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## Haweswater Aqueduct Resilience Programme

Chapter 9A - Appendix 9A.2

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Environmental Statement



Water for the North West



## Haweswater Aqueduct Resilience Programme

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2.0	03/21	Project No. amendment and Addition of Wray Compound	MW	AN	AN	AN

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# 1. Phase 1 Habitats Technical Appendix

## 1.1 Introduction

- 1) TEP was appointed by United Utilities to complete an Ecological Impact Assessment (EclA) for the Haweswater Aqueduct Resilience Programme - Proposed Bowland Section. The EclA is required to inform an Environmental Impact Assessment (EIA) and support production of the Environmental Statement (ES).
- 2) A series of ecological surveys was undertaken to complete the EclA. This Appendix is one of a series of Ecological Technical Reports (ETRs) produced to support the EclA. This ETR documents the methods and findings of the extended Phase 1 habitat surveys undertaken by Bowland Ecology.

## 1.2 Summary of Findings

- 3) A wider area was surveyed than will be potentially impacted by the proposed works within the Proposed Bowland Section. Consequently only some of the habitats surveyed and presented within the following Technical Appendix, including Target Note descriptions (Appendix B and D) will be used to inform the EclA.
- 4) The habitats which fall within influencing distance of the proposed works, including the Newton-in-Bowland Compound and the Lower Houses Compound and associated construction access areas, which will be included within the EclA are summarised in Table 1.

**Table1: Habitats present at the Proposed Bowland Section**

Habitat	Quantity Within Application Boundary			Relevant Target Notes / Feature References		
	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound
<b>Area habitats</b>						
Broadleaved semi-natural woodland	0.03 ha	Not present	Not present			
Broadleaved woodland plantation	0.04 ha	Not present	Not present			
Plantation mixed woodland	0.04 ha	Not present	Not present			
Semi-improved neutral grassland	0.12 ha	<0.01 ha	Not present	TR3.TN154		
Poor semi-improved grassland	21.48 ha	10.85 ha	Not present			
Improved grassland	0.60 ha	Not present	2.28 ha			



Habitat	Quantity Within Application Boundary			Relevant Target Notes / Feature References		
	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound
Marshy grassland	0.35 ha	Not present	Not present	TR3.TN148, TR3.TN150		
Semi-improved acid grassland	0.11 ha	Not present	Not present			
Fen	0.90 ha	Not present	Not present	TR3.TN103, TR3.TN149		
Basic flush	0.04 ha	Not present	Not present	TR3.TN156		
Tall ruderals	0.05 ha	Not present	Not present	TR3.TN153		
Buildings	0.03 ha (4 no.)	0.01 ha	Not present	TR3.TN126, TR3.TN127, TR3.TN128, TR3.TN130, TR3.TN136	TR3.TN26, TR3.TN27	
Bare ground	0.06 ha	Not present	Not present			
<b>Linear habitats</b>						
Running water (mesotrophic) *	1.30 km	0.25 km	Not present	W461, W462, W463, W470, W477, W1382	W206, W207, W215	
Intact native species rich hedgerow with and without trees**	Not present	Not present	0.29 km			**WH1
Intact native species poor hedgerow with and without trees**	0.51 km	Not present	Not present	**H31, H32, H35		
Walls	0.79 km	<0.01 km	Not present			
Dry ditch	0.07 km	Not present	Not present			
<b>Trees</b>						
Scattered broadleaved trees	138 no.	34 no.	2 no.			

\* Further details of the watercourse within the Proposed Bowland Section, including descriptions and valuations, are presented at Chapter 9B and relevant Appendices.

\*\* Further details of the hedgerows within the Proposed Bowland Section, including an assessment for hedgerow importance and valuation, are presented at Appendix 9A.3.

5) Habitats adjacent to (up to 50m) and distant but within potential influence (50m to 200m) of the Proposed Bowland Section are listed at Table 2.

**Table 2: Habitats Adjacent and Offsite Relevant to the Proposed Bowland Section**

Habitats Present <50m			Habitats Present 50m-200m		
Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound
<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> <li>Broadleaved woodland plantation</li> <li>Mixed woodland plantation</li> <li>Improved grassland</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Semi-improved acid grassland</li> <li>Swamp</li> <li>Fen</li> <li>Marshy grassland</li> <li>Acid/neutral flush</li> <li>Basic flush</li> <li>Tall ruderal</li> <li>Bare ground</li> </ul>	<ul style="list-style-type: none"> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Improved grassland</li> <li>Marshy grassland</li> <li>Bare ground</li> <li>Scattered broadleaved trees</li> <li>Buildings</li> <li>Running water (mesotrophic)</li> <li>Walls</li> </ul>	<ul style="list-style-type: none"> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Improved grassland</li> <li>Bare ground</li> <li>Scattered broadleaved trees</li> <li>Scattered scrub</li> <li>Intact native species rich hedgerow</li> <li>Intact native species poor hedgerow</li> <li>Buildings</li> <li>Dry ditch</li> </ul>	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> <li>Broadleaved woodland plantation</li> <li>Mixed woodland plantation</li> <li>Improved grassland</li> <li>Semi-improved neutral grassland</li> <li>Semi-improved acid grassland</li> <li>Poor semi-improved grassland</li> <li>Fen</li> <li>Marshy grassland</li> <li>Acid/neutral flush</li> <li>Basic flush</li> <li>Swamp</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> <li>Dense / continuous scrub</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Semi-improved acid grassland</li> <li>Improved grassland</li> <li>Marshy grassland</li> <li>Acid/neutral flush</li> <li>Amenity grassland</li> <li>Scattered broadleaved trees</li> <li>Buildings</li> <li>Bare ground</li> <li>Running water</li> </ul>	<ul style="list-style-type: none"> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Improved grassland</li> <li>Tall ruderal</li> <li>Scattered broadleaved trees</li> <li>Scattered scrub</li> <li>Intact native species rich hedgerow</li> <li>Intact native species poor hedgerow</li> <li>Running water (mesotrophic)</li> <li>Dry ditch</li> </ul>

Habitats Present <50m			Habitats Present 50m-200m		
Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound	Newton-in-Bowland Compound	Lower Houses Compound	Wray Compound
<ul style="list-style-type: none"> <li>▪ Scattered broadleaved trees</li> <li>▪ Running water (mesotrophic)</li> <li>▪ Intact native species rich hedgerow</li> <li>▪ Intact native species poor hedgerow</li> <li>▪ Walls</li> <li>▪ Buildings</li> </ul>			<ul style="list-style-type: none"> <li>▪ Dense / continuous scrub</li> <li>▪ Buildings</li> <li>▪ Bare ground</li> <li>▪ Amenity grassland</li> <li>▪ Standing waterbody</li> <li>▪ Running water (mesotrophic)</li> <li>▪ Intact native species rich hedgerow</li> <li>▪ Intact native species poor hedgerow</li> <li>▪ Walls</li> <li>▪ Scattered broadleaved trees</li> </ul>	(mesotrophic) <ul style="list-style-type: none"> <li>▪ Walls</li> </ul>	

