1 Habitats

6.3.5.29 Table 9: Phase 1 habitat types recorded during field surveys of the M6 Junction 40 to Kemplay Bank scheme describes the Phase 1 habitat areas present within the Order Limits and Table 10: Phase 1 habitat types within 250m of the M6 Junction 40 to Kemplay Bank scheme describes those within 250m of the M6 Junction 40 to Kemplay Bank scheme.

Table 11: Phase 1 point habitat descriptions for within the M6 Junction to Kemplay Bank scheme Order Limits describes the baseline Phase 1 habitat points within the Order Limits and

- 6.3.5.30 Table 12: Phase 1 point habitat descriptions for within 250m of the M6 Junction to Kemplay Bank scheme Order Limits describes those within 250m of the Order Limits of the M6 Junction 40 to Kemplay Bank scheme.
- 6.3.5.31 Table 13: Summary of linear phase 1 habitats recorded within the M6 Junction 40 to Kemplay Bank scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the M6 Junction 40 to Kemplay Bank scheme.

Table 9: Phase 1 habitat types recorded during field surveys of the M6 Junction 40 to Kemplay Bank scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| B4 - Improved grassland | 18ha | 14.51ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot (<i>Dactylis glomerata</i>) and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 2.21ha | 2.14ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. These include perennial rye-grass, Yorkshire-fog (<i>Holcus lanatus</i>), cock's-foot, creeping buttercup (<i>Ranunculus repens</i>) and creeping thistle (<i>Cirsium arvense</i>). | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 2ha | 1.93ha | Combination of derelict buildings, pre-fabricated buildings, other buildings of mixed ages and uses and areas of hardstanding artificial sealed surfaces. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 1.84ha | 1.83ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial rye-grass. High levels of disturbance associated with amenity uses, such as football pitches or garden lawns. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity limit the ecological importance of this common and widespread habitat type to negligible. |
| J5 - Other habitat | 0.1ha | 0.09ha | Combination of artificial sealed surfaces and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|--|
| J4 - Bare ground | 0.02ha | 0.02ha | Access track covered in sealed surfaces. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| B2.2 - Neutral grassland - semi-improved | 2.95ha | 2.10ha | Areas of grassland with mixed species diversity. The majority of this habitat has a moderate species composition of coarse and fine grasses with forb diversity ranging from highly diverse to a limited number of ruderal species. Species recorded include false oat grass, red fescue, sheep's fescue (<i>Festuca ovina</i>), Yorkshire-fog, cock's-foot, common bent and crested dog's-tail. Recorded forbs include spear thistle (<i>Cirsium vulgare</i>), creeping buttercup, selfheal (<i>Prunella vulgaris</i>), common knapweed <i>Centaurea nigra</i> and common bird's-foot trefoil (<i>Lotus corniculatus</i>). Rare instances of notable species such as Twayblade (<i>Listera ovata</i>) and common spotted orchid (<i>Dactylorhiza fuchsii</i>) were also recorded within an area of Skirsgill Depot. | Local to National - some areas, such as within Skirsgill Depot, qualify as HoPI (Lowland Meadows and Upland Hay Meadows) and as such are of National importance. Other areas fall short of this criteria due to management regimes and lower species diversity. However, they still represent some floral interest and as such are of Local interest as a minimum. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.19ha | 0.19ha | Sparsely vegetated land extending from reprofiled adjacent bank. Bare cobble and pebble substrate with bare earth and a range of early successional communities present. Grasses include cock's-foot, false oat grass and common bent. Ruderal and herb species include common nettle (<i>Urtica dioica</i>), great willowherb (<i>Epilobium hirsutum</i>), oxeye daisy (<i>Leucanthemum vulgare</i>), ribwort plantain | Local - the successional communities present provide moderate diversity of floral species. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| | | | (<i>Plantago lanceolata</i>) and black medic (<i>Medicago lupulina</i>). | |
| A1.1.2 - Broadleaved woodland - plantation | 2.23ha | 1.99ha | Mostly present within small fragments throughout the Scheme, this habitat is subject to a range of management types and species compositions. This includes old areas of hazel coppice and mature plantation woodland which provide moderate levels of naturalness and therefore ecological interest. The woodlands are dominated by native, neophyte or near-native species which provide a range of opportunities for wildlife. Tree species include oak (<i>Quercus</i> sp.), silver birch (<i>Betula pendula</i>), ash, rowan (<i>Sorbus aucuparia</i>), sycamore (<i>Acer pseudoplatanus</i>) and hazel (<i>Corylus avellana</i>). | National to Local - some mature areas of this habitat qualify as HoPI (Lowland Mixed Deciduous Woodland) and are therefore of National importance. Other areas may fall short of this criteria, however remain of at least Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 2.16ha | 2.12ha | Dominated by conifer plantation woodlands with dense tree spacing. Small area of Scots pine (<i>Pinus sylvestris</i>) plantation also present. | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 6.24ha | 6.14ha | Small woodland blocks and tree belts dominated by native species. These include oak, hazel, rowan, holly (<i>Ilex aquifolium</i>) and Scots pine. Occasional non-native species are also present, such as Norway maple (<i>Acer platanoides</i>). | National to Local - some mature areas of this habitat qualify as HoPI (Lowland Mixed Deciduous Woodland) and are therefore of National importance. Other areas may fall short of this criteria, however remain of at least Local ecological importance. |
| A1.1.1 - Broadleaved | 0.96ha | 0.76ha | Mature woodland blocks ranging in size between approximately 0.1 and 0.2ha. Comprising a mix of native species, including | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|--|---|
| woodland - semi-natural | | | oak, birch, beech (<i>Fagus sylvatica</i>), ash and hazel. | Cumbria BAP habitats (upland oak woodland, upland mixed ash woodland, wet woodland). |
| A2.1 - Scrub - dense/continuous | 1.43ha | 1.41ha | Primarily comprising small (under 0.1ha) blocks of dense scrub with two larger areas of approximately 0.3ha and 0.4ha in area. Species present include abundant blackthorn (<i>Prunus spinosa</i>) and hawthorn (<i>Crataegus monogyna</i>) with bramble (<i>Rubus fruticosus</i> agg.), elder (<i>Sambucus nigra</i>) and willow (<i>Salix</i> sp.) also present. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 0.4ha | 0.40ha | Small (approximately 1.4ha and below) areas of that habitat are scattered throughout the scheme. Species present include frequent common nettle and hogweed (<i>Heracleum sphondylium</i>) with false oat grass, bramble and elder also present. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| A1.3.1 - Mixed woodland - semi-natural | 0.16ha | 0.14ha | Single area present within the scheme, located west of the Skirsgill Interchange roundabout, on the northern side of the existing A66. A linear woodland block with a gappy canopy comprising a mix of native and non-native species. These include oak, ash, in addition to the non-natives Italian alder (<i>Alnus cordata</i>) and Leyland cypress (<i>Cuprocyparis x leylandii</i>). Common woodland ground flora species are present, including wood avens (<i>Geum urbanum</i>), herb-Robert (<i>Geranium robertianum</i>) and garlic mustard (<i>Alliaria petiolate</i>). | County - a substantial proportion of this woodland comprises non-native tree species and therefore it does not fulfil the criteria for any HoPI of National importance. However, as a woodland habitat with a native broadleaved component, there remains some ecological interest. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|-------------------------------------|-------------------------------|---|--|--|
| G1.2 - Standing water - mesotrophic | >0.01ha | >0.01ha | Recently constructed (less than 5 years old) small ornamental pond with a feature fountain in the middle, located east of Kemplay Bank Roundabout. Little vegetation was recorded within the pond at the time of survey. | Local - garden and ornamental ponds such as this fall short of the HoPI criteria for pond. |

Table 10: Phase 1 habitat types within 250m of the M6 Junction 40 to Kemplay Bank scheme

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|--|---|---|---|--|
| B4 - Improved grassland | 57.9ha | 54.72ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 1.63ha | 1.71ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 20.72ha | 20.51ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 19.57ha | 19.57ha | As within indicative site clearance boundary. | Negligible - common and widespread species composition with a low level of habitat type naturalness. |
| J5 - Other habitat | 7.06ha | 7.05ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J4 - Bare ground | 0.03ha | 0.03ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| B2.2 - Neutral grassland - semi-improved | 2.45ha | 3.19ha | As within indicative site clearance boundary. Small area of grassland with Twayblade and common spotted orchid recorded within an area of Skirsgill Depot adjacent to the indicative site clearance boundary. | Local to National - some areas, such as within Skirsgill Depot, qualify as HoPI (Lowland Meadows and Upland Hay Meadows) and as such are of National importance. Other areas fall short of this criteria due to management regimes and lower |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|--|---|---|--|---|
| | | | | species diversity. However, they still represent some floral interest and as such are of Local interest as a minimum. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.03ha | 0.04ha | Areas described within indicative site clearance boundary overlap into adjacent land within 250m. | Local - the successional communities present provide moderate diversity of floral species. |
| A1.1.2 - Broadleaved woodland - plantation | 4.89ha | 5.09ha | As within indicative site clearance boundary. Presence of cotoneaster. | National to Local - some mature areas of this habitat qualify as HoPI (Lowland Mixed Deciduous Woodland) and are therefore of National importance. Other areas may fall short of this criterion, however remain of at least Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 0.82ha | 0.84ha | As within indicative site clearance boundary. | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 9.3ha | 8.81ha | As within indicative site clearance boundary, a series of small woodland blocks. In addition, one large woodland block is also present, approximately 5.5ha, comprising non-native species. Presence of Indian balsam. | National to Local - some mature areas of this habitat qualify as HoPI (Lowland Mixed Deciduous Woodland) and are therefore of National importance. Other areas fall short of this criteria including the woodland large woodland block comprising non-native species. These areas however |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|--|---|---|---|--|
| | | | | remain of at least Local ecological importance. |
| A1.1.1 - Broadleaved woodland - semi-natural | 13.2ha | 12.15ha | As within indicative site clearance boundary. Larger woodland blocks are also present within this area, ranging up to approximately 2.9ha. Ancient woodland indicator species present within some areas, such as male fern (<i>Dryopteris filix-mas</i>), yellow Archangel (<i>Laminum galeobdolon</i>) and dog's mercury (<i>Mercurialis perennis</i>). Presence of Indian balsam. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as Cumbria BAP habitats (upland oak woodland, upland mixed ash woodland, wet woodland). |
| A2.1 - Scrub - dense/continuous | 1.97ha | 1.93ha | Species composition as within indicative site clearance boundary. Areas of this habitat are mostly below 0.1ha with several exceptions which cover approximately 0.17ha, 0.33ha and 0.85ha. Presence of snowberry. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| C3.1 - Other tall herb and fern - ruderal | 0.47ha | 0.48ha | As within indicative site clearance boundary. Presence of Indian balsam. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| A1.3.1 - Mixed woodland - semi-natural | 0.08ha | 0.10ha | The same woodland block present within the indicative site clearance boundary extends into this area. | County - a substantial proportion of this woodland comprises non-native tree species and therefore it does not fulfil the criteria for any HoPI of National importance. However, as a woodland habitat with a native broadleaved |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|---|---|---|---|---|
| | | | | component, there remains some ecological interest. |
| A3.1 - Broadleaved Parkland/scattered trees | 1.01ha | 1.01ha | Grassland areas with scattered, native, mature deciduous trees. | National to Local - The majority of this habitat meets the HoPI criteria for Wood-Pasture and Parkland. Several small areas of this habitat (approximately 0.1ha and below) are considered to fall below the threshold but are still of at least Local importance due to the constituent mature, native, deciduous trees. |
| A2.2 - Scrub - scattered | 1.16ha | 1.18ha | Small blocks (approximately 0.1ha or smaller) and one larger block (approximately 1ha) of scattered scrub over grassland. Species present include hawthorn and rose (<i>Rosa</i> sp.) | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| D3 - Lichen/bryophyte heath | 0.05ha | 0.05ha | Moss dominated with some grasses and occasional bare patches. Confined to small areas. | National - qualifies as HoPI and Cumbria BAP Habitat. |
| G1.2 - Standing water - mesotrophic | 0.03ha | 0.03 ha | The same pond present within the indicative site clearance boundary extends into this area. | Local - garden and ornamental ponds such as this fall short of the HoPI criteria for pond. |
| A3.3 - Mixed Parkland/scattered trees | 0.52ha | 0.52ha | Mature trees over amenity grassland. Tree species include small-leaved lime (<i>Tilia cordata</i>), horse-chestnut (<i>Aesculu hippocastanum</i>), holly and giant redwood (<i>Sequoiadendron giganteum</i>). | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|-------------------------|---|---|---|--|
| J1.4 - Introduced shrub | 0.1ha | 0.10ha | Dense stands of laurel and other non-native introduced shrub species. | Negligible - non-native, invasive species with negligible ecological interest. |

Table 11: Phase 1 point habitat descriptions for within the M6 Junction to Kemplay Bank scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY5282829278 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature lime. | NY5278129288 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash. | NY5252528962 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature field maple. | NY5316229382 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY5290929376 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY5293529346 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY5288929355 |
| A2.2 - Scrub - scattered | Elder scrub at boundary. | NY5196129149 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran lime tree with significant epicormic growth. | NY5112628755 |
| A3.1 - Broadleaved Parkland/scattered trees | Apple tree isolated domestic mature. | NY5210429124 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore isolated domestic mature. | NY5210329116 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore isolated domestic mature. | NY5210329111 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn isolated domestic mature. | NY5210229107 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn isolated domestic mature. | NY5209629093 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn isolated domestic mature. | NY5208429079 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash. | NY5199729041 |
| A3.1 - Broadleaved Parkland/scattered trees | Early mature pedunculate oak roadside tree. | NY5230329283 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree. | NY5228629302 |

| Phase 1 habitat type | Description | Grid reference |
|---|----------------------------------|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5138328938 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore isolated on road verge. | NY5139128940 |
| A3.1 - Broadleaved Parkland/scattered trees | Apple isolated on road verge. | NY5139528939 |
| A3.1 - Broadleaved Parkland/scattered trees | Elder isolated on road verge. | NY5139828939 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash isolated on road verge. | NY5142328934 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5145628928 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5146528928 |
| A2.2 - Scrub - scattered | Scattered dog rose scrub. | NY5145928927 |
| A2.2 - Scrub - scattered | Scattered dog rose scrub. | NY5146328928 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5147128927 |
| A2.2 - Scrub - scattered | Scattered blackthorn scrub. | NY5147128927 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5147328926 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5147828924 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash isolated on road verge. | NY5148728924 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5149428923 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn isolated on road verge. | NY5149928923 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash isolated on road verge. | NY5150228922 |
| A3.1 - Broadleaved Parkland/scattered trees | Silver birch. | NY5214128860 |
| A3.1 - Broadleaved Parkland/scattered trees | Silver birch. | NY5214228862 |
| A3.1 - Broadleaved Parkland/scattered trees | Silver birch. | NY5214828865 |
| A3.1 - Broadleaved Parkland/scattered trees | Silver birch. | NY5213928861 |

Table 12: Phase 1 point habitat descriptions for within 250m of the M6 Junction to Kemplay Bank scheme Order Limits

| Phase 1 Habitat type | Description | Grid Reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature quercus sp. Negligible bat roosting potential. | NY5209829367 |
| A3.1 - Broadleaved Parkland/scattered trees | Cherry tree, no bat roost suitability. | NY5212329206 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature elm tree. | NY5217229241 |
| A3.1 - Broadleaved Parkland/scattered trees | Cherry and salix sp. | NY5216629271 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature lime tree. | NY5223529283 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash with bird box. | NY5225029296 |
| A3.1 - Broadleaved Parkland/scattered trees | Copper beech with bird box. | NY5225629314 |
| A3.1 - Broadleaved Parkland/scattered trees | Two young ash trees. | NY5223529331 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature norway maple. | NY5222129358 |
| A3.1 - Broadleaved Parkland/scattered trees | Copper beech. | NY5221329366 |
| A3.1 - Broadleaved Parkland/scattered trees | Cherry tree semi-mature. | NY5219429366 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature beech tree, numerous bat roost features, moderate bat roost suitability., requires survey. | NY5216929417 |
| A3.1 - Broadleaved Parkland/scattered trees | Young silver birch. | NY5212929296 |
| A3.1 - Broadleaved Parkland/scattered trees | Horse chestnut. | NY5156728550 |
| A3.1 - Broadleaved Parkland/scattered trees | Beech tree. | NY5149428677 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore, no features for bats visible. | NY5256228900 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature cherry and elder scrub. | NY5206929355 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore, no features for bats visible. | NY5261328946 |
| A3.1 - Broadleaved Parkland/scattered trees | Rowan semi-mature. | NY5282029573 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY5216929281 |
| A3.1 - Broadleaved Parkland/scattered trees | Beech semi-mature. | NY5281829583 |
| A3.1 - Broadleaved Parkland/scattered trees | Rowan coppiced semi-mature. | NY5283029580 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sessile oak, no features visible for bats. | NY5262329025 |

| Phase 1 Habitat type | Description | Grid Reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature lime. | NY5268128994 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore, one rot hole and some lifted bark on trunk. | NY5253528874 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY5274829032 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature beech. | NY5274629124 |
| A3.1 - Broadleaved Parkland/scattered trees | Alnus tree, semi-mature. | NY5282629574 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature lime. | NY5259028993 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature lime coppiced. Extensive rot at top of trunk but unable to determine whether there are suitable. | NY5254928842 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature horse chestnut, lifted bark throughout trunk and branches. | NY5268129065 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore, rot holes in branches and potentially hollow trunk. | NY5267229199 |
| A3.1 - Broadleaved Parkland/scattered trees | English oak young. | NY5283129574 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore semi-mature. | NY5282329560 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY5257628918 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, several rot holes in branches. | NY5271429174 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature copper beech. | NY5217629283 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran lime tree with significant epicormic growth. | NY5104928745 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran lime tree. | NY5101528707 |
| A2.2 - Scrub - scattered | Elder and ash. | NY5190529473 |
| A2.2 - Scrub - scattered | Cherry sapling. | NY5189929338 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered cherry trees. | NY5190529389 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry tree. | NY5190529387 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry tree. | NY5190329384 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry tree. | NY5190329384 |

| Phase 1 Habitat type | Description | Grid Reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry tree. | NY5190529385 |
| A2.2 - Scrub - scattered | Willow saplings. | NY5191329377 |
| A3.1 - Broadleaved Parkland/scattered trees | Small group of trees, semi-mature, elder. | NY5197029155 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated semi-mature ash. | NY5195928775 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn. | NY5207028832 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn. | NY5206228832 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn. | NY5205128833 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn. | NY5204528832 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated ash sapling. | NY5201428831 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash. | NY5212428820 |
| A2.2 - Scrub - scattered | Dogrose. | NY5212228819 |
| A2.2 - Scrub - scattered | Elder. | NY5211428817 |
| A3.1 - Broadleaved Parkland/scattered trees | Possible veteran beech with a circumference of 3 to 4 meters. | NY5228029388 |

Table 13: Summary of linear phase 1 habitats recorded within the M6 Junction 40 to Kemplay Bank scheme Order Limits

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|--|--|--------------------------------|------------------------------------|
| A1.1.1 - Broadleaved woodland - semi-natural | 286 | 479 | 805 |
| A1.1.2 - Broadleaved woodland - plantation | 270 | 383 | 328 |
| A1.3.1 - Mixed woodland - semi-natural | 8 | 8 | 68 |
| A3.1 - Broadleaved Parkland/scattered trees | 220 | 220 | 279 |
| A3.3 - Mixed Parkland/scattered trees | 47 | 47 | 0 |
| G2 - Running water | 559 | 728 | 5509 |
| G2.2 - Running water - mesotrophic | 54 | 173 | 916 |
| J1.4 - Introduced shrub | 0 | 0 | 43 |

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| J2.1.1 - Intact hedge - native species-rich | 455 | 461 | 811 |
| J2.1.2 - Intact hedge - species-poor | 19 | 19 | 130 |
| J2.4 - Fence | 1942 | 2940 | 3831 |
| J2.5 - Wall | 28 | 28 | 261 |

Penrith to Temple Sowerby

Overview

- 6.3.5.32 This scheme is dominated by improved grassland, arable and species-poor semi-improved neutral grassland habitats. These are bound mainly by fences and stone walls but to the east more intact species-rich hedgerows with trees and species-poor hedges with trees are present. The arable habitats are intersected by the River Eamont to the north (rivers and streams HoPI), with an area of broad-leaved woodland (deciduous woodland HoPI) and a vertical area of inland cliff (sandstone). A small tributary, Light Water, connects to floodplain marshy grassland habitat (HoPI). Smaller areas of species-rich semi-improved neutral grassland (HoPI), plantation woodland, marsh and scrub and scattered trees are present in areas both north and south of the existing A66.
- 6.3.5.33 The large woodland block to the south, associated with Centre Parcs, contains mixed woodland habitats (Planted Ancient Woodland Site and HoPI) and coniferous plantation. An area of wet woodland is also present to the east of the scheme. Pond habitats are present of varying type and quality and condition (all are assumed to qualify as pond HoPI).
- 6.3.5.34 This scheme crosses Thacka Beck, Light Water and an Unnamed Tributary of River Eamont 3.3 (ES Figure 14.1: Surface Water Features (Application Document 3.3)). Light Water is of National conservation importance, while Thacka Beck and the Unnamed Tributary of River Eamont 3.3 are considered to be of Local conservation importance (see ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4) for full details).