# Appendix A. Phase 1 Habitats Overview Report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Ellen Milner, <i>Principal Ecologist</i> Eve Loxham, <i>Ecologist</i>	Approved:	Claire Wilson, <i>Principal Ecologist</i> Jeremy James, <i>Principal Ecologist</i>
Report reference:	TR3 Phase 1 Habitat Overview Report V1 TR3 Phase 1 Habitat Overview Report V2	Date:	22/10/2019 23/06/2020
2 Project Drawings			
TR3 Phase 1 Plans Proposed Bowland Section Sheets 1 to 23		BOW167_HARP_9.5_PHASE 1_TR3	
3 Ecology Surveys			
Surveyors:	Eve Loxham MBiolSci (Hons), GradCIEEM Ellen Milner MA, MRes, CEnv, MCIEEM Heather Whalley BSc (Hons) Sophie King MSc, BSc Sabina Ostalowska MSc, BSc, ACIEEM Abi Hamer BSc (Hons) Catrin Watkin MRes, BSc (Hons) Philip Eades PhD, MCIEEM		
Survey date(s):	01/04/2019, 02/04/2019, 03/04/2019, 09/04/2019, 10/04/2019, 01/05/2019, 07/05/2019, 08/05/2019, 14/05/2019, 15/05/2019, 21/05/2019, 22/05/2019, 29/05/2019, 30/05/2019, 31/05/2019, 10/06/2019, 11/06/2019, 19/06/2019, 26/06/2019, 04/12/2019, 12/12/2019, 23/01/2020, 29/01/2020, 30/01/2020, 12/02/2020, 01/05/2020, 21/05/2020.		
Survey Method:	The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.		
Weather Conditions:	01/04/2019 – Cloud cover 6/8, Wind Beaufort F1, 8°C, no precipitation. 02/04/2019 – Cloud cover 8/8, Wind Beaufort F1, 8°C, intermittent showers. 03/04/2019 – Cloud cover 8/8, Wind Beaufort F1, 3°C, some sleet. 09/04/2019 – Cloud cover 4/8, Wind Beaufort F3, 8°C, dry. 10/04/2019 – Cloud cover 1/8, Wind Beaufort F2, 10°C, dry. 01/05/2019 – Cloud cover 4/8, Wind Beaufort F2, 10°C, mostly dry (occasional light rain). 07/05/2019 – Cloud cover 5/8, Wind Beaufort F 0, 9°C, light rain, some sunny spells. 08/05/2019 – Cloud cover 7/8, Wind Beaufort F4, 9°C, patchy rain. 14/05/2019 – Cloud cover 1/8, Wind Beaufort F1, 22°C, dry, sunny. 15/05/2019 – Cloud cover 3/8, Wind Beaufort F3, 19°C, dry, sunny. 21/05/2019 – Cloud cover 1/8, Wind Beaufort F3, 15°C, no precipitation. 22/05/2019 – Cloud cover 1/8, Wind Beaufort F2, 13°C, no precipitation.		

	<p>29/05/2019 – Cloud cover 8/8, Wind Beaufort F2, 11°C, no precipitation.</p> <p>30/05/2019 – Cloud cover 6/8, Wind Beaufort F2, 15°C, intermittent light rain.</p> <p>31/05/2019 – Cloud cover 8/8, Wind Beaufort F3, 19°C, intermittent heavy rain.</p> <p>10/06/2019 – Cloud cover 7/8, Wind Beaufort F1, 16°C, light rain.</p> <p>11/06/2019 – Cloud cover 8/8, Wind Beaufort F3, 14°C, patchy rain.</p> <p>19/06/2019 – Cloud cover 2/8, Wind Beaufort F1, 17°C, no precipitation.</p> <p>26/06/2019 – Cloud cover 8/8, Wind Beaufort F2, 17°C, no precipitation.</p> <p>04/12/2019 - Cloud cover 3/8, Wind Beaufort F1, 6°C, no precipitation.</p> <p>12/12/2019 - Cloud cover 8/8, Wind Beaufort F1, 5°C, light rain.</p> <p>23/01/2020 - Cloud cover 2/8, Wind Beaufort F1, 8°C, dry.</p> <p>29/01/2020 - Cloud cover 8/8, Wind Beaufort F2, 8°C, moderate rain.</p> <p>30/01/2020 - Cloud cover 8/8, Wind Beaufort F2, 8°C, dry.</p> <p>12/02/2020 - Cloud cover 4/8, Wind Beaufort F3, 6°C, no precipitation.</p> <p>01/05/2020 - Cloud cover 3/8, Wind Beaufort F3, 10°C, dry.</p> <p>21/05/2020 - Cloud cover 1/8, Wind Beaufort F1, 14°C, dry.</p>
Limitations to the survey:	<p>The surveys were carried out between April 2019 and May 2020.</p> <p>Densely planted coniferous trees, dense understory vegetation or dense scrub within some woodlands prevented a thorough internal inspection of the habitat to determine the presence of badger setts. This is not considered a significant limitation since further survey for badger sett presence is required once the development boundary/route option is finalised. The optimal time for badger sett surveys is autumn and spring. During summer, dense vegetation growth can inhibit the visibility of sett entrances. During winter badger activity is reduced. This is not considered a significant limitation due to further survey requirements as explained above.</p> <p>Summer months are considered sub-optimal for ground level roost assessment of trees (Collins, 2016). This is due to foliage obscuring parts of the tree. Where this limitation applies, further survey during the optimal months is recommended.</p> <p>Buildings were assessed from outside elevations only for bat roosting potential.</p> <p>Optimal survey months for Phase 1 Habitat Surveys vary between habitat types, e.g. woodlands are best surveyed in spring, grasslands in mid-summer and heathlands in autumn. Where habitats were not surveyed during the optimal time of year, these have been recorded within the target note as requiring further survey.</p> <p>At the edge of access boundaries, surveys of boundary features (e.g. tree lines, watercourses, hedgerows) were only possible from one elevation. Once the development boundary/route option is finalised further survey may be required.</p>
4 Ecological Designations	
Is site within close proximity to a statutory** or non-statutory^ protected site?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
SAC/SPA/ RAMSAR	<input checked="" type="checkbox"/> Bowland Fells Special Protection Area (SPA) North Pennines Dales Meadows Special Area of Conservation (SAC)
SSSI/NNR	<input checked="" type="checkbox"/> Bowland Fells SSSI Myttons Meadows SSSI Far Holme Meadow SSSI Roeburndale Woods SSSI Bell Sykes Meadow SSSI

		Robert Hall Moor SSSI Clear Beck Meadow SSSI Langcliffe Cross Meadow SSSI Field Head Meadow SSSI Strandridge Farm Pasture SSSI Barn Gill Meadow SSSI
SBI/BHS	<input checked="" type="checkbox"/>	River Hodder From Confluence with River Ribble Upstream to Cross of Greet Bridge/ Bowland Fells SSSI Boundary BHS Gamble Hole Farm Pasture BHS Goodber Common (Including Summersgill Fell and White Moss) BHS Dunsop Fell and Low Fell BHS Over Houses Great Wood BHS Upper Hindburn Valley – Grassland and Woodland Between Stairend Bridge and Botton Bridge BHS Well Beck Wood (Including Helks Home Wood and Middlefield Wood) BHS River Hindburn BHS Helks Wood BHS Mean Garth Wood BHS Swans Wood (Including Far Close Wood) BHS Fall Wood Coppice BHS Burn End Pasture BHS Over Close Wood and Proctor Wood BHS Lower Helks Pasture BHS Gibbs Wood and Bonstone Wood BHS Back Lane Roadside Verges BHS Hollinhurst Wood BHS Waddington Fell Road, Roadside Verges BHS Crag House Roadside Verges BHS Birkett Fell, Hodder Bank Fell and Mossthwaite Fell BHS Ashnott Wood BHS Bonstone Brook Pastures BHS Ashnott Meadow BHS

## 5 Habitat Summary

### Broadleaved semi-natural woodland

Three significant blocks of broadleaved semi-natural woodland are present in the survey area. The first of these was located alongside the road in the northern section of TR3 (TR3.TN13). Species present included oak (*Quercus* sp.), semi mature sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*) and beech (*Fagus sylvatica*). The ground flora is species-rich and includes wood avens (*Geum urbanum*), greater stitchwort (*Stellaria holostea*), lords-and-ladies (*Arum maculatum*), barren strawberry (*Potentilla sterilis*) and opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*).

A second block, in this case ancient woodland, occurred on the slopes of a watercourse at Well Beck Wood BHS

(TR3.TN55) and downstream at Middlefield Wood (TR3.TN81). Species included alder (*Alnus glutinosa*), rowan (*Sorbus aucuparia*), oak, ash (*Fraxinus excelsior*), and hawthorn (*Crataegus monogyna*) with a ground flora including several ancient woodland indicator species (e.g. English bluebell; *Hyacinthoides non-scripta*, common polypody; *Polypodium vulgare*, wild garlic *Allium ursinum*, wood sorrel; *Oxalis acetosella*, wood melick; *Melica uniflora*, wood speedwell; *Veronica montana*).

A third block was present along Mill Beck at Fall Wood Coppice BHS (TR3.TN65) and comprised scattered oak, ash and alder with a locally dominant patch of aspen (*Populus tremula*). The ground flora includes English bluebell, greater stitchwort and wood sorrel along with areas of bracken (*Pteridium aquilinum*).

Additional small, isolated pockets of broadleaved woodland are present in TR3 alongside roads (e.g. TR3.TN11 which is a small area of wet woodland) and watercourses (e.g. TR3.WC26, 32, 42, 34, 39 and 70).

## Plantation broadleaved woodland

This habitat is rare in the survey area and confined to two areas of plantation broadleaved woodland. One is recorded at TR3.TN119 and includes immature alder, silver birch, ash and oak planting surrounding a small watercourse (TR3.WC70). The second is recorded alongside the River Hodder (TR3.TN155) at the southern end of the survey area close to Newton-in-Bowland. The canopy is dominated by beech with ash, wych elm (*Ulmus glabra*), hazel (*Corylus avellana*) and alder. The understory is dominated by grasses with English bluebell, lords and ladies and lesser celandine (*Ficaria verna*).

## Mixed plantation woodland

This habitat is rare in TR3, with two blocks recorded. The first is a small, recently-planted woodland at the southern survey area; TR3.TN108. Tree guards were still present at the time of survey, and species included alder, sessile oak and Scots pine (*Pinus sylvestris*). The second is a block on the northern bank of the River Hodder; TR3.TN133. Here the species recorded include ash, hazel, oak, alder, sycamore and conifer species. There is an abundance of fallen deadwood and some supplementary planting of trees with stakes and guards still present.

## Coniferous plantation woodland

This habitat is rare in TR3 being present in two locations. The first is at Higher Thrushgill Plantation (TR3.TN70). This large block of woodland was coniferous with some recently planted broadleaf specimens present along the north-western edge. A relatively diverse ground flora was also present, particularly in linear gulleys which were vegetated with *Sphagnum* mosses. A second block of coniferous woodland is recorded north of Newton-in-Bowland (no Target Note) which is on a steep south-eastern facing slope and borders Dunsop Fell and Low Fell BHS.

## Dense/continuous scrub

On its own, dense scrub is rarely recorded within TR3. However dense scrub is frequently recorded as an understory habitat within woodland blocks and areas inaccessible for grazing. This habitat comprises dominant hawthorn and bramble (*Rubus fruticosus* agg.) along with holly (*Ilex aquifolium*), elder (*Sambucus nigra*), willow (*Salix* sp.), and honeysuckle (*Lonicera periclymenum*). This habitat was located on a road verge which was botanically interesting (TR3.TN21).

## Scattered scrub

Scattered scrub was frequent within the survey area and associated with roadside verges, overgrown/unkempt hedgerows at field boundaries, along watercourses, within the understory of woodlands and areas inaccessible for grazing. Species recorded include holly (*Ilex aquifolium*), elder (*Sambucus nigra*), willow (*Salix* sp.), hawthorn, bramble, gorse (*Ulex europaeus*) and honeysuckle (*Lonicera periclymenum*).

## Scattered trees

Scattered trees were found frequently, particularly alongside roads, where they often form standard trees within hedgerows or other boundary features. Several trees present were significant in age with abundant features providing habitat opportunities for fauna.

Tree species were predominantly ash and oak but included sycamore, alder, beech, rowan, elder, hawthorn, horse chestnut (*Aesculus hippocastanum*), and pine (*Pinus* sp.).

## Semi-improved acid grassland

Acid grassland was recorded frequently, typically as an intricate mosaic with other upland acid habitats, most notably heath. The typical species composition of these grasslands includes abundant bryophytes along with sheep's fescue (*Festuca ovina*), purple moor grass (*Molinia caerulea*), wavy-hair grass (*Deschampsia flexuosa*), mat grass (*Nardus stricta*) and tormentil (*Potentilla erecta*). Much of this habitat is unfenced upland grazing land and forms discrete areas of the Goodber Common (Including Summersgill Fell and White Moss) BHS. This habitat also occurred on un-grazed