Habitats of Principal Importance

- 6.3.5.35 Table 14: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary and the Order Limits, and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 14: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|---------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 0.09 | 3.20 | 0.09 | 4.75 |
| Traditional orchard | 0.11 | 0.05 | 0.11 | 0.03 |

Protected or otherwise notable species

- 6.3.5.36 Protected and notable plant species identified within the desk study are detailed within Table 15: Protected and notable plant species identified within the desk study. This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.37 The protected or otherwise notable plant species recorded from the field survey include the following invasive species:
- Indian balsam
 - Canadian waterweed (*Elodea canadensis*)
 - Nuttall's waterweed (*Elodea nuttallii*)
 - yellow archangel (*L. galeobdolon subspecies argentatum*)
- 6.3.5.38 The Schedule 9 species, Indian balsam, was recorded along the Unnamed Tributary of River Eamont 3.3.

Table 15: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-------------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Common Cudweed | NY562295 | 243 | | | | NT | | Yes | Yes |
| Hoary Cinquefoil | NY575294 | 265 | | | | NT | | | Yes |
| Bog Bilberry | NY578274 | 707 | | | | LC | | | Yes |
| Wild Pansy | NY5630 | 735 | | | | NT | | Yes | Yes |
| Creeping Lady's-tresses | NY582272 | 793 | | | | LC | Yes | | Yes |
| Common Cow-wheat | NY585302 | 1297 | | | | LC | Yes | | |
| Shrubby Cinquefoil | NY6002829715 | 1316 | | | | | | Yes | Yes |
| Wild Liquorice | NY598299 | 1352 | | | | LC | | | Yes |
| Wood Stitchwort | NY60842816 | 1402 | | | | LC | Yes | | |
| Field Mouse-ear | NY570263 | 1909 | | | | LC | | | Yes |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.39 Table 16: Phase 1 habitat types within the Penrith to Temple Sowerby scheme describes the Phase 1 habitat areas present within the indicative site clearance boundary and the Order Limits of the Penrith to Temple Sowerby scheme.
- 6.3.5.40 Table 17: Phase 1 Habitat Types within 250m of the Penrith to Temple Sowerby scheme describes the Phase 1 habitats present within 250m of the indicative site clearance boundary and the Order Limits of the Penrith to Temple Sowerby scheme.
- 6.3.5.41 Table 18: Phase 1 point habitat descriptions for within the Penrith to Temple Sowerby scheme Order Limits describes the Phase 1 habitat descriptions for point habitats within the Order Limits and Table 19: Phase 1 point habitat descriptions for within 250m of the Penrith to Temple Sowerby scheme Order Limits describes those within 250m of the Order Limits of the Penrith to Temple Sowerby scheme.
- 6.3.5.42 Table 20: Summary of linear phase 1 habitats recorded within the Penrith to Temple Sowerby scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Penrith to Temple Sowerby scheme.

Table 16: Phase 1 habitat types within the Penrith to Temple Sowerby scheme

| Phase 1 Habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 41.93ha | 37.00ha | Dominated by arable fields used for a combination of silage, cereal and other crops. Field margins are absent in some fields and up to approximately 2m in others. Where margins are present they comprise grassland and ruderal species, typical of arable field margins. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 31.63ha | 47.63ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 21.45ha | 22.01ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.14ha | 0.11ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.12ha | 0.12ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial rye-grass. High levels of disturbance | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |

| Phase 1 Habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| | | | associated with amenity uses, such as football pitches or garden lawns. | |
| J5 - Other habitat | 0.72ha | 0.99ha | Dominated by artificial sealed surfaces of negligible ecological interest. There is however an area (approximately 0.27ha) of open mosaic habitat that comprises areas of bare ground, scrub, mature trees, ephemeral vegetation and ruderal vegetation. | National to Negligible - areas of open mosaic match the HoPI criteria for Open Mosaic Habitats on Previously Developed Land and are therefore of National importance. The remaining areas are of negligible importance. |
| J4 - Bare ground | 0.17ha | 0.10ha | Devoid of notable flora. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 3.6ha | 3.37ha | Areas of grassland with mixed species diversity. The majority of this habitat has a moderate diversity. Species recorded include false oat grass, red fescue, sheep's fescue, Yorkshire-fog, cock's-foot, common bent and crested dog's-tail. Recorded forbs include spear thistle, creeping buttercup, selfheal, common knapweed <i>Centaurea nigra</i> , common bird's-foot trefoil, crosswort (<i>Cruciata laevipes</i>), harebell (<i>Campanula rotundifolia</i>) and meadow vetchling (<i>Lathyrus pratensis</i>). | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| A1.1.2 - Broadleaved woodland - plantation | 0.88ha | 0.78ha | Mostly present within small fragments throughout the Scheme. The woodlands are dominated by native, neophyte or near-native species which provide a range of opportunities for wildlife. Tree species include oak, silver birch, ash, | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |

| Phase 1 Habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| | | | rowan, sycamore, Scots pine and hazel. Areas of Indian balsam have been recorded. | |
| A1.2.2 - Coniferous woodland - plantation | 2.03ha | 0.67ha | Dominated by conifer plantation woodlands with dense tree spacing. Small area of Scots pine (<i>Pinus sylvestris</i>) plantation also present. Underdeveloped understories with herb layer dominated by grasses. | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 1.65ha | 1.13ha | Small woodland blocks ranging from approximately 0.6ha to 0.1ha. Dominated by native species with some instances of non-natives such as sitka spruce (<i>Picea sitchensis</i>). Native species include oak, silver birch, ash, blackthorn and Scots pine. Underdeveloped understory. No significant mature trees or groupings of such. Indian balsam recorded within some areas. | Local - lack of naturalness, understory development and age structure limit the ecological interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 1.54ha | 1.54 ha | Mature woodland blocks ranging in size between approximately 0.8 and 0.1ha. Comprising a mix of native species broadleaved species including oak, ash, elder, willow, silver birch and hazel. One area of woodland, south of the A66 is within waterlogged soils with a willow understory and a ground flora including soft rush (<i>Juncus effusus</i>) Indian balsam | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as Cumbria BAP habitats (upland oak woodland, upland mixed ash woodland, wet woodland). |

| Phase 1 Habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| | | | has been recorded within woodland north of the existing A66. | |
| A2.1 - Scrub - dense/continuous | 1.1ha | 1.35ha | Blocks of dense scrub. Species present include abundant blackthorn and hawthorn, gorse (<i>Ulex europeaeus</i>), bramble, elder and willow. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 1ha | 1.00ha | Areas of approximately 0.5ha and below are scattered throughout the scheme. Species present include frequent common nettle, rosebay willowherb (<i>Chamerion angustifolium</i>) and hogweed with false oat grass, bramble and elder also present. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| C1.1 - Bracken - continuous | 0.53ha | 0.53ha | Concentrated along boundary features, roadsides and road embankments. | Local - In small areas such as this, bracken provides some ecological interest. However, the low species diversity of this habitat type limits is interest and if left unmanaged, can become an injurious habitat type, colonising and overtaking other more diverse and important habitats such as diverse grasslands. |
| A1.3.1 - Mixed woodland - semi-natural | 0.28ha | 0.26ha | Small areas (between approximately 0.2 and 0.05ha) of habitat. Species present include oak, ash, elder, sycamore, silver birch and Scots pine. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| F1 - Swamp | 0.01ha | 0.01ha | Species present include bulrush (<i>Typha</i> sp.), Yorkshire fog, common reed | Local - the habitat fails to meet the HoPI criteria due to the low abundance of common reed. |

| Phase 1 Habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|-----------------------------|-------------------------------|---|---|--|
| | | | (<i>Phragmites australis</i>), common nettle and rosebay willowherb. | |
| B5 - Marsh/marshy grassland | 0.55ha | 0.32 ha | Areas of wet and marshy grassland. Species recorded include common reed, soft rush, Yorkshire fog, common nettle, creeping thistle, creeping butter cup and occasional birds foot trefoil, common bistort (<i>Persicaria bistorta</i>) and marsh woundwort (<i>Stachys palustris</i>). Species composition within these areas are typical of wet grasslands and marshes with high levels of nutrient. Species diversity comprises a combination of wetland and non-wetland specialists. Those recorded are common and widespread. | Local - the areas of habitat within the Scheme fall below any wetland HoPI and Local BAP Habitat criteria. |

Table 17: Phase 1 Habitat Types within 250m of the Penrith to Temple Sowerby scheme

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|---|---|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 155.42ha | 142.48ha | As within indicative site clearance boundary. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|--|---|---|---|---|
| B4 - Improved grassland | 104.31ha | 99.22ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 22.5ha | 20.90ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.47ha | 0.50ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 4.22ha | 4.22ha | As within indicative site clearance boundary. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 1.16ha | 2.10ha | As within indicative site clearance boundary. An area of approximately 1ha of open mosaic habitat is present south of the existing A66. This comprises areas of bare ground, scrub, mature trees, ephemeral vegetation, ruderal vegetation and standing water. | National to Negligible - areas of open mosaic match the HoPI criteria for Open Mosaic Habitats on Previously Developed Land and are therefore of National importance. The remaining areas are of negligible importance. |
| J4 - Bare ground | 0.21ha | 0.41ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 1.05ha | 1.22ha | As within indicative site clearance boundary. | Local - species present are indicative of some nutrient improvement, reducing |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|--|---|---|--|---|
| | | | | species diversity and resulting in a sward dominated by coarse grasses. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | #N/A | 0.04ha | Species recorded include creeping thistle, spear thistle, creeping buttercup, broad-leaved dock (<i>Rumex obtusifolius</i>) and annual meadow-grass (<i>Poa annua</i>) | Local - low diversity comprising common and widespread species. |
| A1.1.2 - Broadleaved woodland - plantation | 2.29ha | 2.39ha | As within indicative site clearance boundary, however, no presence of Indian balsam recorded within these areas. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 7.25ha | 6.65ha | As within indicative site clearance boundary, however, presence of Indian balsam recorded within these areas. | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 5.15ha | 5.70ha | As within indicative site clearance boundary. | Local - lack of naturalness, understory development and age structure limit the ecological interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 13.52ha | 8.70ha | As within indicative site clearance boundary. Larger blocks are present up to approximately 1.4ha. In land cliff present within one woodland block to the north of the existing A66, adjacent to the indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as Cumbria BAP habitats (upland oak woodland, upland mixed ash woodland, wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.62ha | 0.36ha | As within indicative site clearance boundary. | Local - common and widespread habitat type. However, as a successional habitat |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|---|---|---|---|---|
| | | | | type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 0.71ha | 0.71ha | As within indicative site clearance boundary. Indian balsam also recorded. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| C1.1 - Bracken - continuous | 0ha | Less than 0.01ha | As within indicative site clearance boundary. | Local - In small areas such as this, bracken provides some ecological interest. However, the low species diversity of this habitat type limits is interest and if left unmanaged, can become an injurious habitat type, colonising and overtaking other more diverse and important habitats such as diverse grasslands. |
| A1.3.1 - Mixed woodland - semi-natural | 0.22ha | 0.24ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| B5 - Marsh/marshy grassland | 0.86ha | 1.09ha | As within indicative site clearance boundary. | Local - the areas of habitat within the Scheme fall below any wetland HoPI and Local BAP Habitat criteria. |
| G1.1 - Standing water - eutrophic | 0.39ha | 0.39ha | Lake with common reed and soft rush at the margins. Large amount of dead wood within the water from fallen trees. | National - qualifies as HoPI Eutrophic Standing Waters. |
| I2.2 - Spoil | #N/A | 0.02ha | Bare unvegetated spoil. Negligible floral component. | Negligible |

| Phase 1 Habitat | Area (ha) within 250m of the Order Limits | Area (ha) within 250m of the indicative site clearance boundary | Description | Ecological importance of habitat |
|-------------------------|---|---|---|--|
| J1.4 - Introduced shrub | 0.01ha | 0.01ha | Areas of non-native shrub species, including snowberry. | Negligible - non-native, invasive species with negligible ecological interest. |

Table 18: Phase 1 point habitat descriptions for within the Penrith to Temple Sowerby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Ash negligible bat roost suitability. | NY5627528904 |
| A3.1 - Broadleaved Parkland/scattered trees | Standing dead (ash) tree. | NY5716428866 |
| A3.1 - Broadleaved Parkland/scattered trees | Couple scattered young prunus sp. Tree. Negligible bat roost suitability. | NY5741228850 |
| A3.1 - Broadleaved Parkland/scattered trees | A few scattered ash trees. Coppiced. Negligible bat roost suitability. | NY5738228853 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash, negligee bat roost suitability. | NY5420829004 |
| A3.1 - Broadleaved Parkland/scattered trees | Grey/goat willow hybrid. Negligible bat roost suitability. | NY5420628984 |
| A3.1 - Broadleaved Parkland/scattered trees | Grey/goat willow hybrid. Negligible bat roost suitability. | NY5418628975 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak. Negligible bat roost suitability. | NY5416028965 |
| A3.1 - Broadleaved Parkland/scattered trees | Elder, hawthorn and bramble patch. | NY5411029084 |
| A3.1 - Broadleaved Parkland/scattered trees | Bat roost potential not surveyed due to combine harvester, seen from google street view. | NY5806328764 |
| A3.1 - Broadleaved Parkland/scattered trees | Goat willow tree. | NY5418228947 |
| A3.1 - Broadleaved Parkland/scattered trees | Ulmus glabra. | NY5427928978 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash and grey willow. Negligible bat roost suitability. | NY5413029014 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered trees in marshy area, could not access as unsure of depth of marsh. | NY5556328821 |
| A3.1 - Broadleaved Parkland/scattered trees | Single veteran oak tree, moderate bat roost potential. | NY5756929037 |
| A3.1 - Broadleaved Parkland/scattered trees | Oak tree unknown bat roost potential, viewed from field (unsafe roadside access). | NY5862228705 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature multi-stemmed alder tree on western bank of a small watercourse. | NY5492428945 |
| A2.2 - Scrub - scattered | Young alder growing in small watercourse. | NY5494628858 |
| A2.2 - Scrub - scattered | Young alder growing in small watercourse. | NY5494028887 |
| A3.1 - Broadleaved Parkland/scattered trees | Group of eight non-native semi-mature conifer trees in garden. | NY5496328952 |
| A3.1 - Broadleaved Parkland/scattered trees | Young beech tree. | NY5888228631 |
| A3.1 - Broadleaved Parkland/scattered trees | Young apple tree. | NY5893228631 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY5898928676 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak tree on a66 road verge. | NY5862128700 |
| A3.1 - Broadleaved Parkland/scattered trees | Collection of the mature / semi-mature hawthorn trees. | NY5831628748 |
| A3.1 - Broadleaved Parkland/scattered trees | Silver birch. | NY5821228757 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature lime tree. | NY5789728799 |
| A2.2 - Scrub - scattered | Mature elder. | NY5790228798 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature hawthorn tree on southern a66 road verge. | NY5638128878 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry tree. | NY5741528848 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature cherry tree. | NY5741328849 |
| A3.1 - Broadleaved Parkland/scattered trees | Two mature hawthorn between dry stone wall and ditch. | NY5838828375 |
| A2.2 - Scrub - scattered | Single horse bush between ditch and dry stone wall. | NY5840428365 |
| A2.2 - Scrub - scattered | Single gorse bush between wall and ditch. | NY5838728376 |

Table 19: Phase 1 point habitat descriptions for within 250m of the Penrith to Temple Sowerby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A2.2 - Scrub - scattered | Scattered ulex europeaus and elder scrub on embankment. | NY5583529047 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree, no bat roost suitability. | NY5406829105 |
| A3.1 - Broadleaved Parkland/scattered trees | | NY5423129051 |
| A3.1 - Broadleaved Parkland/scattered trees | Stand of semi-mature ash. Negligible bat roost suitability. | NY5406628910 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature alder on river bank. Potential roost feature on trunk where branch has fallen off. Southeast facing. Approximately 4m up. Low/mod potential. | NY5404829163 |
| A3.1 - Broadleaved Parkland/scattered trees | Copper beech in grazed field. | NY5381429041 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash with potential roost features. | NY5408429154 |
| A3.1 - Broadleaved Parkland/scattered trees | Two semi-mature ash trees. Neg bat roost suitability. | NY5400529028 |
| A3.1 - Broadleaved Parkland/scattered trees | Prunus sp. | NY5387528966 |
| A3.1 - Broadleaved Parkland/scattered trees | Fagus sylvatica. | NY5385128975 |
| A3.1 - Broadleaved Parkland/scattered trees | Approximately 6 sycamore. | NY5653828666 |
| A3.1 - Broadleaved Parkland/scattered trees | Several matures trees in field. | NY5576628772 |
| A3.1 - Broadleaved Parkland/scattered trees | Large single ash tree, low bat roost potential. | NY5779029007 |
| A3.1 - Broadleaved Parkland/scattered trees | Single oak tree, low bat roost potential, survey of affected. | NY5796128903 |
| A3.1 - Broadleaved Parkland/scattered trees | Large ash tree, multiple potential bat roost feature, decay and damage. | NY5810329043 |
| A3.1 - Broadleaved Parkland/scattered trees | V large single ash tree 3m+ circumference. Low bat roost potential. | NY5854128801 |
| A3.1 - Broadleaved Parkland/scattered trees | Large single oak tree, damage potential bat roost feature, low bat roost potential. | NY5860028941 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash trees hollow, low bat roost potential. | NY5882128886 |
| A3.1 - Broadleaved Parkland/scattered trees | Very large veteran oak 4-5m circumference, high bat roost potential, knot hole and damage potential bat roost feature. | NY5893628864 |
| A3.1 - Broadleaved Parkland/scattered trees | Trees (salix sp., sycamore, ash) with bat roost potential but significant distance from scheme. | NY5411329327 |
| A2.2 - Scrub - scattered | Invasive species Indian balsam. | NY5411229325 |
| A3.1 - Broadleaved Parkland/scattered trees | | NY5384429159 |
| A3.1 - Broadleaved Parkland/scattered trees | | NY5385929153 |
| A3.1 - Broadleaved Parkland/scattered trees | | NY5375929125 |
| A3.1 - Broadleaved Parkland/scattered trees | | NY5375129118 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak tree. | NY5432828926 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn tree. | NY5428428740 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature hawthorn tree. | NY5428328741 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY5419128812 |
| A2.2 - Scrub - scattered | Small patch of scrub comprised of broom and european gorse. | NY5499428749 |
| A2.2 - Scrub - scattered | Small patch of scrub comprised of broom. | NY5500228751 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY5501228755 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY5501728754 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature silver birch. | NY5501728740 |
| A2.2 - Scrub - scattered | Two stands of scattered grey willow scrub on margin of watercourse. | NY5497128753 |
| A2.2 - Scrub - scattered | Group of immature alder forming scrub, growing from within the watercourse. | NY5497328737 |
| A2.2 - Scrub - scattered | Elder scrub growing within watercourse. | NY5496928743 |
| A2.2 - Scrub - scattered | Single specimen of elder. | NY5888928623 |
| A3.1 - Broadleaved Parkland/scattered trees | Heavily pollarded mature ash tree. | NY5888128621 |
| A3.1 - Broadleaved Parkland/scattered trees | Heavily pollarded mature ash tree. | NY5888628621 |
| A2.2 - Scrub - scattered | Single specimen of elder. | NY5887728622 |
| A3.1 - Broadleaved Parkland/scattered trees | Young beech tree. | NY5892728622 |
| A3.1 - Broadleaved Parkland/scattered trees | Prunus sp. | NY5886028609 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature alder tree. | NY5837428158 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature alder tree. | NY5837328143 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature alder tree. | NY5837628127 |

Table 20: Summary of linear phase 1 habitats recorded within the Penrith to Temple Sowerby scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A1.1.1 - Broadleaved woodland - semi-natural | 351 | 351 | 74 |
| A1.1.2 - Broadleaved woodland - plantation | 321 | 321 | 4 |
| A1.3.2 - Mixed woodland - plantation | 536 | 536 | 0 |
| A2.2 - Scrub - scattered | 83 | 83 | 0 |
| A3.1 - Broadleaved Parkland/scattered trees | 1281 | 1281 | 208 |
| A3.3 - Mixed Parkland/scattered trees | 291 | 291 | 11 |
| B4 - Improved grassland | 0 | 0 | 424 |
| C3.1 - Other tall herb and fern - ruderal | 0 | 0 | 307 |
| G2 - Running water | 2492 | 3611 | 8835 |
| G2.1 - Running water - eutrophic | 445 | 1070 | 1689 |
| G2.2 - Running water - mesotrophic | 0 | 23 | 944 |
| I1.1.1 - Inland cliff - acid/neutral | 32 | 32 | 642 |
| J2.1.1 - Intact hedge - native species-rich | 1141 | 1151 | 2426 |
| J2.1.2 - Intact hedge - species-poor | 122 | 122 | 57 |
| J2.3.1 - Hedge with trees - native species-rich | 747 | 791 | 547 |
| J2.4 - Fence | 4754 | 5674 | 8622 |
| J2.5 - Wall | 5881 | 6736 | 6706 |
| J2.6 - Dry ditch | 395 | 411 | 374 |

Temple Sowerby to Appleby

Overview

- 6.3.5.43 This scheme predominantly passes through mixed arable habitats, bound by species-rich hedgerows with trees (HoPI) some of which supported mature trees of importance in their own right.
- 6.3.5.44 Pond habitats of varying type and vegetation composition are present (all assumed to qualify as HoPI). Other habitats included young to established areas of broad-leaved and mixed plantation woodlands with diverse canopy species and a species-rich area of semi-improved acid grassland (HoPI).
- 6.3.5.45 To the east, the scheme crossed Trout Beck, part of the River Eden and Tributaries SAC and SSSI (see Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4) for full river habitat details).
- 6.3.5.46 The scheme here is in close proximity to the River Eden SAC and River Eden SAC and Tributaries SSSI (Annex 1 habitats and HoPI) and goes over an area of woodland and scrub (Chapel Wood CWS and HoPI), with open mosaic habitats (HoPI) and acid grassland (HoPI) that forms the northern bank of the river. West of this, the scheme passes over the Settle to Carlisle railway (active) with scrub and open mosaic habitats (HoPI) and adjacent hedgerows, semi-improved grassland and improved and arable habitats.

Habitats of Principal Importance

- 6.3.5.47 Table 21: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary, the Order Limits, and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 21: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|---------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 1.45 | 18.81 | 2.19 | 20.26 |
| Traditional orchard | N/A | 0.59 | N/A | 0.70 |

Protected or otherwise notable species

- 6.3.5.48 Table 22: Protected and notable plant species identified within the desk study. This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

6.3.5.49 The invasive non-native riparian plant Indian balsam was recorded along Trout Beck.

Table 22: Protected and notable plant species identified within the desk study.

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Good-King-Henry | NY6326 | 0 | | | | | | Yes | Yes |
| Guelder-rose | NY62N | 0 | | | | LC | Yes | | |
| Wood-sorrel | NY62N | 0 | | | | LC | Yes | | |
| False-brome | NY62N | 0 | | | | LC | Yes | | |
| Bearded Couch | NY62N | 0 | | | | LC | Yes | | |
| Giant Fescue | NY62N | 0 | | | | | Yes | | |
| Field Maple | NY6425 | 0 | | | | LC | Yes | | |
| Japanese Knotweed | NY6325 | 0 | | Yes | | | | | |
| Indian balsam | NY6424 | 0 | | Yes | | | | | |
| Moschatel | NY6621 | 0 | | | | LC | Yes | | |
| Toothwort | NY6621 | 0 | | | | LC | Yes | | |
| Wood Anemone | NY6621 | 0 | | | | LC | Yes | | |
| Goldilocks Buttercup | NY6621 | 0 | | | | LC | Yes | | |
| Yellow Archangel | NY6621 | 0 | | Yes | | | | | |
| Alternate-leaved Golden-saxifrage | NY6621 | 0 | | | | LC | Yes | | |
| Whorled Water-milfoil | NY645264 | 0 | | | | VU | | Yes | |
| Wild Celery | NY669218 | 0 | | | | | | | Yes |
| Lesser Tussock-sedge | NY6026 | 0 | | | | NT | | | Yes |
| Field Mouse-ear | NY643266 | 211 | | | | LC | | | Yes |

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Lords-and-Ladies | NY6327 | 216 | | | | LC | Yes | | |
| Ramsons | NY6733221309 | 274 | | | | LC | Yes | | |
| Yellow Star-of-Bethlehem | NY643236 | 368 | | | | LC | Yes | | |
| Soft Shield-fern | NY66982134 | 383 | | | | LC | Yes | | |
| Greater Chickweed | NY6748320991 | 384 | | | | LC | | | Yes |
| Woodruff | NY6748320991 | 384 | | | | LC | Yes | | |
| Wood Speedwell | NY6748320991 | 384 | | | | LC | Yes | | |
| Dog's Mercury | NY6748320991 | 384 | | | | LC | Yes | | |
| Hairy Wood-rush | NY6748320991 | 384 | | | | LC | Yes | | |
| Round-fruited Rush | NY6323 | 653 | | | | VU | | Yes | Yes |
| Sanicle | NY677202 | 887 | | | | LC | Yes | | |
| Remote Sedge | NY677202 | 887 | | | | LC | Yes | | |
| Wood-sedge | NY677202 | 887 | | | | LC | Yes | | |
| Hairy-brome | NY677202 | 887 | | | | LC | Yes | | |
| Wood Melick | NY677202 | 887 | | | | LC | Yes | | |
| Wood Meadow-grass | NY677202 | 887 | | | | LC | Yes | | |
| Giant Hogweed | NY677202 | 887 | | Yes | | | | | |
| Bird's-nest Orchid | NY677202 | 887 | | | | NT | Yes | | Yes |
| Greater Spearwort | NY618282 | 1094 | | | | LC | | | Yes |
| Opposite-leaved Pondweed | NY61Z | 1109 | | | | VU | | Yes | Yes |

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Hard Shield-fern | NY6719 | 1121 | | | | LC | Yes | | |
| Wood Stitchwort | NY60842816 | 1127 | | | | LC | Yes | | |
| Spindle | NY6155928305 | 1306 | | | | LC | Yes | | |
| Black Horehound | NY6155928305 | 1306 | | | | LC | | | Yes |
| Small Cow-wheat | NY6155928305 | 1306 | | | | EN | | Yes | |
| Wild Service-tree | NY6155928305 | 1306 | | | | LC | | | Yes |
| Wood Forget-me-not | NY6155928305 | 1306 | | | | LC | Yes | | |
| Common Comfrey | NY6155928305 | 1306 | | | | LC | | | Yes |
| Creeping Lady's-tresses | NY592268 | 1334 | | | | LC | Yes | | Yes |
| Sweet-briar | NY698201 | 1868 | | | | LC | | | Yes |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.50 Table describes the Phase 1 habitat areas present within the indicative site clearance boundary and the Order Limits at baseline and Table 24: Phase 1 habitat Types within 250m of the Temple Sowerby to Appleby scheme describes those within 250m of these boundaries for the Temple Sowerby to Appleby scheme.
- 6.3.5.51 Table 25:Phase 1 point habitat descriptions for within the Temple Sowerby to Appleby scheme Order Limits describes the baseline Phase 1 point habitats within the Order Limits and Table 26: Phase 1 point habitat descriptions for within 250m of the Temple Sowerby to Appleby scheme Order Limits describes those within 250m of the Order Limits of the Temple Sowerby to Appleby scheme.
- 6.3.5.52 Table 27: Summary of linear phase 1 habitats recorded within the Temple Sowerby to Appleby scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Temple Sowerby to Appleby scheme.

Table 23: Phase 1 habitat types within the Temple Sowerby to Appleby scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 71.44ha | 60.70ha | Dominated by arable fields used for a combination of silage, cereal and other crops. Field margins are absent in some fields and up to approximately 2m in others. Where margins are present they comprise grassland and ruderal species, typical of arable field margins. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 107.35ha | 110.72ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 17.65ha | 14.24ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.16ha | 0.17ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.3ha | 0.30ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial ryegrass. High levels of disturbance associated with amenity uses, such as sports pitches, caravan parks or garden lawns. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 0.75ha | 0.99ha | Mix of unvegetated, unsealed surfaces. | Negligible - devoid of flora. |
| J4 - Bare ground | 0.1ha | 0.10 ha | Gravel driveway, devoid of notable flora. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 3.85ha | 3.5ha | Areas of grassland with moderate species diversity. Species recorded include false oat grass, red fescue, sheep's fescue, Yorkshire-fog, cock's-foot, common bent and crested dog's-tail. Recorded forbs include spear thistle, creeping buttercup, selfheal and crosswort. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.01ha | 0.01ha | Area of ephemeral vegetation around a manure heap on the edge of an arable field. Spear thistle, common nettle, cleavers (<i>Galium aparine</i>) and prickly sow-thistle (<i>Sonchus asper</i>) were recorded. Plants typical of soils enriched with nutrients within arable settings. | Negligible - low diversity comprising common and widespread species. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| A1.1.2 - Broadleaved woodland - plantation | 0.53ha | 0.53ha | Mostly present within small fragments throughout the Scheme. The woodlands are dominated by native, neophyte or near-native species which provide a range of opportunities for wildlife. Tree species include oak, silver birch, ash, rowan, sycamore, Scots pine and hazel. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 1.87ha | 0.37ha | Conifer plantation with limited understory. A small area of Scots pine plantation is also present. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 1.63ha | 1.61ha | Small woodland blocks, mostly associated with screening for the existing A66. These blocks are mostly less than 0.1ha. Dominated by native species with some instances of non-natives such as leylandii. Native species include oak, silver birch, ash, blackthorn and Scots pine. Underdeveloped understory. No significant mature trees or groupings of such. | Local - lack of naturalness, understory development and age structure limit the ecological interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 0.3ha | 2.30ha | Mature woodland blocks comprising a mix of native species broadleaved species including oak, ash, elder, willow, silver birch and hazel. Standing deadwood present. Indian balsam recorded. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as Cumbria BAP habitats (upland oak |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|--|--|
| | | | | woodland, upland mixed ash woodland, wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.25ha | 0.25ha | Blocks of dense scrub. Species present include abundant blackthorn and hawthorn, gorse, bramble and elder also recorded. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 0.24ha | 0.15ha | Areas of approximately 0.08ha and below are scattered throughout the scheme. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| A1.3.1 - Mixed woodland - semi-natural | 0.55ha | 0.55ha | Small areas (approximately 0.28ha and smaller) of habitat. Species present include oak, ash, elder, sycamore, silver birch and Scots pine. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| B5 - Marsh/marshy grassland | 4.09ha | 0.37ha | Areas of wet and marshy grassland. Species recorded include soft rush, Yorkshire fog, common nettle, creeping thistle, creeping butter cup, creeping buttercup and broad-leaved dock. Species composition within these areas are typical of wet grasslands and marshes with high levels of nutrient. Species diversity comprises a combination of wetland and non-wetland specialists. Those recorded are common and widespread. | Local - the areas of habitat within the Scheme fall below any wetland HoPI and Local BAP Habitat criteria. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|--|
| A3.1 - Broadleaved Parkland/scattered trees | 0.17ha | 0.01ha | Grassland areas with scattered, native, mature deciduous trees. Species include ash, hazel, silver birch and pedunculate oak (<i>Quercus robur</i>). | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| A2.2 - Scrub - scattered | 0.12ha | 0.12ha | Small blocks (approximately 0.1ha or smaller) of scattered scrub over grassland. Species present include hawthorn, alder (<i>Alnus glutinosa</i>), ash, sycamore, common nettle and rosebay willowherb. Areas of Indian balsam are present. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| C3.2 - Other tall herb and fern - non ruderal | Less than 0.001ha | Less than 0.001ha | Unmanaged area of common nettle, Reed canary grass and cock's-foot. | Negligible - low species diversity and small area limit the importance of this habitat. |
| I2.2 - Spoil | 0.01ha | Less than 0.001ha | Bare unvegetated spoil. Negligible floral component. | Negligible |
| J1.4 - Introduced shrub | 0.04ha | 0.001ha | Areas of non-native shrub species. | Negligible - non-native, invasive species with negligible ecological interest. |

Table 24: Phase 1 habitat Types within 250m of the Temple Sowerby to Appleby scheme

| Phase 1 Habitat | Area (ha) within Order Limits boundary | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|--|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 161.29ha | 162.42ha | As within indicative site clearance boundary. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field |

| Phase 1 Habitat | Area (ha) within Order Limits boundary | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|--|---|---|---|
| | | | | margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 564.29ha | 511.79ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 31.86ha | 34.74ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 6.23ha | 4.94ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 2.16ha | 1.98ha | As within indicative site clearance boundary. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 2.31ha | 2.07ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| J4 - Bare ground | 0.45ha | 0.38ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 20.89ha | 20.09ha | As within indicative site clearance boundary. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |

| Phase 1 Habitat | Area (ha) within Order Limits boundary | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|--|---|--|---|
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.12ha | 0.12ha | Species composition as within indicative site clearance boundary. | Negligible - low diversity comprising common and widespread species. |
| A1.1.2 - Broadleaved woodland - plantation | 4.38ha | 4.36ha | As within indicative site clearance boundary. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 0.77ha | 2.4ha | As within indicative site clearance boundary. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 6.3ha | 6.32ha | As within indicative site clearance boundary but over larger sized woodland blocks, including an approximately 3ha area of newly planted woodland. | Local - lack of naturalness, understory development and age structure limit the ecological interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 9.52ha | 21.53ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, some of these same areas qualify as Cumbria BAP habitats (upland oak woodland, upland mixed ash woodland, wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.21ha | 0.21ha | As within indicative site clearance boundary. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |

| Phase 1 Habitat | Area (ha) within Order Limits boundary | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|--|---|--|--|
| C3.1 - Other tall herb and fern - ruderal | 0.49ha | 0.58ha | As within indicative site clearance boundary. Indian balsam also recorded. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C1.1 - Bracken - continuous | 0.24ha | 0.24ha | Dense bracken cover with scattered Indian balsam also present. | Local - In small areas such as this, bracken provides some ecological interest. However, the low species diversity of this habitat type limits its interest and if left unmanaged, can become an injurious habitat type, colonising and overtaking other more diverse and important habitats such as diverse grasslands. |
| A1.3.1 - Mixed woodland - semi-natural | 4.24ha | 4.66ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| B5 - Marsh/marshy grassland | 3.81ha | 5.93ha | As within indicative site clearance boundary. | Local - the areas of habitat within the Scheme fall below any wetland HoPI and Local BAP Habitat criteria. |
| A3.1 - Broadleaved Parkland/scattered trees | 1.44ha | 1.39ha | As within indicative site clearance boundary. | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| A2.2 - Scrub - scattered | 0.82ha | 0.82ha | As within indicative site clearance boundary, with the addition of larger blocks, up to approximately 0.8ha. | Local - common and widespread habitat type. However, as a successional habitat type there is |

| Phase 1 Habitat | Area (ha) within Order Limits boundary | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|--|---|---|---|
| | | | | some ecological importance. Interest is greatest within larger blocks of habitat. |
| G1.1 - Standing water - eutrophic | 0.01ha | 0.01ha | Two ponds. | National - matches the HoPI criteria for ponds. |
| G1 - Standing water | 0.16ha | 0.16ha | Ponds | National - assumed to match the HoPI criteria for ponds. |
| C3.2 - Other tall herb and fern - non ruderal | 0.03ha | 0.03ha | As within indicative site clearance boundary. | Negligible - low species diversity and small area limit the importance of this habitat. |
| B1.2 - Acid grassland - semi-improved | 0.1ha | 0.10ha | Area of ungrazed grassland. Species present include meadow buttercup (<i>Ranunculus acris</i>), pignut (<i>Conopodium majus</i>), Yorkshire fog, meadow foxtail (<i>Alopecurus pratensis</i>), field wood-rush (<i>Luzula campestris</i>), sheep's sorrel (<i>Rumex acetosella</i>) and tormentil (<i>Potentilla erecta</i>). | National - meets HoPI criteria for Lowland Dry Acid Grassland. |
| I2.2 - Spoil | 0.01ha | 0.02ha | As within indicative site clearance boundary. | Negligible |
| J1.4 - Introduced shrub | 13.06ha | 0.07ha | As within indicative site clearance boundary. | Negligible |

Table 25:Phase 1 point habitat descriptions for within the Temple Sowerby to Appleby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Immature fraxinus excelsior, no features for bats. | NY6451424498 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. No potential bat roost feature. | NY6450125399 |
| A3.1 - Broadleaved Parkland/scattered trees | Scopes in for bats. Veteran sessile oak. Dbh at least 4m. | NY6446725458 |
| A3.1 - Broadleaved Parkland/scattered trees | Potential veteran ash tree. Must be at least 3m dbh. Covered in mature horseshoe fungus. Seat post set up potentially for shooting in adjacent field. | NY6442325096 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak, quercus robur. No features. | NY6222626609 |
| A3.1 - Broadleaved Parkland/scattered trees | Two adjacent juvenile quercus robur. No bat roost features. | NY6214526635 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore, no bat roost features visible. | NY6196426640 |
| A3.1 - Broadleaved Parkland/scattered trees | Two mature sessile oak. Scope in for bats. | NY6288326178 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated sycamore in improved grass field. | NY6339926425 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. Approximately 18m high, no features which look suitable for roosting bats. | NY6316725854 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash, no bat roost suitability. | NY6457725344 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash, 15m height, 1.2m diameter at breast height. Surveyed from northern field, no visible features apparent from this side. When adjacent land parcel is surveyed this should also be assessed. | NY6316925855 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, no features visible from ground, but the tree has several dead branches, tree survey may be required as there may be potential for features that are not visible from ground. | NY6295726195 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, 20m height, 1.3m diameter at breast height. No visible bat roost features from ground level. | NY6325826102 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash, 10m height, 35cm diameter at breast height. No features. | NY6441926165 |
| A3.1 - Broadleaved Parkland/scattered trees | Juvenile ash, 5m height. No features. | NY6442726181 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash, no features for bat roosts. | NY6659222897 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash, no features for bat roosts. | NY6662722928 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash, no features for roosting bats visible. | NY6636022998 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature pedunculate oak with dead wood, single stemmed. Approximately 3m girth. | NY6446625458 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash, with features for bats/ birds. Some veteran features and standing deadwood. | NY6451125403 |
| A3.1 - Broadleaved Parkland/scattered trees | Single stemmed ash, split at height. Some dead wood. But vibrant growth and wide crown. Approximately 2.25m girth. | NY6457325342 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature pedunculate oak tree. | NY6765921476 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature pedunculate oak tree at edge of field, adjacent but not growing from within hedgerow. | NY6778821373 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature crab apple. | NY6621123029 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature crab apple. | NY6623123043 |
| A3.1 - Broadleaved Parkland/scattered trees | Oak tree. | NY6610223092 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature silver birch tree. | NY6592624015 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature rowan tree. | NY6592724017 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature norway maple. | NY6586224042 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature beech. | NY6589424030 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated pedunculate oak in improved grass field. | NY6341726640 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry (prunus sp.) Tree. | NY6428525915 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree on edge of road. | NY6427725919 |
| A2.2 - Scrub - scattered | Recently plants young blackthorn, elder, hawthorn and beech. Tree guards still present and shrubs less than 3m in height. Over 30 plants in total. | NY6426325891 |
| A2.2 - Scrub - scattered | Single semi-mature hawthorn shrub, approximately 3m in height. | NY6428225927 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore with bat box. | NY6162626622 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree. | NY6350826592 |
| A2.2 - Scrub - scattered | Scattered hawthorn shrub. | NY6351226592 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree. | NY6351926592 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree with elder. | NY6352326592 |
| A2.2 - Scrub - scattered | Scattered hawthorn shrubs. | NY6403824981 |
| A2.2 - Scrub - scattered | Scattered hawthorn shrubs. | NY6404524979 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran oak at side of road - 161 cm diameter at breast height - possible ancient oak. | NY6446825452 |
| A3.1 - Broadleaved Parkland/scattered trees | Single semi-mature ash tree on northern boundary of field/land parcel, on the edge on the a66 road verge. South of the a66. | NY6488724127 |
| A3.2 - Coniferous Parkland/scattered trees | Single leylandii tree. | NY6544523907 |
| A3.1 - Broadleaved Parkland/scattered trees | Two crab apple trees and two hawthorns next to road. | NY6532823842 |