<p>banks, e.g. TR3.TN51, 58, 63, 64, 69, 72 and 134).</p> <p>In the northern sections of TR3 where a small overlap occurs with the boundary of Dunsop Fell and Low Fell BHS and Bowland Fells SSSI and SPA, acid grassland forms extensive areas in a mosaic with heath.</p>
<p><b>Neutral semi-improved grassland</b></p> <p>Semi-improved neutral grassland was found frequently along road verges and adjacent to watercourses, e.g. TR3.TN29, 77 and 154). Patches were also present within inaccessible parts of grazed grasslands such as steep slopes or areas absent from fertilization (e.g. TR3.TN82 and 83).</p> <p>Species rich hay meadows were not frequent within the survey area but occurred both in northern (TR3. TN60, 68 and 78) and southern sections (TR3.TN102). Species present included pignut (<i>Conopodium majus</i>), yellow rattle (<i>Rhinanthus minor</i>), sweet vernal grass (<i>Anthoxanthum odoratum</i>), crested dog's-tail (<i>Cynosurus cristatus</i>) and meadow foxtail (<i>Alopecurus pratensis</i>).</p>
<p><b>Unimproved acid grassland</b></p> <p>Acid grassland was recorded frequently, typically as a component of mosaics with other upland acid habitats, most notably heath. The typical species composition of these grasslands includes abundant bryophytes along with sheep's fescue, purple moor grass, wavy-hair grass, and tormentil. Much of this habitat is unfenced upland grazing land and forms discrete areas of the Goodber Common (Including Summersgill Fell and White Moss) BHS (e.g. TR3.TN42).</p> <p>In the northern sections of TR3 where a small overlap occurs with the boundary of Dunsop Fell and Low Fell BHS and Bowland Fells SSSI and SPA, acid grassland forms extensive areas in a mosaic with heath (TR3.TN87).</p>
<p><b>Poor semi-improved grassland</b></p> <p>Species poor semi-improved grassland is the dominant habitat in the southern area of TR3, and is also frequent in the northern area, where it is present as sheep or cattle grazed pasture. Soft rush commonly occurs within the grasslands. This habitat was frequently target noted due to the identification of ground nesting birds or brown hare.</p>
<p><b>Improved grassland</b></p> <p>Improved grassland was present in several locations in northern sections of the survey area and occurred in combination with species poor semi-improved neutral grassland.</p>
<p><b>Marshy grassland</b></p> <p>Marshy grassland was frequent throughout the survey area, usually occurring in small patches associated with ditches, watercourses (e.g. TR3.TN74 and 146), and at the base of slopes where run off has resulted in waterlogged ground conditions. Areas were typically not species rich and included species such as soft rush, marsh-bedstraw (<i>Galium palustre</i>) and marsh thistle (<i>Cirsium palustre</i>).</p> <p>More significant areas occurred north of the wooded corridor of Well Beck (TR3.TN54), as a mosaic with acid grassland, and also associated with Goodber Common BHS (TR3.TNs32, 38, 42, 43, 49 and 140). Species present included common lousewort (<i>Pedicularis sylvatica</i>) and marsh pennywort (<i>Hydrocotyle vulgaris</i>). Further significant stands were also present alongside a tributary to Mill Beck. Opposite leaved golden saxifrage (<i>Chrysosplenium oppositifolium</i>) greater bird's-foot trefoil (<i>Lotus pedunculatus</i>) and meadowsweet (<i>Filipendula ulmaria</i>) were abundant in this area. Marshy grassland was also recorded within the Bowland Fells SSSI survey area, e.g. TR3.TN87, 89 and 90, forming part of a mosaic of heathland habitats.</p> <p>Small areas of species-rich marshy grassland were also recorded at the fringes of fen habitat (TR3.TN103) and surrounding spring heads (TR3.TN156). These patches tend to be more species-rich and include species such as meadowsweet, brooklime, hairy sedge, ragged robin, common sedge, meadow vetchling, soft rush and hard rush.</p>
<p><b>Continuous bracken</b></p> <p>Continuous bracken (<i>Pteridium aquilinum</i>) cover was extensive within some habitats in TR3 sometimes forming locally dominant stands within acid grassland or heath mosaics, e.g. TR3.TN85 and 87 which are within Goodber Common BHS.</p> <p>There is also significant bracken cover noted at TR3.TN113 within marshy grassland which is at the border of Dunsop Fell and Low Fell.</p>
<p><b>Tall ruderal</b></p> <p>Tall ruderal vegetation formed rare limited stands within the survey area most often associated with disturbed ground and on roadside verges. Species present included broad-leaved dock (<i>Rumex obtusifolius</i>), rosebay willowherb (<i>Chamaenerion angustifolium</i>) and creeping thistle (<i>Cirsium arvense</i>).</p>

<p><b>Dry dwarf shrub heath</b></p> <p>Extensive areas of dry dwarf shrub heath were noted within the mosaic of habitats recorded within Bowland Fells SSSI at TR3.TN86 and 88. These habitats are dominated by ling heather, with bilberry, <i>Sphagnum</i> mosses, hare's tail cotton grass, wavy hair grass, heath bedstraw, bracken, tormentil and heath rush also noted.</p>
<p><b>Dry heath/acid grassland mosaic</b></p> <p>This habitat occurs frequently in the southern section of the survey area in combination with wet heath acid grassland mosaic on Dane Hill and Low Fell (TR3.TN87). Typical species present included bilberry (<i>Vaccinium myrtillus</i>), cross-leaved heath (<i>Erica tetralix</i>), ling heather (<i>Calluna vulgaris</i>) and purple moor grass.</p> <p>A section of this habitat was present within Dunsop Fell and Low Fell BHS and within Bowland Fells SSSI and SPA.</p>
<p><b>Wet heath/acid grassland mosaic</b></p> <p>Wet heath acid grassland mosaic habitat was rare in the northern section of TR3; an area was present forming part of the Goodber Common (Including Summersgill Fell and White Moss) BHS. Species included hare's-tail cotton grass (<i>Eriophorum vaginatum</i>), cranberry (<i>Vaccinium oxycoccus</i>), <i>Sphagnum</i> mosses and common spike-rush (<i>Eleocharis palustris</i>).</p> <p>This habitat was very frequent in the southern section of TR3 in combination with dry heath acid grassland mosaic on Dane Hill and Low Fell BHS and within Bowland Fells SSSI and SPA.</p>
<p><b>Acid/neutral flush</b></p> <p>Flush habitats were abundant within upland sections of TR3 occurring as a complex with other upland habitats and typically associated with watercourses or seepages (e.g. TR3.TN32, 53, 132, 142). Species noted included soft rush, marsh bedstraw (<i>Galium palustre</i>), <i>Polytrichum</i> moss species and numerous <i>Sphagnum</i> moss species. This habitat in TR3 formed part of the Goodber Common (Including Summersgill Fell and White Moss) BHS.</p> <p>A small, linear area of flush habitat is also recorded surrounding TR3.WC83 and comprises lesser pond sedge, marsh marigold, meadowsweet, water mint and water cress.</p>
<p><b>Valley mire</b></p> <p>Found rarely within TR3 in small pockets along watercourses where inundation was likely, e.g. TR3.TN35 and 48. Typical species recorded include <i>Sphagnum</i> mosses, hare's tail cotton grass, common sedge, cranberry and <i>Polytrichum</i> mosses.</p>
<p><b>Species rich spring, fen and mire mosaic habitat</b></p> <p>A particularly species rich mosaic habitat was recorded to the west of Newton-in-Bowland (TR3.TN103), comprising species rich spring, fen and mire habitat. This habitat include dominant hard rush (<i>Juncus inflexus</i>), blunt flowered rush (<i>Juncus subnodulosus</i>), creeping buttercup, cuckooflower, crested dog's-tail, marsh thistle, Yorkshire fog, fescue sp., meadowsweet (<i>Filipendula ulmaria</i>), marsh bedstraw, common sedge (<i>Carex nigra</i>), carnation sedge (<i>Carex panicea</i>), common mouse ear (<i>Cerastium fontanum</i>), brooklime (<i>Veronica beccabunga</i>), water mint (<i>Mentha aquatica</i>), water avens (<i>Geum rivale</i>), horsetail sp. (<i>Equisetum</i> sp.), valerian (<i>Valeriana officinalis</i>), quaking grass (<i>Briza media</i>), creeping cinquefoil (<i>Potentilla reptans</i>), silverweed, ragged robin (<i>Lychnis flos-cuculi</i>), bogbean (<i>Menyanthes trifoliata</i>), spike rush sp., dactylorhiza sp., marsh arrowgrass (<i>Triglochin palustris</i>) and marsh helleborine (<i>Epipactis palustris</i>). This area is of significant botanical interest and has recently been designated as Gamble Hole Pastures BHS.</p> <p>An additional, small area of fen was recorded alongside TR3.WC84 at TR3.TN149 which is less-species rich but includes lesser pond sedge, marsh marigold and meadowsweet.</p>
<p><b>Standing water</b></p> <p>Ponds are rare in TR3, with three mapped within the survey area. TR3.P5b is a small pooling of water along TR3.WC6. TR3.P5c has some flow and well-developed aquatic vegetation including water starwort species (<i>Callitriche</i> sp.), ivy-leaved crowfoot (<i>Ranunculus hederaceus</i>) and water mint (<i>Mentha aquatica</i>). TR3.P49 is a large, open and man-made pond set within grazed fields close to Newton-in-Bowland. This pond also has a degree of flow and is connected to TR3.WC75 and 77.</p> <p>A large number of ponds are also within 250 m of the survey boundary, often recently excavated and within farming landscapes. Several areas of standing water visible on Magic (<a href="https://magic.defra.gov.uk/MagicMap.aspx">https://magic.defra.gov.uk/MagicMap.aspx</a>) particularly close to Newton-in-Bowland, were discovered to be dry and vegetated with marshy grassland.</p>
<p><b>Running water</b></p>