Table 26: Phase 1 point habitat descriptions for within 250m of the Temple Sowerby to Appleby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Coppiced immature fraxinus excelsior, no features for bats. | NY6479524246 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature elder just outside boundary. 5m tall, coppiced. No potential bat roost feature for bats noted. | NY6283425819 |
| A3.1 - Broadleaved Parkland/scattered trees | Hollow alder in centre of field, bat roost potential and barn owl potential. | NY6426725231 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature coppiced ash. Approximately 12m tall. No potential bat roost feature for bats noted. | NY6283825814 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree 14m semi-mature no potential bat roost feature. | NY6276325866 |
| A3.1 - Broadleaved Parkland/scattered trees | Alder in field. Potential bat roost feature noted in scoping point. Bat survey recommended. | NY6426425234 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak, quercus robur. No features. | NY6236026550 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak, quercus robur. No features. | NY6236526546 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi malus sp. | NY6237126542 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature fraxinus excelsior. Needs further assessment, rot hole facing south at 4m height approximately. 30cm diameter, and second rot hole on other branch | NY6292926528 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| | facing south approximately 5m height. 30cm by 5cm. Moderate bat roost potential. | |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak, quercus robur. No features. | NY6222426615 |
| A3.1 - Broadleaved Parkland/scattered trees | juvenile cherry tree. No bat roost features. | NY6204826659 |
| A3.1 - Broadleaved Parkland/scattered trees | Quercus with bat roost suitability. | NY6293926539 |
| A3.1 - Broadleaved Parkland/scattered trees | Oak trees will need bat roost suitability. | NY6406726623 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn scrub. | NY6489426007 |
| A2.2 - Scrub - scattered | Hawthorn and elder scrub. | NY6332925861 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, approximately height 25m diameter at breast height 1.3m. Several dead branches with lifted bark and some rot holes. Requires further assessment (climbing) if affected. | NY6297625813 |
| A2.2 - Scrub - scattered | Hawthorn. | NY6328425871 |
| A2.2 - Scrub - scattered | Hawthorn and elder scrub. | NY6328825870 |
| A2.2 - Scrub - scattered | Hawthorn and elder scrub. | NY6332025862 |
| A2.2 - Scrub - scattered | Hawthorn and elder scrub. | NY6331325863 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature oak, no bat roosting features visible. | NY6624522785 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, several dead branches and rot holes, moderate bat roost potential. Further assessment required. | NY6609722657 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature fraxinus excelsior. Some dead branches and lifted bark. Moderate bat roost potential. | NY6485226001 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature fraxinus excelsior. No bat roost features. | NY6487026019 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature fraxinus excelsior. No bat roost features. | NY6490326073 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature fraxinus excelsior. No bat roost features. | NY6488726041 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, no bat roost features. | NY6482726175 |
| A3.1 - Broadleaved Parkland/scattered trees | 2 ash trees. | NY6707422474 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature dead oak ash tree. | NY6731222252 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree - no further survey. | NY6583723527 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature coppiced ash. | NY6719921826 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. | NY6717921837 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash, rot hole on main trunk approximately 3m height. Requires further assessment. | NY6647223097 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash, several woodpecker holes on main trunk approximately 12m height. Requires further assessment. | NY6648123096 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash, no bat roost features visible. | NY6652623109 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash, no features for roosting bats visible. | NY6634623014 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY6656821949 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, mature ash and young apple tree. Low/negligible bat roost suitability. | NY6656022049 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak tree. Moderate bat roost suitability. Due to knot holes, split branches and rot holes. Dbh is 1.5m. | NY6654522023 |
| A3.1 - Broadleaved Parkland/scattered trees | Oak tree with several potential bat roost features, lifted bark split branches. Moderate suitably. | NY6659121916 |
| A2.2 - Scrub - scattered | Elder. | NY6677721919 |
| A2.2 - Scrub - scattered | Hawthorn. | NY6673221957 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, low bat roost suitability. As quite damp in any potential feature. 1m dbh. | NY6683321855 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead tree, low bat roost suitability. Due to lifted and split bark. | NY6668121902 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, lots of knot/rot holes, moderate bat roost suitability. | NY6653921882 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash with bat roost suitability. | NY6659922070 |
| A2.2 - Scrub - scattered | Scattered elder scrub. | NY6677821916 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sessile oak. Bat roost suitability. Also large nest present approximately 12m high. Potential for raptor/owl. | NY6663122096 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash. Bat roost suitability. | NY6661022077 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sessile oak. Mod bat roost suitability. | NY6658522060 |
| A2.2 - Scrub - scattered | Scattered hawthorn scrub. | NY6673021951 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. | NY6659322065 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak, no roost features. | NY6741721272 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. Potentially roost feature on a split branch 5m up but cannot sufficiently view. | NY6741421288 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. Low bat roost suitability. As some suitable knot holes but all are on north facing side. | NY6718921577 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature alder, no bat roost suitability. | NY6676321611 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY6675221618 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore in grazed field. | NY6711421594 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. | NY6716721579 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree of significance- girth approximately 2.75m circumference. Dead wood present. | NY6451124626 |
| A3.1 - Broadleaved Parkland/scattered trees | Fruit tree. Significant girth. 1.5m. | NY6521524575 |
| A3.1 - Broadleaved Parkland/scattered trees | Single stemmed semi-mature ash 1m girth. | NY6527024600 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6781721934 |
| A2.2 - Scrub - scattered | Isolated hawthorn shrub at boundary. | NY6707822489 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree along fence boundary. | NY6707222483 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree along fence boundary. | NY6706822478 |
| A2.2 - Scrub - scattered | Scattered semi-mature hawthorn scrub along boundary - remnant of historic hedgerow. | NY6704422452 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash fused to apple sp. Along fence boundary. | NY6689422587 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree. | NY6740622347 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A2.2 - Scrub - scattered | Small group of semi-mature hawthorn. | NY6741222356 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated mature ash along fence. | NY6740822351 |
| A3.1 - Broadleaved Parkland/scattered trees | Honey fungus at base of willow. | NY6718722314 |
| A3.1 - Broadleaved Parkland/scattered trees | One young pedunculate oak. | NY6524224068 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree on boundary with cracked limb and cavity in trunk. | NY6525324070 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn on fence boundary. | NY6585623556 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree along pole and wire fence. | NY6551922777 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6549922762 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6550022762 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore. | NY6542022921 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6539023012 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6542623050 |
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple. | NY6543423054 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6543623056 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6544923062 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6545623067 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6545923068 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6547423077 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6548423082 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6549623090 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6549823091 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6550223093 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6550823096 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6551123098 |

| Phase 1 habitat type | Description | Grid reference |
|---|-----------------------------|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6553323111 |
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple. | NY6554223117 |
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple. | NY6555423124 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6555723126 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6556023128 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6556723131 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated ash. | NY6558623130 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6599622876 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6599422874 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree. | NY6609122944 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree. | NY6611122959 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6611722962 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6612222966 |
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple tree. | NY6612522968 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6613222973 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6613622977 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NY6614122979 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6597222995 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6609423085 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash tree. | NY6574723238 |
| A2.2 - Scrub - scattered | Isolated patch of hawthorn. | NY6552323257 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature ash tree. | NY6561822705 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature hawthorn. | NY6630322439 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak. | NY6632922458 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6623422426 |
| A2.2 - Scrub - scattered | Small section of elder hedgerow, less than 5 m in length. | NY6821221448 |
| A3.1 - Broadleaved Parkland/scattered trees | One semi-mature ash tree along hedgerow. | NY6397925310 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6798121229 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6655721760 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6655921762 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6655121758 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6654821757 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6654421755 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6655021753 |
| A3.2 - Coniferous Parkland/scattered trees | Scattered picea sp. (likely norway). | NY6656021756 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree. | NY6162626835 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree with knot. | NY6171126602 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6192026557 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree. | NY6195326636 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NY6195126642 |
| A3.1 - Broadleaved Parkland/scattered trees | 1 malus sp. Tree and 2 unidentifiable dead trees adjacent. | NY6428825709 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak tree looks 400 years old. | NY6205927064 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead ash tree completely rotten heartwood. | NY6205927059 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6340526746 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6341226753 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6342326766 |
| A2.2 - Scrub - scattered | Isolated blackthorn scrub. | NY6344326789 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6344926797 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6345826806 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6346326813 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6348126833 |
| A2.2 - Scrub - scattered | Isolated hawthorn scrub. | NY6348726839 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY6162726612 |
| A2.2 - Scrub - scattered | Short length of remnant hedgerow - elder dominant- isolated on both ends. | NY6337826793 |
| A2.2 - Scrub - scattered | Short length of remnant hedgerow - elder dominant- isolated on both ends. | NY6337626798 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree. | NY6354726589 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn tree. | NY6356026588 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered crab apple tree. | NY6361226582 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak with knot hole along hedgerow. | NY6149926327 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature oak tree with dead branches along hedgerow. | NY6145626193 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash. | NY6228527178 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash with dead branches. | NY6228227195 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran pedunculate oak - diameter at breast height appears >1.5m or close to it - with dead wood features. | NY6604222131 |
| A3.1 - Broadleaved Parkland/scattered trees | Newly planted red oak. | NY6621222005 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature twin stemmed sycamore in improved grass field. | NY6630322007 |
| A3.1 - Broadleaved Parkland/scattered trees | Newly planted red oak. | NY6632621951 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn in residential garden. | NY6626221997 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature pedunculate english oak. | NY6314025560 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY6488623348 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash. | NY6483723319 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature isolated oak. | NY6486123436 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A2.2 - Scrub - scattered | Patch of broom. | NY6477423764 |
| A2.2 - Scrub - scattered | Patch of broom. | NY6476323786 |
| A3.1 - Broadleaved Parkland/scattered trees | Cherry. | NY6465523809 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash and hawthorn. | NY6465723806 |
| A3.1 - Broadleaved Parkland/scattered trees | Conifer. | NY6463423792 |
| A3.1 - Broadleaved Parkland/scattered trees | Conifer. | NY6463223781 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash semi-mature. | NY6465123810 |
| A3.1 - Broadleaved Parkland/scattered trees | Young beech. | NY6461723762 |
| A3.1 - Broadleaved Parkland/scattered trees | Several young beech. | NY6462223764 |
| A3.1 - Broadleaved Parkland/scattered trees | Ash. | NY6463123758 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash. | NY6457823796 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore with 3 knot holes one on trunk 2 on branches. | NY6628621768 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY6657421625 |
| A3.1 - Broadleaved Parkland/scattered trees | Two hawthorn spalding surrounded by fencing. | NY6657421647 |
| A3.1 - Broadleaved Parkland/scattered trees | Saplings with guards on and fenced off. | NY6661121678 |
| A3.2 - Coniferous Parkland/scattered trees | Mature scots pine. | NY6665521730 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran pedunculate oak. Some bark stripping by livestock. | NY6653121665 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY6652521694 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY6652621718 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore with tree house. | NY6646921715 |
| A3.1 - Broadleaved Parkland/scattered trees | Planted sycamore saplings with fence. | NY6646221696 |
| A3.1 - Broadleaved Parkland/scattered trees | Elder, cherry sp. And lime sp. Saplings surrounded by wooden fence. | NY6650321648 |
| A3.1 - Broadleaved Parkland/scattered trees | 2 mature sycamore, horse chestnut and lime. | NY6645721656 |
| A3.1 - Broadleaved Parkland/scattered trees | Sapling trees. | NY6641021659 |

Table 27: Summary of linear phase 1 habitats recorded within the Temple Sowerby to Appleby scheme Order Limits and 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A1.1.1 - Broadleaved woodland - semi-natural | 5 | 20 | 539 |
| A1.1.2 - Broadleaved woodland - plantation | 99 | 99 | 179 |
| A2.2 - Scrub - scattered | 0 | 0 | 317 |
| A3.1 - Broadleaved Parkland/scattered trees | 555 | 1714 | 6593 |
| C3.1 - Other tall herb and fern - ruderal | 0 | 0 | 47 |
| G2 - Running water | 3172 | 3690 | 18081 |
| G2.1 - Running water - eutrophic | 303 | 704 | 1390 |
| G2.2 - Running water - mesotrophic | 163 | 163 | 2110 |
| J2.1.1 - Intact hedge - native species-rich | 14661 | 16541 | 23742 |
| J2.1.2 - Intact hedge - species-poor | 4845 | 5216 | 6538 |
| J2.3.1 - Hedge with trees - native species-rich | 1314 | 1509 | 2918 |
| J2.3.2 - Hedge with trees - species-poor | 978 | 1292 | 1750 |
| J2.4 - Fence | 14076 | 17879 | 36800 |
| J2.5 - Wall | 1496 | 1750 | 2673 |
| J2.6 - Dry ditch | 449 | 470 | 414 |
| J4 - Bare ground | 1179 | 1179 | 796 |

Appleby to Brough

Overview

- 6.3.5.53 This scheme passes to the south of the North Pennines AONB, with more upland influences on the habitat types present. Those habitats recorded within the indicative site clearance boundary and within 250m include both good and poor condition fen, mires, bryophyte heath, dry heath, wet dwarf shrub heath and acid grassland (all HoPIs and Annex 1 upland heathland habitat present).
- 6.3.5.54 Arable and improved grassland habitats are abundant with some large areas of marshland, coniferous woodland and mixed woodland also present.
- 6.3.5.55 A number of ponds are present within the indicative site clearance boundary and within 250m. Some have been confirmed as supporting great crested newts *Triturus cristatus* and therefore are confirmed as qualifying as HoPI, and the remaining ponds are assumed to qualify as HoPI following a precautionary approach. Further details of pond habitats are provided within ES Appendix 6.6: Amphibians (Application Document 3.4).
- 6.3.5.56 Outside of the indicative site clearance boundary are further HoPIs, including upland, deciduous woodland, purple moor-grass and rush pasture, rivers and streams and floodplain grazing marsh.
- 6.3.5.57 This scheme crosses two tributaries (Unnamed Tributary of Mire Sike 6.12 and Cringle Beck) that form part of the River Eden, and several tributaries (Moor Beck, Eastfield Sike, Unnamed Tributary of Lowgill Beck 6.1 and Lowgill Beck) (Figure 14.1: Surface Water Features).
- 6.3.5.58 All the tributaries crossed by the scheme ultimately flow into the River Eden and Tributaries SAC and SSSI. Crooks Beck (which Moor Beck and Lowgill Beck flow in to) and the lower reaches of Lowgill Beck are mapped as priority river habitat on Natural England's open source data layer. See ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4) for full assessment of river habitats.

Habitats of Principal Importance

6.3.5.59 Table 28: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary within the remaining areas of the Order Limits outside the indicative site clearance boundary and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table).

Table 28: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------------------------|---|---|-------------------------------|---------------------------------------|
| Coastal and floodplain grazing marsh | 1.60 | 12.38 | 2.24 | 15.02 |
| Deciduous woodland | 1.22 | 10.38 | 1.49 | 10.54 |
| Lowland fens | N/A | 6.35 | N/A | 6.35 |
| Purple moor grass and rush pastures | N/A | 2.70 | N/A | 2.70 |
| Traditional orchard | N/A | 0.05 | N/A | 0.05 |
| Upland heathland | N/A | N/A | N/A | 4.44 |

Protected or otherwise notable species

- 6.3.5.60 Table 29: Protected and notable plant species identified within the desk study. This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.61 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.62 Field surveys recorded the non-native invasive species giant hogweed along the River Eden.

Table 29: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Bluebell | NY7516 | 0 | | | Yes | LC | Yes | | |
| Guelder-rose | NY7516 | 0 | | | | LC | Yes | | |
| Wood Anemone | NY7516 | 0 | | | | LC | Yes | | |
| Rhododendron ponticum | NY7416 | 0 | | Yes | | | | | |
| Dog's Mercury | NY7815 | 0 | | | | LC | Yes | | |
| Wood-sorrel | NY7815 | 0 | | | | LC | Yes | | |
| Wood-sedge | NY7815 | 0 | | | | LC | Yes | | |
| Hairy Wood-rush | NY7815 | 0 | | | | LC | Yes | | |
| Alpine Cinquefoil | NY71X | 0 | | | | LC | | Yes | Yes |
| Smooth Tare | NY71X | 0 | | | | | | | Yes |
| Fly Orchid | NY71T | 175 | Yes | | | VU | | Yes | Yes |
| Northern Yellow-cress | NY763156 | 180 | | | | | | | Yes |
| Blunt-flowered Rush | NY727170 | 259 | | | | LC | | | Yes |
| Hard Shield-fern | NY7816 | 662 | | | | LC | Yes | | |
| Beech Fern | NY7816 | 662 | | | | LC | Yes | | |
| Lords-and-Ladies | NY7816 | 662 | | | | LC | Yes | | |
| Sanicle | NY7816 | 662 | | | | LC | Yes | | |
| Ramsons | NY7816 | 662 | | | | LC | Yes | | |

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Giant Bellflower | NY7816 | 662 | | | | LC | Yes | | |
| Bird's-eye Primrose | NY7816 | 662 | | | | NT | | Yes | Yes |
| Woodruff | NY7816 | 662 | | | | LC | Yes | | |
| Eyebright | NY7816 | 662 | | | | VU | | | |
| Wood Speedwell | NY7816 | 662 | | | | LC | Yes | | |
| False-brome | NY7816 | 662 | | | | LC | Yes | | |
| Wood Melick | NY7816 | 662 | | | | LC | Yes | | |
| Blue Moor-grass | NY7816 | 662 | | | | LC | | Yes | Yes |
| Mossy Saxifrage | NY7816 | 662 | | | | VU | | Yes | |
| Bird's-foot Sedge | NY71Y | 662 | | | | LC | | | Yes |
| Giant Fescue | NY786160 | 755 | | | | | Yes | | |
| Brown Bent | NY81C | 970 | | | | LC | | | Yes |
| Giant Hogweed | NY727159 | 1006 | | Yes | | | | | |
| Broad-leaved Helleborine | NY787163 | 1071 | | | | LC | Yes | | |
| Herb-paris | NY7849916393 | 1120 | | | | LC | Yes | | |
| Indian Balsam | NY7517214237 | 1222 | | Yes | | | | | |
| Marsh Stitchwort | NY704176 | 1229 | Yes | | | VU | | Yes | Yes |
| Greater Tussock-sedge | NY726194 | 1231 | | | | LC | Yes | | |
| Horseshoe Vetch | NY78321669 | 1398 | | | | LC | | | Yes |

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Wood Meadow-grass | NY7218315951 | 1405 | | | | LC | Yes | | |
| Spindle | NY7876616726 | 1499 | | | | LC | Yes | | |
| Black Horehound | NY701176 | 1528 | | | | LC | | | Yes |
| Greater Burnet-saxifrage | NY80561488 | 1549 | | | | LC | | | Yes |
| Holly-fern | NY7120 | 1646 | Yes | | | VU | | Yes | Yes |
| Opposite-leaved Pondweed | NY61Z | 1652 | | | | VU | | Yes | Yes |
| Hairy-brome | NY7131415779 | 1790 | | | | LC | Yes | | |
| Dark-red Helleborine | NY80081631 | 1809 | | | | LC | | Yes | Yes |
| Bird's-nest Orchid | NY806159 | 1905 | | | | NT | Yes | | Yes |
| Juniper | NY7618 | 1906 | Yes | | | LC | Yes | | |
| Teesdale Violet | NY71U | 1906 | | | | LC | | | Yes |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.63 Table 30: Phase 1 habitat types within the Appleby to Brough scheme describes the Phase 1 habitat areas present within the Appleby to Brough scheme and
- 6.3.5.64 Table 31: Phase 1 habitat types within 250m of the Appleby to Brough scheme describes those within 250m.
- 6.3.5.65 Table 32: Phase 1 point habitat descriptions for within the Appleby to Brough scheme Order Limits describes the baseline Phase 1 point habitats within the Order Limits and Table 33: Phase 1 point habitat descriptions for within 250m of the Appleby to Brough scheme Order Limits describes those within 250m of the Order Limits of the Appleby to Brough scheme.
- 6.3.5.66 Table 34: Summary of linear phase 1 habitats recorded within the Appleby to Brough scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Appleby to Brough scheme.

Table 30: Phase 1 habitat types within the Appleby to Brough scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 22.93ha | 22.48ha | Dominated by arable fields used for a combination of silage, cereal and other crops. Field margins are absent in some fields and up to approximately 2m in others. Where margins are present they comprise grassland and ruderal species, typical of arable field margins. | Low - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 134.5ha | 104.82ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 6.26ha | 5.86ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.36ha | 0.30ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|--|
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.79ha | 0.79ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial ryegrass. High levels of disturbance associated with amenity uses, such as sports pitches, caravan parks or garden lawns. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 0.42ha | 0.42ha | Combination of allotment and fruit orchard areas. Some areas of railway ballast and gravel tracks. Orchards account for approximately 0.23ha. | National to Negligible - orchard areas qualify as HoPI Traditional Orchards. Other vegetated areas within this habitat classification are of Local importance with those remaining of Negligible interest. |
| J4 - Bare ground | 0.97ha | 0.97ha | Gravel, areas of tarmac and dirt tracks, devoid of flora. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 9.28ha | 9.07ha | Areas of grassland with moderate species diversity. Species recorded include false oat grass, red fescue, sheep's fescue, Yorkshire-fog, cock's-foot, common bent and crested dog's-tail. Recorded forbs include spear thistle, creeping buttercup, selfheal and crosswort. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| A1.1.2 - Broadleaved woodland - plantation | 5.43ha | 1.67ha | Mostly present within small fragments throughout the scheme. The woodlands are dominated by | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| | | | native, neophyte or near-native species which provide a range of opportunities for wildlife. Tree species include oak, silver birch, ash, rowan, sycamore, holly, Scots pine and hazel. | woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 4.77ha | 4.71ha | Conifer and Scots pine plantations with limited understory. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 3.99ha | 3.63ha | Woodland blocks are mostly below 0.2ha, with one larger block, approximately 0.7ha. Dominated by native species with some instances of non-natives such as spruce. Native species include oak, silver birch, ash, blackthorn and Scots pine. Age of woodland blocks vary from recently planted to mature. | County to Local - lack of naturalness, understory development and age structure limit the ecological interest of the majority of these habitats to the Local level. Areas with more mature trees are of greater interest and up to County importance. |
| A1.1.1 - Broadleaved woodland - semi-natural | 2.41ha | 2.30ha | Mature woodland blocks comprising a mix of native broadleaved species including oak, ash, elder, willow, silver birch and hazel. Standing deadwood present. Areas of willow carr wet woodland also present. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, the area of wet woodland qualifies as a Cumbria BAP habitat (wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.25ha | 0.23ha | Dense bramble scrub. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|--|
| C3.1 - Other tall herb and fern - ruderal | 0.26ha | 0.26ha | Areas of rosebay willowherb, common nettle and bramble. | Negligible - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| C1.1 - Bracken - continuous | 0.05ha | 0.05ha | Bracken | Negligible - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. Its small size further reduces its ecological importance. |
| A1.3.1 - Mixed woodland - semi-natural | 0.73ha | 0.63ha | Species present include oak, ash, elder, sycamore, silver birch, willow and Scots pine. Mature trees present. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| B5 - Marsh/marshy grassland | 5.77ha | 5.44ha | Most areas dominated by rushes including hard rush (<i>Juncus inflexus</i>), soft rush and sharp-flowered rush (<i>Juncus acutiflorus</i>) Occasional areas which are dominated by purple moor-grass (<i>Molinia caerulea</i>). | National to Local - approximately 2.5ha of these areas support species compositions that qualify as HoPI Purple Moor Grass and Rush Pastures. The remaining areas of this habitat fall short of the HoPI criteria and are of Local importance. |
| A3.1 - Broadleaved Parkland/scattered trees | 0.09ha | 0.09ha | Grassland areas with scattered, native, mature deciduous trees. Species include rowan, sycamore, beech and poplar (<i>Populus</i> sp.) | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|--|
| A2.2 - Scrub - scattered | 0.06ha | 0.02ha | Field boundary with scattered elder, ash, birch, blackthorn amongst common nettle and bramble. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| G1 - Standing water | 0.01ha | 0.01ha | Water storage man made brick ditch with metal grid covering. | Negligible |
| C3.2 - Other tall herb and fern - non ruderal | 0.01ha | 0.01ha | Banks of watercourse dominated by meadowsweet (<i>Filipendula ulmaria</i>). | Local - native species within a semi-natural habitat. |
| D3 - Lichen/bryophyte heath | 0.37ha | 0.37ha | Sheep and rabbit grazed grassland, close cropped, frequent exposed mosses, grass in scattered short tussocks. Some heather (<i>Calluna vulgaris</i>) growth but young and scattered. Tormentil frequent throughout. | National - qualifies as HoPI Lowland Heathland under species composition and habitat quality. |
| B1.2 - Acid grassland - semi-improved | 0.15ha | 0.15ha | Area of ungrazed grassland. Dominant species present include common bent (<i>Agrostis capillaris</i>) and fescue (<i>Festuca</i> sp.). Other species present include Yorkshire fog, sheep's sorrel, heath speedwell (<i>Veronica officinalis</i>), heath wood-rush (<i>Luzula multiflora</i>) and heather. Meadow wax caps (<i>Cuphophyllus pratensis</i>) were also recorded. | National - meets HoPI criteria for Lowland Dry Acid Grassland. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| A3.3 - Mixed Parkland/scattered trees | 0.09ha | 0.04ha | Scattered trees over marshy grassland, including mature pines. Much standing deadwood present. Some common reed and sphagnum mosses also present | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| F2.2 - Marginal and inundation - inundation vegetation | >0.01ha | >0.01ha | Old drainage ditch. Dominated by typha with frequent hard rush, soft rush and occasional meadowsweet. | Local - while this habitat falls outside of HoPI or Cumbria BAP Habitat classifications, it provides a small area of wetland habitat of local importance. |

Table 31: Phase 1 habitat types within 250m of the Appleby to Brough scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| B4 - Improved grassland | 55.53ha | 246.80ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J1.1 - Cultivated/disturbed land - arable | 227.61ha | 53.44ha | As within indicative site clearance boundary. | Low - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B2.2 - Neutral grassland - semi-improved | 10.45ha | 25.78ha | As within indicative site clearance boundary. | Local - species present are indicative of some nutrient improvement, reducing species |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| | | | | diversity and resulting in a sward dominated by coarse grasses. |
| B5 - Marsh/marshy grassland | 14.57ha | 23.74ha | As within indicative site clearance boundary. | National - these areas support species compositions that qualify as HoPI Purple Moor Grass and Rush Pastures |
| J3.6 - Buildings | 2.78ha | 14.63ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| A1.1.2 - Broadleaved woodland - plantation | 2.13ha | 12.04ha | As within indicative site clearance boundary. Three larger woodland blocks present covering approximately 2.5ha, 1.9ha and 1.3ha. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.3.2 - Mixed woodland - plantation | 3.01ha | 11.48ha | As within indicative site clearance boundary. | County to Local - lack of naturalness, understory development and age structure limit the ecological interest of the majority of these habitats to the Local level. Areas with more mature trees are of greater interest and up to County importance. |
| A1.2.2 - Coniferous woodland - plantation | 26.75ha | 11.34ha | As within indicative site clearance boundary. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| B6 - Poor semi-improved grassland | 9.91ha | 10.31ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|--|
| A1.1.1 - Broadleaved woodland - semi-natural | 11.94ha | 7.99ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, the area of wet woodland qualifies as a Cumbria BAP habitat (wet woodland). |
| B1.2 - Acid grassland - semi-improved | 11.26ha | 4.37ha | As within indicative site clearance boundary. | National - meets HoPI criteria for Lowland Dry Acid Grassland. |
| A1.3.1 - Mixed woodland - semi-natural | 7.36ha | 4.35ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| J4 - Bare ground | 1.23ha | 2.99ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 1.29ha | 2.56ha | As within indicative site clearance boundary. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 1.82ha | 1.88ha | As within indicative site clearance boundary. Orchard habitat accounts for approximately 0.002ha). | National to Negligible - orchard areas qualify as HoPI Traditional Orchards. Other vegetated areas within this habitat classification are of Local importance with those remaining of Negligible interest. |
| D3 - Lichen/bryophyte heath | 3.79ha | 1.62ha | As within indicative site clearance boundary. | National - qualifies as HoPI Lowland Heathland under species composition and habitat quality. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|--|--|
| C1.1 - Bracken - continuous | 1.12ha | 1.46ha | As within indicative site clearance boundary, covering larger areas. | Local - In small areas such as this, bracken provides some ecological interest. However, the low species diversity of this habitat type limits its interest and if left unmanaged, can become an injurious habitat type, colonising and overtaking other more diverse and important habitats such as diverse grasslands. |
| C3.1 - Other tall herb and fern - ruderal | 23.65ha | 1.26ha | As within indicative site clearance boundary. | Negligible - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| A2.1 - Scrub - dense/continuous | 1.55ha | 1.25ha | As within indicative site clearance boundary. Areas of gorse, elder and hawthorn scrub also present. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| G1.1 - Standing water - eutrophic | 0.91ha | 1.19ha | A series of ponds. | National - qualifies as HoPI Eutrophic Standing Waters or Ponds. |
| A3.1 - Broadleaved Parkland/scattered trees | 1.19ha | 1.16ha | As within indicative site clearance boundary. | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| F1 - Swamp | 0.6ha | 1.12ha | Areas dominated by common reed. | National - qualify as HoPI Reedbeds. |
| D2 - Wet dwarf shrub heath | 1.62ha | 1.08ha | Dominated by cross-leaved heath with heath woodrush and high | National - qualifies as HoPI Lowland Heathland. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| | | | density of bog asphodel also recorded. | |
| A2.2 - Scrub - scattered | 6.39ha | 0.80ha | Species composition are within indicative site clearance boundary. Addition of scattered areas of gorse. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| G1 - Standing water | 0.47ha | 0.60ha | A series of natural and man-made waterbodies. | National to local - natural ponds assumed to meet the HoPI criteria for Ponds. Man-made areas of standing water unlikely to qualify but remain of Local importance. |
| A3.3 - Mixed Parkland/scattered trees | 0.02ha | 0.52ha | As within indicative site clearance boundary. Mature trees also growing over dry areas of grassland. Species recorded include mature oak, Scots pine, sycamore and rowan. | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| F2.2 - Marginal and inundation - inundation vegetation | 0.41ha | 0.41ha | Single area of marginal vegetation around a lake. Species include bulrush, soft rush, sharp-flowered rush and meadowsweet. | County - habitat makes up a component of a wetland habitat of notable ecological interest. Given the size of this habitat it is of County Importance. |
| I2.2 - Spoil | 0ha | 0.02ha | Spoil heap. | Negligible - no floral component. |
| J1.4 - Introduced shrub | 0.26ha | 0.001ha | Areas of non-native shrub species. | Negligible - non-native, invasive species with negligible ecological interest. |

Table 32: Phase 1 point habitat descriptions for within the Appleby to Brough scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | One mature ash in middle of field. | NY7789415150 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn and elder. | NY7540315635 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn and elder. | NY7540815632 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn and elder, intensively managed. | NY7542815605 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn, intensively managed. | NY7549715542 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore possibly former standard in grubbed out hedgerow. | NY7773414971 |
| A2.2 - Scrub - scattered | Mature hazel. | NY7772714969 |
| A2.2 - Scrub - scattered | Mature hawthorn. | NY7770714970 |
| A2.2 - Scrub - scattered | Mature blackthorn. | NY7769514962 |
| A2.2 - Scrub - scattered | Mature hawthorn maybe remnant of former hedgerow. | NY7769014957 |
| A2.2 - Scrub - scattered | Mature hawthorn maybe remnant from historic boundary hedge. | NY7768314973 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash large trunk cavity on western side. | NY7768214976 |
| A2.2 - Scrub - scattered | Group of three mature hazel trees. | NY7772414977 |
| A2.2 - Scrub - scattered | Mature hawthorn maybe a remnant of a historic boundary hedge. | NY7773214977 |
| A2.2 - Scrub - scattered | Group of two mature hazel trees maybe remnant of historic boundary hedge. | NY7773414984 |
| A2.2 - Scrub - scattered | Mature hawthorn maybe remnant of historic boundary hedge. | NY7773514974 |
| A3.1 - Broadleaved Parkland/scattered trees | Large veteran beech tree. Has a large cavity potentially suitable for bats. | NY7805615025 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature isolated ash. | NY7478316325 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash tree with signs of historical coppicing. | NY7358416973 |
| A3.1 - Broadleaved Parkland/scattered trees | Elder tree. | NY7359116970 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash tree. | NY7363116946 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore tree. | NY7365816935 |
| A2.2 - Scrub - scattered | Hawthorn tree. | NY7354816923 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. | NY7522515844 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash. | NY7521715825 |
| A2.2 - Scrub - scattered | Sycamore and ash. | NY7517415829 |
| A2.2 - Scrub - scattered | Sycamore. | NY7515415842 |
| A2.2 - Scrub - scattered | Elder ash and sycamore scrubs. | NY7515015846 |
| A2.2 - Scrub - scattered | Elder ash and sycamore scrubs. | NY7515215844 |
| A2.2 - Scrub - scattered | Elder ash and sycamore scrubs. | NY7514815847 |
| A3.1 - Broadleaved Parkland/scattered trees | Elder and sycamore sapling on south of a66. | NY7544115832 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore on field boundary on a66 roadside verge. | NY7543715830 |
| A2.2 - Scrub - scattered | Hawthorn scrub, recently pruned. | NY7535215686 |
| A2.2 - Scrub - scattered | Small, isolated sections of ash and elder scrub. | NY7532615708 |
| A2.2 - Scrub - scattered | Ash and elder scrub. | NY7531615717 |
| A2.2 - Scrub - scattered | Ash and elder scrub. | NY7531415719 |
| A2.2 - Scrub - scattered | Sycamore scrub. | NY7522615799 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated mature silver birch. | NY7522515813 |
| A3.1 - Broadleaved Parkland/scattered trees | Young ash tree next to gate, northwest boundary of land parcel. | NY7886914721 |
| A3.1 - Broadleaved Parkland/scattered trees | Young ash tree on northern boundary of land parcel next to gate. | NY7886814722 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash tree on northern boundary of land parcel behind fence. | NY7886214727 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature ash tree on the north-east border of the land parcel. Adjacent to wooden fence with wire. | NY7878514795 |
| A3.1 - Broadleaved Parkland/scattered trees | Single semi-mature ash tree on the north-east border of the land parcel. Adjacent to wooden fence with wire. | NY7877614802 |
| A3.1 - Broadleaved Parkland/scattered trees | Two young ash trees on southern boundary of land parcel with fence and wall along road to brough. | NY7899814846 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran crab apple part of defunct historic hedge. | NY7647115276 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Veteran crab apple, part of historic hedgerow. | NY7655015266 |
| A2.2 - Scrub - scattered | Hawthorn scrub. Remnants of an old hedgerow. | NY7205417967 |
| A2.2 - Scrub - scattered | Scattered gorse scrub. | NY7210117948 |
| A2.2 - Scrub - scattered | Scattered gorse scrub. | NY7209517934 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash on field boundary. | NY7235317834 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash on field boundary. | NY7236117847 |
| A2.2 - Scrub - scattered | Isolated hawthorn - semi-mature. | NY7777414979 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hazel. | NY7776714990 |
| A2.2 - Scrub - scattered | Mature hawthorn. | NY7767414971 |

Table 33: Phase 1 point habitat descriptions for within 250m of the Appleby to Brough scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A2.2 - Scrub - scattered | 2 gorse bushes in corner of field. | NY7678814996 |
| A2.2 - Scrub - scattered | Single gorse at boundary. | NY7678515007 |
| A2.2 - Scrub - scattered | Small patch of gorse. | NY7660714988 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash along east boundary of field. | NY7827014878 |
| A3.1 - Broadleaved Parkland/scattered trees | One silver birch tree, semi-mature, looks heavily managed. On east boundary of field. | NY7826914888 |
| A2.2 - Scrub - scattered | One hawthorn sapling on east boundary of field. | NY7826914884 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn, intensively managed. | NY7548715547 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn, intensively managed. | NY7549115544 |
| A2.2 - Scrub - scattered | Small isolated hedge of hawthorn, intensively managed. | NY7550215538 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead tree. | NY7340716721 |
| A3.1 - Broadleaved Parkland/scattered trees | Willow sp. | NY7341316723 |
| A3.1 - Broadleaved Parkland/scattered trees | Alder tree. | NY7341616723 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature cherry. | NY7507715884 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn. | NY7513615850 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore. | NY7517715822 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore. | NY7516515829 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore and ash. | NY7518315818 |
| A2.2 - Scrub - scattered | Elder. | NY7518915808 |
| A2.2 - Scrub - scattered | Small, isolated sections of ash and elder scrub. | NY7533515700 |
| A2.2 - Scrub - scattered | Small, isolated sections of ash and elder scrub. | NY7533215703 |
| A2.2 - Scrub - scattered | Small, isolated sections of ash and elder scrub. | NY7532815705 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran pedunculate oak. | NY7600615066 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran mature oak. | NY7600915045 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran ash. Roughly 4 meters in circumference. | NY7881014998 |
| A3.1 - Broadleaved Parkland/scattered trees | Three young ash along southern boundary of land parcel on road to brough. | NY7901514844 |

Table 34: Summary of linear phase 1 habitats recorded within the Appleby to Brough scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A1.1.2 - Broadleaved woodland - plantation | 55 | 55 | 387 |
| A2.1 - Scrub - dense/continuous | 24 | 24 | 17 |
| A2.2 - Scrub - scattered | 220 | 220 | 51 |
| A3.1 - Broadleaved Parkland/scattered trees | 617 | 796 | 1848 |
| A3.2 - Coniferous Parkland/scattered trees | 0 | 0 | 36 |

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A3.3 - Mixed Parkland/scattered trees | 0 | 0 | 87 |
| B4 - Improved grassland | 125 | 758 | 150 |
| G2 - Running water | 6426 | 9314 | 24365 |
| G2.1 - Running water - eutrophic | 880 | 880 | 1400 |
| G2.2 - Running water - mesotrophic | 832 | 832 | 2025 |
| J2.1.1 - Intact hedge - native species-rich | 5675 | 6330 | 14058 |
| J2.1.2 - Intact hedge - species-poor | 1248 | 1249 | 666 |
| J2.3.1 - Hedge with trees - native species-rich | 1752 | 1838 | 1110 |
| J2.3.2 - Hedge with trees - species-poor | 1704 | 1820 | 1305 |
| J2.4 - Fence | 14667 | 16004 | 24803 |
| J2.5 - Wall | 5298 | 5764 | 6287 |
| J2.6 - Dry ditch | 0 | 0 | 571 |
| J3.6 - Buildings | 0 | 0 | 228 |
| J4 - Bare ground | 2223 | 2259 | 3530 |
| J5 - Other habitat | 354 | 367 | 421 |

Bowes Bypass

Overview

- 6.3.5.67 Habitats within this scheme largely comprise improved grassland with fences or stone walls as boundary features. Smaller areas of arable, species-poor semi-improved grassland, amenity grassland, scattered trees and marshy grassland are also present. There is a disused rail line to the east which contains areas of semi-improved neutral grassland and stone walls with non-ruderal habitat (ferns). This area and the wider area also support several ponds (HoPI).
- 6.3.5.68 This scheme crosses only Unnamed Tributary of River Greta 7.3 north of Bowes, which forms part of the River Greta from Sleightholme Beck to Eller Beck WFD waterbody (GB103025072140). This minor watercourse is heavily modified by numerous culverts. The scheme falls entirely within a section of the watercourse that is already culverted for 600m (under the existing A66 and surrounding agricultural land). For full assessment of rivers within this scheme please refer to ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4).

Habitats of Principal Importance

- 6.3.5.69 Table 35: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary and within 250m of the indicative site clearance boundary during the desk study (HoPI definitions are provided within Table).

Table 35: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------------------------|---|---|-------------------------------|---------------------------------------|
| Blanket bog | N/A | Less than 0.01 | N/A | N/A |
| Deciduous woodland | N/A | 1.43 | 0.19 | 1.38 |
| Good quality semi-improved grassland | N/A | 0.16 | N/A | N/A |
| Upland heathland | N/A | 1.08 | N/A | 1.09 |

Protected or otherwise notable species

- 6.3.5.70 Protected and notable plant species identified within the desk study are detailed within Table 35: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study includes those listed as SoPI under S41, Schedule

9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

6.3.5.71 Table 36: Protected and notable plant species identified within the desk study includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

6.3.5.72 The protected or otherwise notable plant species recorded during field surveys within 250m of the Order Limits included:

- common heather
- early purple orchid (*Orchis mascula*)
- good-King-Henry (*Blitum bonus henricus*)
- tormentil
- marsh ragwort (*Jacobaea aquaticus*)
- Welsh poppy (*Meconopsis cambrica*)
- harebell
- the endemic species perennial flax (*Linum perenne* ssp. *anglicum*).

Table 36: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-------------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Long-leaved Tail-moss | NZ01 | 0 | | | Yes | | | | |
| Elm gyalecta | NZ01 | 0 | | | Yes | | | | |
| Good-King-Henry | NY9913 | 0 | | | | | | Yes | Yes |
| Giant Bellflower | NY9913 | 0 | | | | LC | Yes | | |
| Wood Forget-me-not | NY9913 | 0 | | | | LC | Yes | | |
| Linum perenne subsp. anglicum | NZ020136 | 96 | | | | VU | | | |
| Wood Millet | NZ022135 | 306 | | | | LC | Yes | | |
| Bluebell | NZ025133 | 656 | | | Yes | LC | Yes | | |
| Lords-and-Ladies | NZ025133 | 656 | | | | LC | Yes | | |
| Spindle | NZ025133 | 656 | | | | LC | Yes | | |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.73 Table 37: Phase 1 habitat types within the Bowes Bypass scheme describes the Phase 1 habitat areas present within the Bowes Bypass scheme and Table 38: Phase 1 habitat types within 250m of the Bowes Bypass scheme describes those within 250m.
- 6.3.5.74 Table 39: Phase 1 point habitat descriptions for within the Bowes Bypass scheme Order Limits describes the baseline Phase 1 point habitats within the Order Limits and Table 40: Phase 1 point habitat descriptions for within 250m of the Bowes Bypass scheme Order Limits describes those within 250m of the Order Limits of the Bowes Bypass scheme.
- 6.3.5.75 Table 41: Summary of linear phase 1 habitats recorded within the Bowes Bypass scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Bowes Bypass scheme.