86 watercourses were present in TR3. The majority were well vegetated ditches and minor watercourses supporting species such as water crowfoot (*Ranunculus aquatilis*), floating sweet grass (*Glyceria fluitans*), blinks (*Montia fontana*) and water starwort species. Often a dense fringing band of soft rush was present that, in some cases, caused the channel to appear indistinct due to dense growth. A small number of ditches were almost dry at the time of survey, with limited pockets of stagnant water.

Well Beck (TR3.WC32) and Mill Beck (TR3.WC37), tributaries of the River Hindburn BHS, also occurred within TR3 and were shallow, rocky, and shaded by adjacent woodland. Areas of undercut bank, exposed roots and fallen deadwood were present in addition to bryophyte rich sections and varied substrate.

The River Hodder is present in the southern survey area of TR3 (TR3.WC80). The river has mature woodland on the northern banks and sheep-grazed pasture on the southern banks. A small number of minor tributaries and ditches flow into this River (e.g. TR3.WC66 and 84).

## Amenity grassland

Amenity grassland is rare in TR3 comprising of a roadside garden associated with residential properties in the northern section.

## Introduced shrub

Introduced shrub was limited in the survey area. A stand of (*Cotoneaster* sp.) and a stand of (*Montbretia*) were present opposite Lane House, a residential property, within a road section in the north of TR3 (TR3.TN12). A stand of Japanese rose (*Rosa rugosaa*) was also identified within TR3.H27 at TR3.TN114. These species are listed as invasive species on Schedule 9 of the Wildlife and Countryside Act 1981, as amended.

## Species-poor defunct hedgerow

A small number of hawthorn hedgerows were present in the survey area which have become gappy and defunct due to lack of management. These features are typically unfenced and therefore grazed and poached at the base, with no significant ground flora.

## Species rich hedgerow with trees

Hedgerows are present within TR3 along the roads and as boundaries to grazed fields. The majority of the hedgerows were recorded in the northern sections of TR3. Many of these are classified as 'Important' under The Hedgerow Regulations 1997. Hedgerows were usually hawthorn dominated with abundant additional species including ash, holly, hazel, rowan, gorse (*Ulex europaeus*), sycamore, elder, willow sp., yew (*Taxus baccata*), blackthorn (*Prunus spinosa*) and dog rose (*Rosa canina*). Ground flora within these historical hedgerows were species rich and include species such as lords-and-ladies (*Arum maculatum*), male-fern (*Dryopteris filix-mas*), wild strawberry (*Fragaria vesca*), wood avens (*Geum urbanum*), dog's mercury (*Mercurialis perennis*), hart's tongue (*Asplenium scolopendrium*), polypody (*Polypodium vulgare*), barren strawberry (*Potentilla sterilis*), wood sage (*Teucrium scorodonia*) and common dog violet (*Viola riviniana*) commonly occurring.

The most diverse examples of hedgerows have up to ten woody species per 30 m section and ten notable ground flora species – for example TR3.H9 supports holly, hazel, hawthorn, ash, holly, blackthorn, pedunculate oak, rose species, elder and rowan with lords-and-ladies, male-fern, wild strawberry, wood avens, dog's mercury, hart's tongue, polypody, barren strawberry, wood sage and common dog violet. Some of the historical hedgerows have had fairly recent supplementary planting to fill in gaps, this has been undertaken with a range of native species.

Standard trees were common and often of significant age, typically being ash, sycamore and oak.

## Species poor hedgerow with trees

Species poor hedgerows commonly comprise hawthorn, hazel and holly with grassy or ruderal ground flora. In accordance with The Hedgerow Regulations 1997, some of the species-poor hedgerows are classified as important. This is due to their age and presence of other qualifying features. For example TR3.H13 has four woody species however due to the age and presence of English bluebell, it qualifies.

## Buildings

A small number of buildings were present within the survey area. Some were operational, and some were disused or dilapidated barns and agricultural buildings. Occupied residential buildings were also present, some associated with farms.

## Bare ground

Bare ground includes hardstanding, gravel and bare earth. It is infrequent in the survey area, largely associated with roads, recently disturbed ground, farm tracks and parking areas etc.

Dry stone walls
A number of lichen-rich dry-stone walls were recorded.
Other
A number of spoil heaps were recorded within the southern area of TR3 (e.g. TR3.TN106 and 115). These were associated with recently disturbed ground. Some spoil had scattered ephemeral / short perennial vegetation including bittercress sp., colts foot and some grasses.
TR3.TN132 is a fenced hay bale storage area.

## References

JNCC (1993 revised 2010) *Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.

CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.




Collins (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

# Appendix B. Target Notes Report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Ellen Milner, <i>Principal Ecologist</i> Eve Loxham, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR3 Target Note Report V1 TR3 Target Note Report V2	Date:	23/10/2019 16/06/2020
2 Project Drawings			
TR3 Phase 1 Plans Proposed Bowland Section Sheets 1 to 21		BOW167_HARP_9.5_Phase 1_TR3	
3 Ecology Surveys			
Surveyors:	Eve Loxham MBiolSci (Hons), GradCIEEM Ellen Milner MA, MRes, CEnv, MCIEEM Heather Whalley BSc (Hons) Sophie King MSc, BSc Sabina Ostalowska MSc, BSc, ACIEEM Abi Hamer BSc (Hons) Catrin Watkin MRes, BSc (Hons) Philip Eades PhD, MCIEEM		
Survey date(s):	01/04/2019, 02/04/2019, 03/04/2019, 09/04/2019, 10/04/2019, 01/05/2019, 07/05/2019, 08/05/2019, 14/05/2019, 15/05/2019, 21/05/2019, 22/05/2019, 29/05/2019, 30/05/2019, 31/05/2019, 10/06/2019, 11/06/2019, 19/06/2019, 26/06/2019, 04/12/2019, 12/12/2019, 23/01/2020, 29/01/2020, 30/01/2020, 12/02/2020, 01/05/2020, 21/05/2020.		
Survey Method:	The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.  Buildings and structures were assessed in accordance with Collins, 2016 with regard to the potential to support bat roosts.  Habitat Condition has been assessed in accordance with Natural England Biodiversity Metric (July 2019).		
Weather Conditions:	01/04/2019 – Cloud cover 6/8, Wind Beaufort F1, 8°C, no precipitation. 02/04/2019 – Cloud cover 8/8, Wind Beaufort F1, 8°C, intermittent showers. 03/04/2019 – Cloud cover 8/8, Wind Beaufort F1, 3°C, some sleet. 09/04/2019 – Cloud cover 4/8, Wind Beaufort F3, 8°C, dry. 10/04/2019 – Cloud cover 1/8, Wind Beaufort F2, 10°C, dry. 01/05/2019 – Cloud cover 4/8, Wind Beaufort F2, 10°C, mostly dry (occasional light rain). 07/05/2019 – Cloud cover 5/8, Wind Beaufort 0, 9°C, light rain, some sunny spells. 08/05/2019 – Cloud cover 7/8, Wind Beaufort F4, 9°C, patchy rain. 14/05/2019 – Cloud cover 1/8, Wind Beaufort F1, 22°C, dry, sunny.		