Table 37: Phase 1 habitat types within the Bowes Bypass scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| J1.1 - Cultivated/disturbed land - arable | 0.08ha | 0.02ha | Grassland field used for silage. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| B4 - Improved grassland | 29.93ha | 29.08ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 11.52ha | 10.56ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 1.28ha | 0.93ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 0ha | >0.001ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial rye- | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| | | | grass. High levels of disturbance associated with amenity use as garden lawn. | |
| J4 - Bare ground | 0.28ha | 0.69 ha | Compacted bare soils from farm machinery and areas of unsealed artificial surfaces. Devoid of any vegetation. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 0.22ha | 0.17ha | Areas of grassland with moderate species diversity. Species recorded include false oat grass, red fescue, sheep's fescue, Yorkshire-fog, cock's-foot, common bent and crested dog's-tail. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.01ha | 0.01ha | Builders yard with area colonised by sparse coverage of vegetation, including Yorkshire fog, creeping buttercup and smooth sow-thistle. | Negligible - small area of habitat with low species diversity. |
| A1.1.2 - Broadleaved woodland - plantation | 3.29ha | 3.19ha | Present within small fragments throughout the scheme. The woodlands are dominated by native, neophyte or near-native species which provide a range of opportunities for wildlife. Tree species include hazel, sycamore, hawthorn, Scots pine and ash. Ground flora is limited. Mature trees are present throughout a number of the woodland blocks. | County to Local - Areas of woodland with more mature trees are considered to be of County importance, fulfilling the Durham BAP Habitat criteria of Woodland and Scrub. Younger woodland blocks are considered to fall short of County importance. However, remain of ecological Importance at the Local level. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| A1.3.2 - Mixed woodland - plantation | 0.66ha | 0.64ha | Small woodland blocks (0.2ha and below). Dominated by native and neophyte species, including ash, hawthorn, Scots pine and rare alder and sycamore. | Local - lack of naturalness, understory development and age structure limit the ecological interest of the majority of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 0.19ha | 0.01ha | Small block of woodland. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, the area of wet woodland qualifies as a Cumbria BAP habitat (wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.96ha | 0.81ha | Primarily comprising small (under 0.1ha) blocks of dense scrub. Species present include abundant blackthorn and hawthorn with bramble and elder also present. | Local - common and widespread habitat type. However, as a successional habitat type there is some Ecological importance of habitat. |
| C3.1 - Other tall herb and fern - ruderal | 0.29ha | 0.19ha | Areas dominated by common nettle. | Negligible - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|-----------------------------|-------------------------------|---|--|--|
| B5 - Marsh/marshy grassland | 0.11ha | 0.02ha | Area of damp grassland in depression next to drainage pipe. Species present include abundant tufted hair grass (<i>Deschampsia cespitosa</i>), false oat grass and cocks foot with frequent colts foot (<i>Tussilago farfara</i>), hedge bedstraw (<i>Galium mollugo</i>), common vetch (<i>Vicia sativa</i>), occasional selfheal, broad leaved dock, herb Robert - becoming dominated creeping buttercup towards the west. | Local - moderate species diversity present, however, falls short of any HoPI or any Durham BAP Habitat criteria. |
| I2.2 - Spoil | 0.01ha | 0.01ha | Spoil heap devoid of notable flora. | Negligible - no notable floral component. |

Table 38: Phase 1 habitat types within 250m of the Bowes Bypass scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 7.3ha | 6.20ha | Dominated by arable fields used for silage. Some of which are sheep grazed. | Local - common and widespread species composition with a low level of naturalness. |
| B4 - Improved grassland | 129.33ha | 127.21ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| B6 - Poor semi-improved grassland | 5.19ha | 6.14ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 3.15ha | 3.14ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.9ha | 0.90ha | As within indicative site clearance boundary. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J5 - Other habitat | 0.57ha | 0.57ha | Allotments. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J4 - Bare ground | 0.48ha | 0.61ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 3.86ha | 3.91ha | As within indicative site clearance boundary. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.02ha | 0.02ha | As within indicative site clearance boundary. | Negligible - small area of habitat with low species diversity. |
| A1.1.2 - Broadleaved woodland - plantation | 0.29ha | 0.38ha | As within indicative site clearance boundary. | County to Local - Areas of woodland with more mature trees are considered to be of County importance, fulfilling the Durham BAP Habitat criteria of Woodland |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| | | | | and Scrub. Younger woodland blocks are considered to fall short of County importance. However, remain of ecological Importance at the Local level. |
| A1.2.2 - Coniferous woodland - plantation | 0.06ha | 0.04ha | Woodland block dominated by Norway spruce (<i>Picea abies</i>). | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 0.32ha | 0.34ha | Small woodland blocks of approximately 0.2ha and below. Tree species present include sycamore, cherry (<i>Prunus</i> sp.), ash and oak. Snowberry is also present within the understory. | Local - low level of naturalness and minimal ground flora limit this habitat's ecological interest. |
| A1.1.1 - Broadleaved woodland - semi-natural | 1.87ha | 2.05ha | Mature woodland with wych elm (<i>Ulmus glabra</i>), sycamore, ash and pedunculate oak recorded. Ground flora includes dog's mercury and occasional ferns. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, the area of wet woodland qualifies as a Cumbria BAP habitat (wet woodland). |
| A2.1 - Scrub - dense/continuous | 0.35ha | 0.50ha | As within indicative site clearance boundary. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 0.54ha | 0.65ha | As within indicative site clearance boundary. | Negligible - this habitat is common and widespread and does not fulfil any criteria for |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---------------------------------------|-------------------------------|---|--|--|
| | | | | HoPI or county level BAP habitats. |
| B5 - Marsh/marshy grassland | 0.34ha | 0.43ha | Flood plain grasslands with species composition including frequent soft rush, hard rush, water mint (<i>Mentha aquatica</i>), in addition to field madder (<i>Sherardia arvensis</i>). | National - these areas support species compositions that qualify as HoPI Purple Moor Grass and Rush Pastures |
| A2.2 - Scrub - scattered | 0.01ha | 0.01ha | Small area of scattered scrub over grassland. Species present include hawthorn, ash and common nettle. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| G1.1 - Standing water - eutrophic | 0.01ha | 0.03ha | Three ponds. | National - qualifies as HoPI Eutrophic Standing Waters and also Ponds. |
| B1.2 - Acid grassland - semi-improved | 4.29ha | 4.42ha | Area grassland, some of which is subject to low intensity sheep grazing. Species present include mat grass (<i>Nardus stricta</i>), soft rush, tufted hair grass, red fescue, common bent and tormentil. | National - meets HoPI criteria for Lowland Dry Acid Grassland. |
| I2.2 - Spoil | #N/A | Less than 0.01ha | As within indicative site clearance boundary. | Negligible |
| I2.1 - Quarry | 3.92ha | 3.92ha | Active aggregate quarry. | Negligible - no notable floral component, high level of disturbance. |

Table 39: Phase 1 point habitat descriptions for within the Bowes Bypass scheme Order Limits

| Phase 1 Habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0087113316 |
| A2.2 - Scrub - scattered | Small section of scattered scrub along dry stone wall - blackthorn dominant with common nettle frequent. | NZ0114313619 |
| A2.2 - Scrub - scattered | Small section of scattered scrub along dry stone wall - blackthorn dominant with common nettle frequent. | NZ0114913620 |
| A2.2 - Scrub - scattered | Small section of scattered scrub along dry stone wall - blackthorn dominant with common nettle frequent. | NZ0114613620 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated sycamore tree along boundary. | NZ0107413654 |
| A3.2 - Coniferous Parkland/scattered trees | 2 leylandii and 2 young beech on boundary of land parcel. | NY9929613696 |
| A2.2 - Scrub - scattered | Semi-mature. | NZ0071313596 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature ash tree. | NY9993513736 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature ash tree. | NY9972713829 |
| A3.1 - Broadleaved Parkland/scattered trees | Sycamore. | NY9925413677 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature elm sp. | NY9929213695 |

Table 40: Phase 1 point habitat descriptions for within 250m of the Bowes Bypass scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A2.2 - Scrub - scattered | Cherry and cherry laurel shrubs surrounded by raspberry. | NY9929713612 |
| A2.2 - Scrub - scattered | Cherry laurel and cherry shrubs surrounded by raspberry. | NY9928213617 |
| A2.2 - Scrub - scattered | Cherry laurel and cherry shrubs surrounded by raspberry. | NY9929213623 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn along wall. | NZ0015013434 |
| A3.1 - Broadleaved Parkland/scattered trees | Young ash tree along wall. | NZ0013813440 |
| A3.1 - Broadleaved Parkland/scattered trees | 2 x semi-mature ash along wall boundary. | NZ0012413440 |
| A3.1 - Broadleaved Parkland/scattered trees | Young ash tree along wall. | NZ0011313441 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature ash along wall boundary. | NZ0010413441 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature apple tree. | NZ0077613325 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature apple tree. | NZ0076413332 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0070413344 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0070413352 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0070313364 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NZ0070213383 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NZ0070213396 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0070113405 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NZ0070013419 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature beech tree. | NZ0068813526 |
| A2.2 - Scrub - scattered | Isolated blackthorn shrub on boundary. | NZ0140513912 |
| A2.2 - Scrub - scattered | Isolated blackthorn shrub on boundary. | NZ0140713911 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree on boundary. | NZ0140613892 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore on boundary. | NZ0140413872 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated ash tree at boundary. | NZ0111013856 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated ash tree at boundary. | NZ0112013861 |
| A3.1 - Broadleaved Parkland/scattered trees | Two isolated ash trees at boundary. | NZ0113613867 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered blackthorn trees along boundary. | NZ0103213930 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated ash tree along boundary. | NZ0101413921 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn trees along boundary. | NZ0105513939 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree along boundary. | NZ0102113888 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn and ash trees along boundary. | NZ0104613936 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn and ash trees along boundary. | NZ0105013938 |
| A3.1 - Broadleaved Parkland/scattered trees | Scattered hawthorn, blackthorn trees along boundary. | NZ0104113935 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree along boundary. | NZ0101713878 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Isolated hawthorn tree along boundary. | NZ0101813905 |
| A2.2 - Scrub - scattered | Scattered hawthorn and elder scrub. | NY9886613238 |
| A2.2 - Scrub - scattered | Scattered blackthorn shrubs. | NY9872713184 |
| A2.2 - Scrub - scattered | Scattered blackthorn shrubs. | NY9881813402 |
| A2.2 - Scrub - scattered | Isolated hawthorn shrub. | NY9879413296 |
| A2.2 - Scrub - scattered | Scattered blackthorn and hawthorn shrubs. | NY9884413336 |
| A2.2 - Scrub - scattered | Isolated hawthorn shrub. | NY9881613371 |
| A2.2 - Scrub - scattered | Isolated dog rose shrub. | NY9870413209 |
| A2.2 - Scrub - scattered | Scattered blackthorn and elder scrub. | NY9882313246 |
| A2.2 - Scrub - scattered | Isolated hawthorn shrub. | NY9882113388 |
| A2.2 - Scrub - scattered | Scattered blackthorn and elder scrub. | NY9883613241 |
| A2.2 - Scrub - scattered | Isolated hawthorn shrub. | NY9881313412 |
| A2.2 - Scrub - scattered | Scattered blackthorn scrub. | NY9883313250 |
| A2.2 - Scrub - scattered | Scattered blackthorn shrubs. | NY9883213342 |
| A2.2 - Scrub - scattered | Scattered blackthorn shrubs. | NY9882313365 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore on river bank. | NY9886013214 |
| A2.2 - Scrub - scattered | Scattered hawthorn scrub. | NY9883813236 |
| A2.2 - Scrub - scattered | Small patch of elder at allotment boundary, with dog rose. | NY9885913679 |
| A2.2 - Scrub - scattered | Small patch of elder at allotment boundary. | NY9885213688 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY9886213663 |
| A2.2 - Scrub - scattered | Small patch of elder at allotment boundary. | NY9885613684 |
| A2.2 - Scrub - scattered | Guilder rose sapling along ditch bank. | NY9883513704 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature sycamore. | NY9879513660 |
| A3.1 - Broadleaved Parkland/scattered trees | Single semi-mature horse-chestnut tree. | NY9974013520 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Two mature pedunculate oak trees. | NY9972113546 |
| A3.1 - Broadleaved Parkland/scattered trees | Single semi-mature willow sp. (suspected salix alba). | NY9973013502 |
| A3.1 - Broadleaved Parkland/scattered trees | Two willow sp. (suspected salix alba) and one mature ash. | NY9972013502 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature ash tree. | NY9972113535 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature rowan. | NY9918013402 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature elder. | NY9917913403 |
| A3.1 - Broadleaved Parkland/scattered trees | Semi-mature elder. | NY9917913404 |
| A2.2 - Scrub - scattered | One elder tree on boundary. | NY9917913379 |
| A3.1 - Broadleaved Parkland/scattered trees | 2 mature sycamore. | NY9904913491 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead ash tree, hollow inside. | NY9902713487 |
| A2.2 - Scrub - scattered | Young elder. | NY9905513463 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY9905813464 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore. | NY9908913471 |
| A2.2 - Scrub - scattered | Young elder. | NY9909513471 |
| A3.1 - Broadleaved Parkland/scattered trees | One mature ash and one mature hawthorn. | NY9901613434 |
| A3.1 - Broadleaved Parkland/scattered trees | Two mature ash trees. | NY9900813448 |

Table 41: Summary of linear phase 1 habitats recorded within the Bowes Bypass scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A1.1.2 - Broadleaved woodland - plantation | 32 | 32 | 183 |
| A3.1 - Broadleaved Parkland/scattered trees | 271 | 271 | 1365 |
| G2 - Running water | 782 | 786 | 4327 |
| G2.1 - Running water - eutrophic | 216 | 217 | 478 |
| I2.2 - Spoil | 0 | 0 | 1 |

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| J1.1 - Cultivated/disturbed land - arable | 561 | 561 | 2469 |
| J1.4 - Introduced shrub | 0 | 0 | 15 |
| J2.1.1 - Intact hedge - native species-rich | 127 | 243 | 2324 |
| J2.1.2 - Intact hedge - species-poor | 663 | 663 | 92 |
| J2.3.1 - Hedge with trees - native species-rich | 373 | 468 | 949 |
| J2.3.2 - Hedge with trees - species-poor | 0 | 0 | 350 |
| J2.4 - Fence | 4187 | 4257 | 6593 |
| J2.5 - Wall | 3973 | 4410 | 11273 |
| J2.6 - Dry ditch | 72 | 139 | 356 |
| J4 - Bare ground | 32 | 32 | 1005 |
| J5 - Other habitat | 182 | 182 | 12 |

Cross Lanes to Rokeby

Overview

- 6.3.5.76 Habitats within the indicative site clearance boundary of this scheme are dominated by arable with abundant areas of improved grassland, both habitats of low conservation importance. Smaller areas of broad-leaved woodland (HoPI and Ancient Woodlands), semi-improved grasslands, gardens with amenity grasslands and scattered trees, and buildings are also present. Arable field boundary features are predominantly fences, although several hedgerows are present. These include species-rich hedgerows with trees, species-poor hedgerows, individual trees, and defunct hedgerows that are now reduced to scattered trees or scrub.
- 6.3.5.77 Habitats within 250m of the indicative site clearance boundary are also dominated by arable with abundant areas of improved grassland. Rokeby Park, a large area of parkland habitat (HoPI) with many veteran and ancient trees and deadwood resource is also present.
- 6.3.5.78 The scheme crosses several watercourses (Unnamed Tributaries of Tutta Beck and Tutta Beck) see Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4) for full assessment of river habitats.

Habitats of Principal Importance

- 6.3.5.79 Table 42: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary, the Order Limits and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 42: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 0.40 | 19.20 | 2.92 | 19.52 |

Protected or otherwise notable species

- 6.3.5.80 Protected and notable plant species identified within the desk study are detailed within Table 43: Protected and notable plant species identified within the desk study.
- 6.3.5.81 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

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- 6.3.5.82 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.83 The protected or otherwise notable plant species recorded are extensive for this scheme. Notable protected plant species include early purple orchid *Orchis mascula* and common cow wheat *Melampyrum pratense*. The invasive species Indian balsam, Japanese knotweed and Japanese rose (NZ 07622 13459) were recorded during the desk and field surveys. There is also an area of suspected treated giant hogweed to the south of the existing A66.

Table 43: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|----------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Bluebell | NZ01S | 0 | | | Yes | LC | Yes | | |
| Wood-sorrel | NZ01S | 0 | | | | LC | Yes | | |
| Sanicle | NZ01S | 0 | | | | LC | Yes | | |
| Soft Shield-fern | NZ0614 | 0 | | | | LC | Yes | | |
| Moschatel | NZ01S | 0 | | | | LC | Yes | | |
| Ramsons | NZ01S | 0 | | | | LC | Yes | | |
| Wood Anemone | NZ0614 | 0 | | | | LC | Yes | | |
| Lords-and-Ladies | NZ01S | 0 | | | | LC | Yes | | |
| Woodruff | NZ01S | 0 | | | | LC | Yes | | |
| Toothwort | NZ0614 | 0 | | | | LC | Yes | | |
| Hairy Wood-rush | NZ0614 | 0 | | | | LC | Yes | | |
| Wood Melick | NZ0614 | 0 | | | | LC | Yes | | |
| Dog's Mercury | NZ0614 | 0 | | | | LC | Yes | | |
| Wood Forget-me-not | NZ01S | 0 | | | | LC | Yes | | |
| Goldilocks Buttercup | NZ01S | 0 | | | | LC | Yes | | |

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Wood Stitchwort | NZ01S | 0 | | | | LC | Yes | | |
| Wood-sedge | NZ0847913010 | 329 | | | | LC | Yes | | |
| Giant Fescue | NZ0847913010 | 329 | | | | | Yes | | |
| Wood Meadow-grass | NZ0847913010 | 329 | | | | LC | Yes | | |
| Lesser Chickweed | NZ0847913010 | 329 | | | | LC | | | Yes |
| Wood Speedwell | NZ0847913010 | 329 | | | | LC | Yes | | |
| Long-leaved Tail-moss | NZ040148 | 605 | | | Yes | | | | |
| Indian Balsam | NZ083144 | 612 | | Yes | | | | | |
| Hard Shield-fern | NZ0515 | 733 | | | | LC | Yes | | |
| Giant Bellflower | NZ0515 | 733 | | | | LC | Yes | | |
| Eyebright | NZ077124 | 765 | | | | NT | | | |
| Field Maple | NZ075123 | 956 | | | | LC | Yes | | |
| Remote Sedge | NZ075123 | 956 | | | | LC | Yes | | |
| Yellow Star-of-Bethlehem | NZ06401513 | 1086 | | | | LC | Yes | | |

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Alternate-leaved Golden-saxifrage | NZ060151 | 1131 | | | | LC | Yes | | |
| Orange-fruited elm-lichen | NZ11 | 1448 | | | Yes | | | | |
| Elm gyalecta | NZ01 | 1448 | | | Yes | | | | |
| False-brome | NZ1014 | 1548 | | | | LC | Yes | | |
| Common Comfrey | NZ1014 | 1548 | | | | LC | | | Yes |
| Japanese Knotweed | NZ1014 | 1548 | | Yes | | | | | |
| Spindle | NZ025133 | 1582 | | | | LC | Yes | | |
| Broad-leaved Helleborine | NZ0416 | 1666 | | | | LC | Yes | | |
| Common Cow-wheat | NZ0416 | 1666 | | | | LC | Yes | | |
| Brown Bent | NZ0416 | 1666 | | | | LC | | | Yes |
| Ramsons (also Wild Garlic) | NZ0416 | 1666 | | | | LC | Yes | | |
| Wood Brome | NZ0416 | 1666 | | | | LC | Yes | | |
| Bearded Couch | NZ0416 | 1666 | | | | LC | Yes | | |

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Guelder-rose | NZ0416 | 1666 | | | | LC | Yes | | |
| Rat's-tail Fescue | NZ0416 | 1666 | | | | LC | | | Yes |
| Hairy-brome | NZ0516 | 1721 | | | | LC | Yes | | |
| Wood Millet | NZ022135 | 1842 | | | | LC | Yes | | |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.84 Table 44: Phase 1 habitat types within the Cross Lanes to Rokeby scheme. describes the Phase 1 habitat areas present within the Cross Lanes to Rokeby scheme and Table 45: Phase 1 habitat types within 250m of the Cross Lanes to Rokeby scheme describes those within 250m of the Cross Lanes to Rokeby scheme.
- 6.3.5.85 Table 46: Phase 1 point habitat descriptions for within the Cross Lanes to Rokeby scheme Order Limits describes the baseline Phase 1 point habitats within the Order Limits and Table 47: Phase 1 point habitat descriptions for within 250m of the Cross Lanes to Rokeby scheme Order Limits describes those within 250m of the Order Limits of the Cross Lanes to Rokeby scheme.
- 6.3.5.86 Table 48: Summary of linear phase 1 habitats recorded within the Cross Lanes to Rokeby scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Cross Lanes to Rokeby scheme.

Table 44: Phase 1 habitat types within the Cross Lanes to Rokeby scheme.

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 30.3ha | 25.68ha | Dominated by arable fields used for a combination of silage, cereal and other crops. Field margins are absent in some fields and up to approximately 3m in others. Where margins are present they comprise grassland and ruderal species, typical of arable field margins. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 25.78ha | 17.60ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 7.71ha | 5.05ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup, ribwort plantain, knapweed and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.48ha | 0.35ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.28ha | 0.25ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial ryegrass. High levels of disturbance associated with amenity use as lawn. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J5 - Other habitat | 0.36ha | 0.22ha | Dominated by residential garden mosaics of ornamental flower beds, introduced shrubs and amenity grassland lawns. Area of approximately 1.4ha of young orchard over improved grassland. Grassland dominated by Yorkshire fog. | Local to negligible - the majority of the habitats are of Negligible ecological importance. However, the area of young orchard, while falling short of the HoPI criteria for Traditional Orchard, is of some ecological importance. |
| J4 - Bare ground | 2.12ha | 2.00ha | Compacted bare soils and gravel access track. Devoid of any vegetation. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 0.28ha | 0.06ha | Area of low intensity sheep grazing with scattered apple (<i>Malus</i> sp.) and ash trees and some hawthorn. Tufted hair grass, Yorkshire fog, soft rush, creeping thistle and tufted hair grass present within grassland. | County - the mosaic of fruit trees, other native deciduous trees in combination with grassland in moderate condition are of ecological importance at the County level. |
| A1.1.2 - Broadleaved woodland - plantation | 2.52ha | 2.01ha | Areas of existing A66 woodland screening planting comprising silver birch, holly, sycamore, elder and blackthorn. Several other woodland blocks comprising mature sycamore, | National to Local - the areas of existing A66 screen planting have a limited understory and are of Local importance. The other areas of woodland that include mature |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| | | | ash, beech, and oak with under story planting including dog's mercury, hare bell and male fern, potentially an area of replanted ancient woodland. | native broadleaved trees are of National importance, fulfilling criteria for HoPI Lowland Mixed Deciduous Woodland. Furthermore, these areas fulfil the Durham BAP Habitat criteria for Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites). |
| A1.1.1 - Broadleaved woodland - semi-natural | 2.27ha | 0.49ha | Mature woodland blocks comprising a mix of native species broadleaved species including oak, ash, elder, willow, silver birch, cherry and hazel. Standing deadwood present. Some areas likely replanted over former ancient woodland sites. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, these areas fulfil the Durham BAP Habitat criteria for Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites). |
| A2.1 - Scrub - dense/continuous | 0.1ha | 0.13ha | Dense scrub | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 1.55ha | 0.42ha | Approximately 0.16ha area located adjacent to the northern side of the existing A66, west of Rokeby Park. Comprises ruderal habitat including | National to Negligible - area of former ancient woodland is likely to support a viable ancient woodland seedbank. This area therefore |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|--|
| | | | <p>nettle and broad-leaved dock that is growing within an area of felled woodland (felled within approximately the last two years). Area shown as wooded on Ordnance Maps Office maps dated from 1857. Therefore, a potential former area of ancient woodland. Remaining areas of habitat under this classification are typical of ruderal habitats, dominated by common nettle, creeping thistle and broad-leaved docks with no other associated ecological interest.</p> | <p>qualifies as HoPI Lowland Mixed Deciduous Woodland and Durham BAP Habitat Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites).</p> |
| A1.3.1 - Mixed woodland - semi-natural | 0.19ha | 0.19ha | <p>Hazel, rowan, beech, elder, willow, wood avens (<i>Geum urbanum</i>), red campion (<i>Silene dioica</i>) and primrose (<i>Primula vulgaris</i>) recorded within the constituent woodland block. Species composition indicates the woodland is a re-planted ancient woodland site.</p> | <p>National - this area qualifies as HoPI Lowland Mixed Deciduous Woodland and Durham BAP Habitat Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites).</p> |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| F1 - Swamp | 0.02ha | 0.02ha | Small stand of common reed. | County - this habitat qualifies as HoPI reedbed. However, given its limited extent it is considered of County importance, rather than National. |
| B5 - Marsh/marshy grassland | 0.09ha | 0.07ha | Area of marshy grassland. | Local - small area of habitat limiting its overall ecological importance. |
| A3.1 - Broadleaved Parkland/scattered trees | 0.12ha | 0.12ha | Sheep and cattle grazed grassland area with scattered, native, mature deciduous trees. Species include lime (<i>Tilia x europaea</i>), oak, beech and sycamore. | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| G1.1 - Standing water - eutrophic | 0.03ha | 0.03ha | Pond | National - qualifies as HoPI Eutrophic Standing Waters or Ponds. |
| I2.4 - Refuse-tip | 0.03ha | 0.03 ha | General waste. Devoid of notable flora. | Negligible. |

Table 45: Phase 1 habitat types within 250m of the Cross Lanes to Rokeby scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 139.64ha | 120.98ha | As within indicative site clearance boundary. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 72.6ha | 77.14ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 0.95ha | 3.48ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 2.36ha | 2.39ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.6ha | 0.63ha | As within indicative site clearance boundary. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J5 - Other habitat | 0.64ha | 0.77ha | As within indicative site clearance boundary. | Local to negligible - the majority of the habitats are of Negligible ecological importance. However, the area of young orchard, while falling short of the HoPI criteria for Traditional Orchard, is of some ecological importance. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| J4 - Bare ground | 0.26ha | 0.37ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 0.43ha | 0.64 ha | As within indicative site clearance boundary. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.25ha | 0.21ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| A1.1.2 - Broadleaved woodland - plantation | 1.16ha | 1.74ha | As within indicative site clearance boundary. | National to Local - the areas of A66 screen planting have a limited understory and are of Local importance. The other areas of woodland that include mature native broadleaved trees are of National importance, fulfilling criteria for HoPI Lowland Mixed Deciduous Woodland. Furthermore, these areas fulfil the Durham BAP Habitat criteria for Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites). |
| A1.2.2 - Coniferous woodland - plantation | 7.52ha | 6.51ha | Conifer plantation with limited understory. Areas of Indian balsam present. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| A1.3.2 - Mixed woodland - plantation | 1.07ha | 0.76ha | Areas of non-native tree species interspersed with native broadleaved species. Species recorded include pine (Pinus sp.), occasional silver birch, apple and a number of other exotic species. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.1.1 - Broadleaved woodland - semi-natural | 13.34ha | 11.69ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. Furthermore, these areas fulfil the Durham BAP Habitat criteria for Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites). |
| A2.1 - Scrub - dense/continuous | 0.19ha | 0.16ha | As within indicative site clearance boundary. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 2.56ha | 3.47ha | As within indicative site clearance boundary. | National to Negligible - area of former ancient woodland is likely to support a viable ancient woodland seedbank. This area therefore qualifies as HoPI Lowland Mixed Deciduous Woodland and Durham BAP Habitat Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|--|---|
| | | | | Woodland Sites and Restored Native Woodland on Ancient Sites). |
| A1.3.1 - Mixed woodland - semi-natural | 3.78ha | 3.78ha | As within indicative site clearance boundary. | National - this area qualifies as HoPI Lowland Mixed Deciduous Woodland and Durham BAP Habitat Woodland and Scrub (Ancient Semi-Natural Woodland including Planted Ancient Woodland Sites and Restored Native Woodland on Ancient Sites). |
| F1 - Swamp | 0.88ha | 0.68ha | Areas dominated by reed canary grass. | Local - the habitat fails to meet the HoPI criteria, however remains of ecological interest at the Local level. |
| B5 - Marsh/marshy grassland | 0.34ha | 0.36ha | As within indicative site clearance boundary. | Local - small area of habitat limiting its overall ecological importance. |
| A3.1 - Broadleaved Parkland/scattered trees | 20.56ha | 20.56ha | As within indicative site clearance boundary. | National - this habitat meets the HoPI criteria for Wood-Pasture and Parkland. |
| A2.2 - Scrub - scattered | 0.33ha | 0.33ha | Scattered scrub over tall ruderal vegetation. Hawthorn dominates the woody species. Ruderal species include common nettle, hogweed, cock's-foot and Yorkshire fog. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| G1.1 - Standing water - eutrophic | 0.28ha | 0.04ha | Pond. | National - qualifies as HoPI Eutrophic Standing Waters and also Ponds. |
| I1.4.1 - Other exposure - acid/neutral | 0.02ha | 0.02ha | Stonecrop (Sedum sp.) and mosses growing over a gravel base within car park area of Cross Lanes café. | Local - common and widespread species within the UK. Small area of this habitat limits its importance to the Local level. |

Table 46: Phase 1 point habitat descriptions for within the Cross Lanes to Rokeby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---------------------------------|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree along boundary. | NZ0470513719 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hawthorn along boundary. | NZ0470513726 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran sycamore. | NZ0478713829 |
| A3.1 - Broadleaved Parkland/scattered trees | Veteran sycamore. | NZ0477413830 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature pedunculate oak. | NZ0447413895 |

Table 47: Phase 1 point habitat descriptions for within 250m of the Cross Lanes to Rokeby scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Flailed isolated shrub - intertwined hawthorn and elder. | NZ0621914147 |
| A3.1 - Broadleaved Parkland/scattered trees | Two mature ash tree along fence boundary. | NZ0446213553 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead holly tree along boundary. | NZ0453113553 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0459713382 |
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple tree. | NZ0457513354 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0450613362 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0446813365 |

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Crab apple tree. | NZ0457113354 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0446213365 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0455313356 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0445613366 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0455113357 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0444613367 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0443513368 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0450613362 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0441913369 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0449913362 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0440313372 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0449313363 |
| A2.2 - Scrub - scattered | Western gorse on field boundary. | NZ0439013373 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0448413364 |
| A3.1 - Broadleaved Parkland/scattered trees | Pollard hawthorn on boundary. | NZ0439613372 |
| A3.1 - Broadleaved Parkland/scattered trees | Hawthorn tree. | NZ0440813371 |
| A3.1 - Broadleaved Parkland/scattered trees | Dead ash tree with significant honey fungus colonisation. | NZ0433313379 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature ash tree. | NZ0446813917 |

Table 48: Summary of linear phase 1 habitats recorded within the Cross Lanes to Rokeby scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|--|--|--------------------------------|------------------------------------|
| A1.1.1 - Broadleaved woodland - semi-natural | 0 | 0 | 403 |
| A1.1.2 - Broadleaved woodland - plantation | 17 | 17 | 349 |
| A2.2 - Scrub - scattered | 0 | 4 | 4 |

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A3.1 - Broadleaved Parkland/scattered trees | 389 | 640 | 1025 |
| G2 - Running water | 881 | 1354 | 11366 |
| G2.1 - Running water - eutrophic | 615 | 996 | 2853 |
| G2.2 - Running water - mesotrophic | 0 | 0 | 315 |
| J2.1.1 - Intact hedge - native species-rich | 2192 | 2608 | 2070 |
| J2.1.2 - Intact hedge - species-poor | 0 | 0 | 10 |
| J2.3.1 - Hedge with trees - native species-rich | 593 | 718 | 800 |
| J2.3.2 - Hedge with trees - species-poor | 899 | 962 | 589 |
| J2.4 - Fence | 3275 | 3859 | 3899 |
| J2.5 - Wall | 120 | 138 | 1157 |
| J2.6 - Dry ditch | 467 | 893 | 248 |
| J4 - Bare ground | 132 | 295 | 234 |

Stephen Bank to Carkin Moor

Overview

- 6.3.5.87 This scheme is dominated by arable habitats of low conservation importance. Small areas of improved grassland, broadleaved woodland (HoPI), a variety of hedge conditions from new to old and species-rich with trees are also present. A few small watercourses are present which support modified wetland habitats including a previously wooded area, that has been felled and developed into an extensive reedbed (HoPI). The scheme also passes through several woodland blocks of mixed plantation which have poor canopy and sub-canopy structure, or ground flora, limiting their overall ecological interest.
- 6.3.5.88 An unnamed tributary of Holme Beck 9.2 (WCP_33_D/S) intersects this scheme (described in full within ES Appendix 6.20: Aquatic Macrophyte and River Corridor Survey (Application Document 3.4). Flowing through arable habitats with sparse marginal vegetation, the watercourse is of low conservation importance.

Habitats of Principal Importance

- 6.3.5.89 Table 49: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary, the Order Limits and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 49: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 1.89 | 12.66 | 3.47 | 11.27 |

Protected or otherwise notable species

- 6.3.5.90 Protected and notable plant species identified within the desk study are detailed within Table 50: Protected and notable plant species identified within the desk study.
- 6.3.5.91 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.92 The following protected or otherwise notable plant species were recorded within 250m of the Order Limits during field surveys:
- lesser spearwort *Ranunculus flammula*
 - corn spurrey *Spergularia arvensis*

-
- crosswort
 - harebell
 - tormentil
 - Indian balsam
 - Japanese rose
 - Rhododendron.

Table 50: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|---------------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Soft Shield-fern | NZ120108 | 0 | | | | LC | Yes | | |
| Wood Speedwell | NZ16150832 | 0 | | | | LC | Yes | | |
| Field Mouse-ear | NZ10 | 0 | | | | LC | | | Yes |
| Common Cudweed | NZ10 | 0 | | | | NT | | Yes | Yes |
| Night-flowering Catchfly | NZ10 | 0 | | | | VU | | Yes | |
| Corn Spurrey | NZ10 | 0 | | | | VU | | Yes | Yes |
| Orange-fruited elm-lichen | NZ11 | 0 | | | Yes | | | | |
| Elm gyalecta | NZ10 | 0 | | | Yes | | | | |
| Dog's Mercury | NZ16400815 | 74 | | | | LC | Yes | | |
| Moschatel | NZ167082 | 85 | | | | LC | Yes | | |
| Red Hemp-nettle | NZ167082 | 85 | Yes | | | CR | | Yes | Yes |
| Wood-sorrel | NZ167082 | 85 | | | | LC | Yes | | |
| Bluebell | NZ1606 | 484 | | | Yes | LC | Yes | | |
| Rhododendron ponticum | NZ1606 | 484 | | Yes | | | | | |
| Lords-and-Ladies | NZ1009 | 1030 | | | | LC | Yes | | |
| Japanese Rose | NZ1009 | 1030 | | Yes | | | | | |
| Indian Balsam | NZ1108 | 1207 | | Yes | | | | | |
| Field Maple | NZ104119 | 1539 | | | | LC | Yes | | |

| Common name | Grid reference | Distance from Order Limits | Species of Principle Importance | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|-----------------------|----------------|----------------------------|---------------------------------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Smooth Cat's-ear | NZ162112 | 1742 | | | | VU | | | Yes |
| Shepherd's Cress | NZ162112 | 1742 | | | | NT | | Yes | Yes |
| Long-leaved Tail-moss | NZ01 | 1759 | | | Yes | | | | |
| Hard Shield-fern | NZ159055 | 1885 | | | | LC | Yes | | |
| Ramsons | NZ159055 | 1885 | | | | LC | Yes | | |
| Wood Anemone | NZ159055 | 1885 | | | | LC | Yes | | |
| False-brome | NZ159055 | 1885 | | | | LC | Yes | | |
| Remote Sedge | NZ159055 | 1885 | | | | LC | Yes | | |
| Wood-sedge | NZ159055 | 1885 | | | | LC | Yes | | |
| Spindle | NZ159055 | 1885 | | | | LC | Yes | | |
| Hairy Wood-rush | NZ159055 | 1885 | | | | LC | Yes | | |
| Wood Melick | NZ159055 | 1885 | | | | LC | Yes | | |
| Wood Millet | NZ159055 | 1885 | | | | LC | Yes | | |
| Wood Forget-me-not | NZ159055 | 1885 | | | | LC | Yes | | |
| Sulphur Clover | NZ159055 | 1885 | | | | VU | | | |
| Guelder-rose | NZ159055 | 1885 | | | | LC | Yes | | |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.93 Table 51: Phase 1 habitat types within the Stephen Bank to Carkin Moor scheme describes the Phase 1 habitat areas present within the Stephen Bank to Carkin Moor scheme and Table 52: Phase 1 habitat types within 250m of the Stephen Bank to Carkin Moor scheme describes those within 250m of the Stephen Bank to Carkin Moor scheme.
- 6.3.5.94 Table 53: Phase 1 point habitat descriptions for within the Stephen Bank to Carkin Moor scheme Order Limits describes the baseline Phase 1 point habitats within the Order Limits and Table 54: Phase 1 point habitat descriptions for within 250m of the Stephen Bank to Carkin Moor scheme Order Limits describes those within 250m of the Order Limits of the Stephen Bank to Carkin Moor scheme.
- 6.3.5.95 Table 55: Summary of linear phase 1 habitats recorded within the Stephen Bank to Carkin Moor scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the Stephen Bank to Carkin Moor scheme.

Table 51: Phase 1 habitat types within the Stephen Bank to Carkin Moor scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 64.76ha | 52.69ha | Dominated by arable fields used for a combination of silage, cereal and other crops. Field margins are absent in some fields and up to approximately 3m in others. Where margins are present they comprise grassland and ruderal species, typical of arable field margins. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 18.5ha | 11.35ha | Dominated by sheep grazed fields, kept at a short sward height, comprising grass species typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 11.88ha | 9.84ha | Combination of managed and unmanaged grassland areas. Species composition is indicative of nutrient enrichment with a combination of coarse grasses and common forb species present. Abundant species include perennial rye-grass, Yorkshire-fog, cock's-foot, creeping buttercup, ribwort plantain, knapweed and creeping thistle. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.25ha | 0.04ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.54ha | 0.52ha | Grassland maintained at a short sward height through frequent cutting. Species composition is limited to fast growing, common species, including perennial ryegrass. High levels of disturbance associated with amenity use as lawn. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J4 - Bare ground | 0.09ha | 0.09ha | Compacted bare soils and gravel access track. Devoid of any vegetation. | Negligible - devoid of flora. |
| J1.3 - Cultivated/disturbed land - ephemeral/short perennial | 0.5ha | 0.50ha | Mix of degrading hard standing with cracks, manure piles and ephemeral vegetation. | Negligible - small area of habitat with low species diversity and limited floral component. |
| A1.1.2 - Broadleaved woodland - plantation | 1.34ha | 0.90ha | Comprised of several distinct woodland blocks. Area of approximately 30 year old plantation which has been densely planted, limiting the development of an understory. Species include oak, alder, beech and ash. A dual row of mature sycamore and ash trees. Area of young birch trees. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 0.65ha | 0.19ha | Mature pine plantation with limited understory. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 3.63ha | 1.78ha | Small woodland blocks ranging from approximately 0.7ha to 0.2ha. Dominated by native species. These | Local - lack of naturalness, understory development and age structure limit the ecological |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|--|
| | | | include oak, silver birch, ash, blackthorn, hazel and Scots pine. Underdeveloped understories due to dense tree groupings. Majority of woodland estimated between 15 and 30 years old. One area covering approximately 0.01ha comprises mature plantation. | interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 0.53ha | 0.46ha | Mature woodland blocks comprising a mix of native species broadleaved species including oak and ash. Standing deadwood present. Ancient woodland indicator species present. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| A2.1 - Scrub - dense/continuous | 2.09ha | 1.65ha | Dense scrub | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 1.5ha | 0.40ha | Areas of approximately 0.2ha and below are scattered throughout the scheme. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| F1 - Swamp | 2.78ha | 1.33ha | Area of felled plantation woodland, which has become dominated by common reed, with some developing growth of willow and poplar scrubland. Located south of the existing A66 and east of Newsham. | County - the developing reedbeds are of ecological importance, however low water table means this habitat falls short of the HoPI Reedbed. As such this habitat falls below the level of National importance and is considered of County importance. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|-----------------------------------|-------------------------------|---|--|--|
| B5 - Marsh/marshy grassland | 0.17ha | 0.10ha | Area of marshy grassland. | Local - small area of habitat limiting its overall ecological importance. |
| A2.2 - Scrub - scattered | 0.19ha | 0.19ha | Scattered scrub. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. Interest is greatest within larger blocks of habitat. |
| G1.1 - Standing water - eutrophic | 0.1ha | 0.10ha | Sustainable Drainage (SuDS) ponds associated with the existing A66. Colonised by some common reed. | National - matches the HoPI criteria for ponds. |