	<p>15/05/2019 – Cloud cover 3/8, Wind Beaufort F3, 19°C, dry, sunny.</p> <p>21/05/2019 – Cloud cover 1/8, Wind Beaufort F3, 15°C, no precipitation.</p> <p>22/05/2019 – Cloud cover 1/8, Wind Beaufort F2, 13°C, no precipitation.</p> <p>29/05/2019 – Cloud cover 8/8, Wind Beaufort F2, 11°C, no precipitation.</p> <p>30/05/2019 – Cloud cover 6/8, Wind Beaufort F2, 15°C, intermittent light rain.</p> <p>31/05/2019 – Cloud cover 8/8, Wind Beaufort F3, 19°C, intermittent heavy rain.</p> <p>10/06/2019 – Cloud cover 7/8, Wind Beaufort F1, 16°C, light rain.</p> <p>11/06/2019 – Cloud cover 8/8, Wind Beaufort F3, 14°C, patchy rain.</p> <p>19/06/2019 – Cloud cover 2/8, Wind Beaufort F1, 17°C, no precipitation.</p> <p>26/06/2019 – Cloud cover 8/8, Wind Beaufort F2, 17°C, no precipitation.</p> <p>04/12/2019 - Cloud cover 3/8, Wind Beaufort F1, 6°C, no precipitation.</p> <p>12/12/2019 - Cloud cover 8/8, Wind Beaufort F1, 5°C, light rain.</p> <p>23/01/2020 - Cloud cover 2/8, Wind Beaufort F1, 8°C, dry.</p> <p>29/01/2020 - Cloud cover 8/8, Wind Beaufort F2, 8°C, moderate rain.</p> <p>30/01/2020 - Cloud cover 8/8, Wind Beaufort F2, 8°C, dry.</p> <p>12/02/2020 - Cloud cover 4/8, Wind Beaufort F3, 6°C, no precipitation.</p> <p>01/05/2020 - Cloud cover 3/8, Wind Beaufort F3, 10°C, dry.</p> <p>21/05/2020 - Cloud cover 1/8, Wind Beaufort F1, 14°C, dry.</p>
Limitations to the survey:	<p>The surveys were carried out between April 2019 and May 2020.</p> <p>Densely planted coniferous trees, dense understory vegetation or dense scrub within some woodlands prevented a thorough internal inspection of the habitat to determine the presence of badger setts. This is not considered a significant limitation since further survey for badger sett presence is required once the development boundary/route option is finalised. The optimal time for badger sett surveys is autumn and spring. During summer, dense vegetation growth can inhibit the visibility of sett entrances. During winter badger activity is reduced. This is not considered a significant limitation due to further survey requirements as explained above.</p> <p>Summer months are considered sub-optimal for ground level roost assessment of trees (Collins, 2016). This is due to foliage obscuring parts of the tree. Where this limitation applies, further survey during the optimal months is recommended.</p> <p>Buildings were assessed from outside elevations only for bat roosting potential.</p> <p>Optimal survey months for Phase 1 Habitat Surveys vary between habitat types, e.g. woodlands are best surveyed in spring, grasslands in mid-summer and heathlands in autumn. Where habitats were not surveyed during the optimal time of year, these have been recorded within the target note as requiring further survey.</p> <p>At the edge of access boundaries, surveys of boundary features (e.g. tree lines, watercourses, hedgerows) were only possible from one elevation. Once the development boundary/route option is finalised further survey may be required.</p>



4 Target notes	
TR3.TN1	 <p>A small area of broadleaved trees and scrub adjacent to a hedgerow on a dry, gentle, west facing slope. The trees are young and semi mature with some scrub. Some of the trees have sparse ivy (<i>Hedera helix</i>) covering. Species present include hazel (<i>Corylus avellana</i>), sycamore (<i>Acer pseudoplatanus</i>), ash (<i>Fraxinus excelsior</i>), holly (<i>Ilex aquifolium</i>), hawthorn (<i>Crataegus monogyna</i>) and gorse (<i>Ulex europaeus</i>). The ground flora is dominated by ivy with lesser celandine (<i>Ficaria verna</i>) and less frequently, lords-and-ladies (<i>Arum maculatum</i>). There are also piles of moss covered brash. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN2	 <p>Species-rich verge on wide hedge bank with abundant dog's mercury (<i>Mercurialis perennis</i>), common bistort (<i>Bistorta officinalis</i>), cow parsley (<i>Anthriscus sylvestris</i>), lesser celandine, meadowsweet (<i>Filipendula ulmaria</i>), bush vetch (<i>Vicia sepium</i>), common nettle (<i>Urtica dioica</i>), cleavers (<i>Galium aparine</i>), lords-and-ladies, Yorkshire fog (<i>Holcus lanatus</i>), red fescue (<i>Festuca rubra</i>), barren strawberry (<i>Potentilla sterilis</i>), great willowherb (<i>Epilobium hirsutum</i>), hogweed (<i>Heracleum sphondylium</i>), wood avens (<i>Geum urbanum</i>) and bracken (<i>Pteridium aquilinum</i>). Abundant small mammal holes within the verge.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN3	



Curlew (*Numenius arquata*) calling and displaying in species-poor grassland. Ground nesting bird habitat. Potential for net gain through grassland management to more species-rich grassland.

Habitat Condition: Not applicable (no assessment required).

TR3.TN4



Line of scattered holly, hawthorn and further east, blackthorn (*Prunus spinosa*) scrub running east-west, with a single, mature ivy clad oak (*Quercus* sp.) (negligible bat potential). Further east, beyond the survey area, this feature grades into a hedgerow which is tall, outgrown and unmanaged to approximately 4 m. There is no notable ground flora as the vegetation at the base of the scrub line is sheep grazed, as is the adjoining field of species-poor neutral grassland. The feature is fenced to the south but not to the north. There is potential for net gain by planting up the gaps within this feature with native scrub species. Potential for nesting birds foraging and commuting bats, amphibians and small mammals.