Table 52: Phase 1 habitat types within 250m of the Stephen Bank to Carkin Moor scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 270.83ha | 233.94ha | As within indicative site clearance boundary. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 57.67ha | 61.42ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| B6 - Poor semi-improved grassland | 10.6ha | 12.07ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 2.46ha | 2.67ha | As within indicative site clearance boundary. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 1.15ha | 1.15ha | As within indicative site clearance boundary. | Negligible - low species diversity, high levels of disturbance, low level of naturalness and small habitat area. |
| J4 - Bare ground | 0.28ha | 0.28ha | As within indicative site clearance boundary. | Negligible - devoid of flora. |
| B2.2 - Neutral grassland - semi-improved | 1.39ha | 1.33ha | Areas of grassland with moderate species diversity. Species recorded include purple moor-grass, Yorkshire-fog and creeping thistle. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| A1.1.2 - Broadleaved woodland - plantation | 2.91ha | 3.21ha | As within indicative site clearance boundary. | Local - Falling short of any HoPI criteria and covering small, fragmented areas, these woodland blocks are of Local ecological importance. |
| A1.2.2 - Coniferous woodland - plantation | 8.04ha | 5.14ha | As within indicative site clearance boundary. | Local - low level of naturalness and minimal ground flora limit these habitats ecological interest. |
| A1.3.2 - Mixed woodland - plantation | 2.48ha | 4.31ha | As within indicative site clearance boundary, however with woodland | Local - lack of naturalness, understory development and age structure limit the ecological |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|---|
| | | | blocks up to approximately 1.2ha in size. | interest of these habitats to the Local level. |
| A1.1.1 - Broadleaved woodland - semi-natural | 1.59ha | 1.11ha | As within indicative site clearance boundary. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| A2.1 - Scrub - dense/continuous | 0.16ha | 0.60ha | Dense bramble scrub extending along arable margin over dry drainage ditch. Species present include dominant bramble with occasional dog-rose (<i>Rosa canina</i> agg.) and rare elder. Damp tolerant species such as meadowsweet and tufted hair grass also present. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| C3.1 - Other tall herb and fern - ruderal | 0.22ha | 1.30ha | As within indicative site clearance boundary. | Local - this habitat is common and widespread and does not fulfil any criteria for HoPI or county level BAP habitats. |
| A1.3.1 - Mixed woodland - semi-natural | 3.1ha | 0.87ha | Species present include oak, ash, elder, sycamore, silver birch, willow and Scots pine. Mature trees present. Rhododendron (<i>Rhododendron ponticum</i>) present. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| F1 - Swamp | 6.25ha | 6.47ha | As within indicative site clearance boundary. | National - the developing reedbeds are of ecological importance, considered to qualify as HoPI Reedbed. In addition, the former plantation was established within an area of old carr woodland that |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|--|--|
| | | | | dates back to before the mid-19th century. The seedbank of this possibly ancient area of woodland may remain viable, increasing the importance of this habitat. As such it is of importance at the National level. |
| B5 - Marsh/marshy grassland | 7.6ha | 5.99ha | Abundance of rushes (<i>Juncus</i> sp.) | National - these areas support species compositions that qualify as HoPI Purple Moor Grass and Rush |
| A3.1 - Broadleaved Parkland/scattered trees | 0.78ha | 0.78ha | Mature trees set within gardens with amenity lawns. Species include mature sycamore, ash and silver birch. | County - this habitat falls short of the criteria for the nationally important HoPI Wood-Pasture and Parkland, however, they remain of ecological importance at the County level. |

Table 53: Phase 1 point habitat descriptions for within the Stephen Bank to Carkin Moor scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ1648908080 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ1648408090 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ1647308100 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ1649008085 |
| A3.1 - Broadleaved Parkland/scattered trees | Potential veteran tree - mature ash at edge of woodland - diameter at breast height between 1 and 1.5m. | NZ1513409070 |
| A2.2 - Scrub - scattered | Scattered hawthorn along road verge. | NZ1600408416 |
| A2.2 - Scrub - scattered | Scattered hawthorn along road verge. | NZ1603708396 |

| Phase 1 habitat type | Description | Grid reference |
|---|--|----------------|
| A2.2 - Scrub - scattered | Bramble scrub within road verge. | NZ1605008387 |
| A2.2 - Scrub - scattered | Scattered hawthorn along road verge. | NZ1606708375 |
| A2.2 - Scrub - scattered | Old remnant hawthorn hedgerow, 7m long along a66 southern boundary of land parcel. | NZ1396209638 |
| A2.2 - Scrub - scattered | Three hawthorns with ivy on southern boundary along a66. | NZ1397609631 |
| A2.2 - Scrub - scattered | Scattered gorse scrub along arable margin. | NZ1515308904 |
| A2.2 - Scrub - scattered | Scattered gorse scrub along arable margin. | NZ1516908894 |
| A2.2 - Scrub - scattered | Scattered gorse scrub along arable margin. | NZ1525708845 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature hawthorn tree. | NZ1693107830 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature hazel and a hawthorn. | NZ1669807975 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature hedgerow tree. | NZ1670807969 |
| A3.1 - Broadleaved Parkland/scattered trees | Single mature hazel tree. | NZ1672907957 |
| A3.1 - Broadleaved Parkland/scattered trees | Felled acer sp. | NZ1400009600 |
| A2.2 - Scrub - scattered | Isolated elder scrub. | NZ1401409594 |
| A2.2 - Scrub - scattered | Scattered elder scrub along boundary. | NZ1405909565 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1406209563 |
| A2.2 - Scrub - scattered | Scattered hawthorn scrub along boundary. | NZ1405509568 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1407409556 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1406809561 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1408409551 |
| A2.2 - Scrub - scattered | Scattered hawthorn scrub along boundary. | NZ1408209551 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1409709543 |
| A3.1 - Broadleaved Parkland/scattered trees | Felled mature sycamore along boundary. | NZ1411209534 |
| A3.1 - Broadleaved Parkland/scattered trees | Mature sycamore along boundary. | NZ1413209512 |

| Phase 1 habitat type | Description | Grid reference |
|---|--------------------------|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Immature ash planted. | NZ1644808228 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature ash planted. | NZ1644408232 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry planted. | NZ1643608232 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature oak planted. | NZ1642508235 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry planted. | NZ1641708229 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature lime planted. | NZ1641808237 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry planted. | NZ1641308242 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry planted. | NZ1640808250 |

Table 54: Phase 1 point habitat descriptions for within 250m of the Stephen Bank to Carkin Moor scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|---|----------------|
| A2.2 - Scrub - scattered | Scattered hawthorn scrub along arable margin. | NZ1521808536 |
| A2.2 - Scrub - scattered | Scattered elder scrub along arable margin. | NZ1522208535 |
| A2.2 - Scrub - scattered | Scattered dog-rose scrub along arable margin. | NZ1522408533 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature ash planted. | NZ1648508223 |
| A3.1 - Broadleaved Parkland/scattered trees | Immature cherry planted. | NZ1647708226 |

Table 55: Summary of linear phase 1 habitats recorded within the Stephen Bank to Carkin Moor scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A1.1.2 - Broadleaved woodland - plantation | 90 | 90 | 308 |
| A2.1 - Scrub - dense/continuous | 211 | 211 | 0 |
| A3.1 - Broadleaved Parkland/scattered trees | 551 | 676 | 545 |
| G2 - Running water | 2400 | 4133 | 7332 |
| G2.1 - Running water - eutrophic | 994 | 1581 | 522 |
| J2.1.1 - Intact hedge - native species-rich | 6008 | 7505 | 11128 |

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| J2.1.2 - Intact hedge - species-poor | 2160 | 2630 | 1354 |
| J2.3.1 - Hedge with trees - native species-rich | 933 | 1196 | 827 |
| J2.3.2 - Hedge with trees - species-poor | 355 | 433 | 912 |
| J2.4 - Fence | 1094 | 1157 | 1305 |
| J2.5 - Wall | 228 | 228 | 385 |
| J2.6 - Dry ditch | 449 | 618 | 218 |
| J5 - Other habitat | 0 | 235 | 260 |

A1(M) Junction 53 Scotch Corner

Overview

- 6.3.5.96 Hardstanding dominates this scheme, being mostly comprised of existing sections of the A1(M) and A66 junction at Scotch Corner. Smaller areas of broadleaved semi-natural woodland within the roundabout (HoPI), broad-leaved plantation, scattered broad-leaved trees and hedgerows (HoPI) are also present.
- 6.3.5.97 Habitats within 250m of the indicative site clearance boundary are dominated by arable land with areas of broadleaved woodland (HoPI), ponds (HoPI), semi-improved, improved and amenity grassland, broadleaved plantation woodland and hedgerows (HoPI) also present.
- 6.3.5.98 This scheme does not interact with any watercourses.

Habitats of Principal Importance

- 6.3.5.99 Table 56: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study identifies the HoPI present within the indicative site clearance boundary, within the Order Limits and within 250m of these boundaries during the desk study (HoPI definitions are provided within Table 2: HoPI present within the Order Limits and 250m of this area identified through desk study).

Table 56: HoPI present within the indicative site clearance boundary, Order Limits and 250m of these areas identified through desk study

| HoPI | Area (ha) within indicative site clearance boundary | Area (ha) within 250m of indicative site clearance boundary | Area (ha) within Order Limits | Area (ha) within 250m of Order Limits |
|--------------------|---|---|-------------------------------|---------------------------------------|
| Deciduous woodland | 0.20 | 0.96 | 0.32 | 0.85 |

Protected or otherwise notable species

- 6.3.5.100 Protected and notable plant species identified within the desk study are detailed within Table 57: Protected and notable plant species identified within the desk study.
- 6.3.5.101 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.
- 6.3.5.102 This includes those listed as SoPI under S41, Schedule 9, Schedule 8, IUCN Red List, ancient woodland indicator species, the Rare Plant Register north-west Yorkshire and Rare Plant Register Cumbria.

Table 57: Protected and notable plant species identified within the desk study

| Common name | Grid reference | Distance from Order Limits | SoPI | Schedule 9 | Schedule 8 | *IUCN Red List | Ancient Woodland Indicator Species | Rare plant register north-west Yorkshire | Rare plant register Cumbria |
|--------------------------|----------------|----------------------------|------|------------|------------|----------------|------------------------------------|--|-----------------------------|
| Hollyberry Cotoneaster | NZ2105 | 208 | | Yes | | | | | |
| Rhododendron ponticum | NZ2205 | 208 | | Yes | | | | | |
| Montbretia | NZ2005 | 327 | | Yes | | | | | |
| Yellow Archangel | NZ2005 | 327 | | Yes | | | | | |
| Lords-and-Ladies | NZ20800540 | 525 | | | | LC | Yes | | |
| Bluebell | NZ20600555 | 756 | | | Yes | LC | Yes | | |
| Ramsons | NZ203059 | 1099 | | | | LC | Yes | | |
| Wood Anemone | NZ203059 | 1099 | | | | LC | Yes | | |
| Dog's Mercury | NZ203059 | 1099 | | | | LC | Yes | | |
| Sanicle | NZ203059 | 1099 | | | | LC | Yes | | |
| Field Mouse-ear | NZ10 | 1327 | | | | LC | | | Yes |
| Common Cudweed | NZ10 | 1327 | | | | NT | | Yes | Yes |
| Night-flowering Catchfly | NZ10 | 1327 | | | | VU | | Yes | |
| Corn Spurrey | NZ10 | 1327 | | | | VU | | Yes | Yes |
| Elm gyalecta | NZ10 | 1327 | | | Yes | | | | |

*IUCN threat criteria: CR = critically endangered, EN = endangered, VU = vulnerable, NT = near threatened, LC = least concern.

Phase 1 Habitats

- 6.3.5.103 Table 58: Phase 1 habitat types within the A1(M) Junction 53 Scotch Corner scheme describes the Phase 1 habitat areas present within the A1(M) Junction 53 Scotch Corner scheme and Table 59: Phase 1 Habitat Types within 250m of the A1(M) Junction 53 Scotch Corner scheme describes those within 250m of the A1(M) Junction 53 Scotch Corner scheme.
- 6.3.5.104 Table 60: Phase 1 point habitat descriptions for within 250m of the A1(M) Junction 53 Scotch Corner scheme Order Limits describes the baseline Phase 1 point habitats within 250m of the Order Limits at baseline. No point habitats were recorded within the Order Limits of the A1(M) Junction 53 Scotch Corner scheme.
- 6.3.5.105 Table 61: Summary of linear phase 1 habitats recorded within 250m of the A1(M) Junction 53 to Scotch Corner scheme Order Limits summarises the baseline linear Phase 1 habitat types within the Order Limits and within 250m of the Order Limits of the A1(M) Junction 53 Scotch Corner scheme.

Table 58: Phase 1 habitat types within the A1(M) Junction 53 Scotch Corner scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|---|--|
| B4 - Improved grassland | 0.05ha | 0.02ha | Part of a larger improved grassland field. Species present typical of nutrient enriched soils, including cock's-foot and perennial rye-grass. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 0.34ha | 0.27ha | A combination of road side verges associated with the A1(M) and A66 road junction. Grassland maintained through routine cutting throughout the year. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J1.2 - Cultivated/disturbed land - amenity grassland | 0.06ha | 0.05ha | Mown amenity grassland at the Scotch Corner service station entrance. Species present include perennial rye-grass, Yorkshire fog, red clover, creeping buttercup and spear thistle. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| J5 - Other habitat | 0ha | Less than 0.01ha | Area of hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |
| A1.1.2 - Broadleaved woodland - plantation | 0.23ha | 0.07ha | Areas of new tree planting on roadside embankments. | Local - young trees with a common and widespread species composition with a low level of naturalness. |
| A1.3.2 - Mixed woodland - plantation | 0.01ha | 0.01ha | Area of semi-mature tree planting within roundabout. | Local - common and widespread species with a |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--------------------------|-------------------------------|---|------------------|--|
| | | | | low level of naturalness and limited ground flora. |
| A2.2 - Scrub - scattered | Less than 0.01ha | Less than 0.01ha | Scattered scrub. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |

Table 59: Phase 1 Habitat Types within 250m of the A1(M) Junction 53 Scotch Corner scheme

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---|-------------------------------|---|---|---|
| J1.1 - Cultivated/disturbed land - arable | 10.62ha | 10.37ha | Arable fields used for a combination of silage, cereal and other crops. | Local to Negligible - while these habitats are not considered to meet any HoPI criteria, the narrow field margins provide floral interest at a Local level. The main body of the fields and those with no margin are of negligible ecological importance. |
| B4 - Improved grassland | 4.21ha | 4.25ha | Grazed grassland. Species present typical of nutrient enriched soils, including perennial rye-grass and white clover. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| B6 - Poor semi-improved grassland | 12.26ha | 12.27ha | As within indicative site clearance boundary. | Local - common and widespread species composition with a low level of habitat type naturalness. |
| J3.6 - Buildings | 0.91ha | 0.91ha | Combination of mixed age and use buildings and hardstanding. | Negligible - artificial manmade habitat, devoid of notable floral composition. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|--|-------------------------------|---|--|---|
| J1.2 - Cultivated/disturbed land - amenity grassland | 1.55ha | 1.55ha | Species composition and management as within indicative site clearance boundary. | Negligible - high levels of disturbance and modification, low degree of naturalness and low species diversity. |
| B2.2 - Neutral grassland - semi-improved | 1.32ha | 1.32ha | Areas of unmanaged grassland. Evidence of rabbit grazing recorded. Species present include false-oat grass, cock's-foot, Yorkshire fog, tufted hair grass, broad-leaved dock and creeping thistle. | Local - species present are indicative of some nutrient improvement, reducing species diversity and resulting in a sward dominated by coarse grasses. |
| A1.1.2 - Broadleaved woodland - plantation | 1.58ha | 1.24ha | As within indicative site clearance boundary. | Local - young trees with a common and widespread species composition with a low level of naturalness. |
| A1.3.2 - Mixed woodland - plantation | 1.4ha | 1.40ha | Young and semi-mature trees with understorey of dense bramble scrub. Tree species present include ash, silver birch, sycamore and beech. | Local - common and widespread species with a low level of naturalness and limited ground flora. |
| A1.1.1 - Broadleaved woodland - semi-natural | 1.22ha | 1.64ha | Tree species present include ash, silver birch, sycamore and willow. | National - this habitat qualifies as HoPI Lowland Mixed Deciduous Woodland. |
| A2.1 - Scrub - dense/continuous | 0.14ha | 0.14ha | Small areas of dense scrub. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |
| A2.2 - Scrub - scattered | 0.05ha | 0.05ha | Scattered scrub. | Local - common and widespread habitat type. However, as a successional habitat type there is some ecological importance. |

| Phase 1 habitat | Area (ha) within Order Limits | Area (ha) within indicative site clearance boundary | Description | Ecological importance of habitat |
|---------------------|-------------------------------|---|---|--|
| G1 - Standing water | 0.1ha | 0.10ha | Pond with high level of turbidity at the time of survey. | County - fulfils the Richmondshire District Council BAP Habitat criteria for Standing Water. |
| J3.4 - Caravan site | 1.83ha | 1.83ha | A combination of amenity grassland, mixed ornamental shrubs and buildings with associated hardstanding. | Negligible - low level of species diversity and naturalness combined with high levels of disturbance and management. |

Table 60: Phase 1 point habitat descriptions for within 250m of the A1(M) Junction 53 Scotch Corner scheme Order Limits

| Phase 1 habitat type | Description | Grid reference |
|---|----------------------|----------------|
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ2193205388 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ2111905282 |
| A3.1 - Broadleaved Parkland/scattered trees | Tree. | NZ2115705284 |
| A3.1 - Broadleaved Parkland/scattered trees | Isolated mature ash. | NZ2168505317 |

Table 61: Summary of linear phase 1 habitats recorded within 250m of the A1(M) Junction 53 to Scotch Corner scheme Order Limits and within 250m

| Linear phase 1 habitat | Length (m) within indicative site clearance boundary | Length (m) within Order Limits | Length within 250m of Order Limits |
|---|--|--------------------------------|------------------------------------|
| A3.1 - Broadleaved Parkland/scattered trees | 0 | 0 | 54 |
| G2 - Running water | 0 | 0 | 73 |
| J2.1.1 - Intact hedge - native species-rich | 0 | 0 | 3507 |
| J2.1.2 - Intact hedge - species-poor | 0 | 0 | 100 |
| J2.4 - Fence | 13 | 38 | 2183 |
| J2.6 - Dry ditch | 0 | 0 | 342 |
| J4 - Bare ground | 0 | 0 | 659 |

Future baseline

- 6.3.5.106 The ecological baseline conditions described above represent those which exist in the absence of the Project and at the time of survey. As stated in Section 3 of CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland, potential changes in baseline conditions also need to be identified in order to assess impacts.
- 6.3.5.107 Based on the survey data collected and land use at the time of survey, the future baseline in the absence of the Project is unlikely to change significantly. Subtle changes are expected due to climate change, such as habitat succession and colonisation, however, the overall habitats and species composition in the study area are expected to be broadly similar to that of the existing baseline. Therefore, the future baseline would remain the same as set out in the existing baseline.

6.3.6 Discussion

- 6.3.6.1 The area within the Order Limits of the Project is dominated by habitats of limited ecological interest. These include improved grassland and cultivated/disturbed land - arable which together account for approximately 600ha of the approximately 800ha recorded within the Order Limits.
- 6.3.6.2 Habitats of ecological interest are limited in area and distribution throughout the Order Limits of the Project. 'Broadleaved woodland - semi-natural' (approximately 12.4ha recorded throughout the Order Limits of the Project) was the most commonly recorded habitat of notable ecological interest and was recorded within the Order Limits of all schemes, with the exception the A1(M) Junction 54 Scotch Corner scheme.
- 6.3.6.3 Other areas of habitat that are of ecological interest were recorded, but were smaller in area. These include areas of acid grassland - semi-improved, lichen/bryophyte heath, swamp, some parts of the recorded marsh/marshy grassland, and standing water.
- 6.3.6.4 A number of individual trees, which have been recorded as point data and classified as 'Mixed Parkland/scattered trees', are also of notable ecological interest. A number of these were identified as mature or veteran specimens which further elevates their potential importance.
- 6.3.6.5 Linear habitats have been identified throughout the Order Limits of the Project and are detailed within the relevant appendices (see ES Appendix 6.4: Hedgerow (Application Document 3.4) and ES Appendix 6.2: Designated Sites (Application Document 3.4).
- 6.3.6.6 The desk study has identified a number of notable floral species within the Order Limits of the Project. This includes a number of non-native invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981. Other notable floral species are detailed with ES Appendix 6.5: National Vegetation Classification (Application Document 3.4).