Habitat Condition (provisional): Poor (Score 1)

TR3.TN5



A group of roadside sycamore trees (negligible bat potential) and hawthorn, holly and elder (*Sambucus nigra*) scrub on a roadside bank which has a ground flora of abundant dog's mercury, harts tongue fern (*Asplenium scolopendrium*), lords-and-ladies, ivy, cleavers, lesser celandine, honeysuckle (*Lonicera periclymenum*) and cow parsley. Potential for nesting birds and roosting, commuting and foraging bats.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN6



A line of five mature ash trees alongside a drystone wall and wide grass verge with abundant springy turf moss (*Rhytidiadelphus squarrosus*) which may be managed as amenity grassland. The verge supports species such as ivy, lesser celandine, cow parsley, creeping buttercup (*Ranunculus repens*), dock (*Rumex* sp.) and dandelion (*Taraxacum officinale*). This feature forms the boundary of farm property. The trees are mature but not of significant size, with some sparse ivy cladding on the main trunks. The trees have been assessed separately for bat roost potential. Potential for nesting birds and commuting bats.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN7



A large, stone farm building with a partially collapsed roof and ivy cladding which provides potential bat roosting habitat and potential for birds associated with the building including barn owl (*Tyto alba*). The southern part of the building has a pitched, slate tiled roof. The roof is collapsed in places and is covered in parts with corrugated metal sheeting but is still open to the elements. There are gaps in the mortar in the walls providing potential access gaps/roosting crevices for bats. Overall the building is assessed to have moderate roosting potential for bats.

Habitat Condition: Not applicable (no assessment required)

TR3.TN8



Grassland which appeared less improved than those in surrounding area during Spring surveys (early April). This area was checked during peak flowering season and found not to be species-rich. Potential for net gain through appropriate management to develop a more species-rich sward.

Habitat Condition (provisional): Poor (Score 1)

TR3.TN9





Sheep grazed species-poor, semi-improved neutral grassland with significant rush (*Juncus* sp.) cover. It has a gently sloping topography and is likely to be suitable for ground nesting bird species.

Habitat Condition: Not applicable (no assessment required).

TR3.TN10



Displaying lapwing (*Vanellus vanellus*) noted over species-poor, semi-improved neutral grassland. Potential ground nesting bird habitat. Potential for net gain through management to develop more species diverse grassland sward.

Habitat Condition: Not applicable (no assessment required).

TR3.TN11



Small area of wet woodland alongside a minor road. The woodland is positioned on a gentle slope away from the road and includes semi-mature trees and scrub. The ground is damp and drains down the slope to a depression. Canopy species include alder (*Alnus glutinosa*), willow (*Salix* sp.), ash, elder and silver birch (*Betula pendula*). The understory comprises hawthorn, holly, willow, bramble (*Rubus fruticosus* agg.), honeysuckle and rose (*Rosa* sp.). The ground flora comprises common nettle, red campion (*Silene dioica*), wood avens, tufted hair grass (*Deschampsia cespitosa*), lords-and-ladies and meadowsweet. There are brush piles on the ground. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.

Habitat Condition (provisional): Moderate (Score 2).

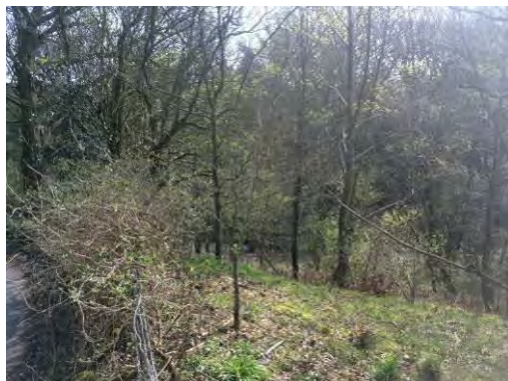
TR3.TN12



Stand of potential *Cotoneaster* and a stand of Montbretia (*Crocasmia x crocosmiiflora*) (Schedule 9 invasive species). These specimens are beside the road, opposite a residential property so ornamentals may have been planted or are garden escapes.

Habitat Condition: Not applicable (no assessment required).

TR3.TN13



Broadleaved woodland on a gentle south-east facing slope. The woodland is bordered on the roadside by an old mossy dry-stone wall. The woodland has a mixed age structure of trees with some large mature oaks, along with semi mature sycamore, silver birch and beech (*Fagus sylvatica*). The shrub layer comprises holly, elder, hawthorn and hazel. There is some natural regeneration as saplings are present and some tree guards are also present in the eastern section, indicating recent planting. The ground flora is composed of ivy, wood avens, lesser celandine, honeysuckle, red campion, garlic mustard (*Alliaria petiolata*), herb Robert (*Geranium robertianum*), greater stitchwort (*Stellaria holostea*), barren strawberry, lords-and-ladies and, at the base of slope, opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*). A small stream runs through the woodland (TR3.W5) and east of watercourse carpets of bluebell (*Hyacinthoides non-scripta*) area present. There are also numbered bird nesting boxes in this area. The woodland continues along edge of the road south, sloping steeply down (south west facing slope) to a watercourse. Holly scrub is more abundant in this section on the steep slope. Potential for nesting birds, roosting, foraging and commuting bats. Potential for badger though no evidence found. Potential for small mammals and as terrestrial habitat for amphibians.

Habitat Condition (provisional): Good (Score 3).

TR3.TN14



Sloping roadside bank approximately 1 m to 1.5 m with interesting flora of pignut (*Conopodium majus*), barren strawberry, wood sage (*Teucrium scorodonia*), wood sorrel (*Oxalis acetosella*), bluebell, wood avens, lesser celandine, field woodrush (*Luzula campestris*), germander speedwell (*Veronica chamaedrys*) and broad buckler fern (*Dryopteris dilatata*). Scattered scrub of holly, hawthorn and honeysuckle is also present. Potential for nesting birds, small mammals and as terrestrial habitat for amphibians.

Habitat Condition (provisional): Good (Score 3).






TR3.TN15

No photo

Species-poor semi-improved grassland with pair of oystercatchers (*Haematopus ostralegus*) and calling curlew. Potential for net gain through management to develop a more species-rich grassland.

Habitat Condition: Not applicable (no assessment required).



TR3.TN16	
<p>Steep bank to 2.5 m tall, south-west facing on a sharp bend in the road. Greater stitchwort, wood sage, bluebell, foxglove, ivy, creeping buttercup, wood avens, hogweed, Yorkshire fog, young fern fronds, red fescue (<i>Festuca rubra</i>), cow parsley, lesser celandine, garlic mustard, common nettle, cleavers, herb Robert and broad buckler fern are present. A mammal run was noted beneath a post and wire fence. To the north it transitions to a line of roadside trees and scrub including ash, holly, hawthorn, with the ground flora dominated by bluebell along with barren strawberry, bush vetch and violet (<i>Viola</i> sp.) Small mammal runs throughout. Potential nesting bird habitat and bat roosting and commuting habitat. Could also provide suitable terrestrial habitat for amphibians and habitat for small mammals.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN17	 
<p>A line of roadside trees and scrub on a steep south-westerly bank. Canopy species include ash, sycamore, silver birch, hazel and oak. The understory includes holly, hawthorn, honeysuckle and bramble. There is some evidence of natural regeneration. The ground flora is patchy, mossy and bare in places but includes occasional ivy, bluebell, lords-and-ladies, garlic mustard, rose sp., lesser celandine, common dog violet, wild strawberry (<i>Fragaria vesca</i>), herb Robert, wood sage, primrose (<i>Primula vulgaris</i>), red campion, foxglove (<i>Digitalis purpurea</i>), nipplewort (<i>Lapsana communis</i>), broad buckler fern, greater stitchwort, bush vetch, germander speedwell and wood sorrel. There are mammal pathways throughout some of which enter nearby fields under the wire fence. Potential nesting bird habitat and bat roosting, foraging and commuting habitat. Could also provide suitable terrestrial habitat for amphibians and habitat for small mammals.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN18	 
<p>A narrow band of roadside woodland. This habitat is on level ground with a ditch along the roadside edge (TR3.W3). Canopy species include oak, rowan (<i>Sorbus aucuparia</i>), ash, willow and silver birch. The understory includes holly,</p>	

hawthorn and bramble. The ground flora is composed of rush, cow parsley, ivy, meadowsweet, creeping buttercup, red campion, mosses, lesser celandine, hedge woundwort (*Stachys sylvestris*), rosebay willowherb (*Chamerion angustifolium*) and great willowherb. To the north-west the woodland splits and transitions into two separate mature tree lines. Between the tree lines the habitat is grassland dominated by tufted hair grass. Potential nesting bird habitat, bat roosting, commuting and foraging potential. Could also provide suitable terrestrial habitat for amphibians

Habitat Condition (provisional): Moderate (Score 2)

TR3.TN19



Grazed pasture with a high percentage of rushes with a pair of displaying lapwing, curlew calling and four oystercatchers flushed during the survey. The percentage of rush cover is 50 to 60 %, mainly soft rush but some hard rush (*Juncus inflexus*) also present. This habitat is on fairly level ground. Ground nesting bird habitat. The habitat also has potential for brown hare (*Lepus europaeus*) laying up sites. Potential for net gain in this section by planting hedgerows and reinstating two dried up ponds.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN20



Improved grazed pasture on fairly level ground. A mixed flock of 40 to 50 fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*). Potential ground nesting bird habitat/passage and foraging habitat.

Habitat Condition: Not applicable (no assessment required).

TR3.TN21



Wide roadside verge vegetated with tall ruderals, scrub and a small number of trees. The verge is approximately 4 m wide and separated from the adjacent improved grassland by a post and wire fence. The verge is mounded and uneven. The tall ruderal vegetation comprises dominant broad-leaved dock (*Rumex obtusifolius*), lesser burdock (*Arctium minus*),



cow parsley, creeping buttercup, common nettle, common sorrel (*Rumex acetosa*), hogweed, cleavers, garlic mustard, dandelion, bent grass (*Agrostis* sp.), cock's-foot (*Dactylis glomerata*) and soft rush (*Juncus effusus*). There is also patchy bramble, with occasional honeysuckle. Scrub comprises hawthorn, elder, holly and willow with two small scrubby ash trees (negligible bat roost potential). The majority of scrub is along the fence line and is possibly an old, outgrown hedgerow. Potential reptile (slow worm (*Anguis fragilis*)) habitat if present in the area. Potential for nesting birds, and potential terrestrial habitat for amphibians.

Habitat Condition: Poor (Score 1)

TR3.TN22



Species-poor semi-improved grassland with two pairs of oystercatchers using the dry stone wall as post to call from. Potential for net grain through management to a more species diverse grassland sward.

Habitat Condition: Not applicable (no assessment required).

TR3. TN23



Scattered rushes within a species-poor semi-improved large open field with at least two lapwing pairs and calling skylark (*Alauda arvensis*). Anecdotal evidence from a member of public who lives nearby noted that a large flock of golden plover (*Pluvialis apricaria*) were present within the field during the last week of March and there are also common sightings of meadow pipit (*Anthus pratensis*). Potential ground nesting bird/passage and foraging habitat. Potential for brown hare laying up sites.

Habitat Condition: Not applicable (no assessment required).

TR3.TN24



Species-poor semi-improved, sheep grazed grassland, on fairly level ground with pair of skylark and snipe (*Gallinago gallinago*). Potential ground nesting bird habitat.

Habitat Condition: Not applicable (no assessment required).

TR3.TN25



Brown hare flushed from tussocks of soft rush within species-poor semi-improved grassland. This grassland is located on level ground. There is more extensive areas of rush cover nearby, associated with a watercourse but no hedgerows. Occasional scrub may however, provide cover for the species. Potential ground nesting bird habitat.

Habitat Condition: Not applicable (no assessment required).

TR3.TN26



Single storey, small brick operational building with concrete render which is peeling/falling off (no significant crevices). The building has a pitched, slate roof and timber louvred windows on the northern and southern elevations. The roof edge is filled with mortar. Hirundine nests observed on the eastern corner and northern elevation. The building is assessed as having negligible bat roosting potential.

Habitat Condition: Not applicable (no assessment required).

TR3.TN27





A single storey, modern stone operational building with a cat slide, slate tiled roof. A hirundine nest was observed at the eaves. The building has timber louvred vented windows. It is in a very good state of repair and overall it is assessed as having negligible bat roost potential.

Habitat Condition: Not applicable (no assessment required).

TR3.TN28



Rookery (*Corvus frugilegus*) within oak tree within sheep-grazed field.

Habitat Condition: Not applicable (no assessment required).

TR3.TN29



Species-rich trackside verge (semi-improved neutral grassland) with greater stitchwort, bluebell, pignut, bramble, dandelion, cleavers, common sorrel, violet sp., bittercress (*Cardamine* sp.), wood avens, creeping buttercup, lesser celandine, garlic mustard, daffodil (*Narcissus* sp.), common nettle and common male fern (*Dryopteris filix-mas*). There are mature trees along the verge including sycamore and Scots pine (*Pinus sylvestris*). Potential commuting and foraging habitat for bats. Potential terrestrial habitat for amphibians and small mammal habitat.




Habitat Condition (provisional): Good (Score 3).

TR3.TN30

No photo

Marshy grassland at base of slope adjacent to a small ditch. Dominated by soft rush and Yorkshire fog with lesser celandine, meadow buttercup, annual meadow-grass (*Poa annua*), marsh bedstraw (*Galium palustre*), horsetail (*Equisetum* sp.), bent sp., blinks (*Montia fontana*), common sorrel, bittercress sp. and cuckooflower (*Cardamine pratensis*). There is some evidence of grazing as this area is not fenced from sheep grazed field.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN31	
<p>Steep sections of a sheep grazed field with greater botanical diversity than those in the surrounding area (species-rich neutral grassland). On the steep sided slopes, which are less accessible to livestock lesser celandine, selfheal (<i>Prunella vulgaris</i>), marsh bedstraw, sweet vernal grass (<i>Anthoxanthum odoratum</i>), pignut, springy turf moss, field woodrush (<i>Luzula campestris</i>), bluebell, mouse ear hawkweed (<i>Pilosella officinarum</i>) and marsh thistle (<i>Cirsium palustre</i>) were noted.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN32	
<p>Upland habitat consisting of semi-improved acid grassland, valley mire, marshy grassland and flushes. Hummocky and undulating topography on a gentle slope with abundant mosses including springy turf moss, <i>Polytrichum</i> moss, plus other bryophytes. Species present include heath bedstraw (<i>Galium saxatile</i>), purple moor grass (<i>Molinia caerulea</i>), common sedge (<i>Carex nigra</i>), field woodrush, soft rush, sweet vernal grass, sheep's fescue (<i>Festuca ovina</i>), wavy hair grass (<i>Deschampsia flexuosa</i>), foxglove, rosebay willowherb, bilberry (<i>Vaccinium myrtillus</i>) and common male fern. The habitat appears to be grazed at times by sheep. The areas of flush habitat have locally abundant soft rush, <i>Polytrichum</i> moss and <i>Sphagnum</i> moss. Also noted in the flush areas where rushes are absent are: hare's-tail cottongrass (<i>Eriophorum vaginatum</i>), <i>Sphagnum</i> mosses, cranberry (<i>Vaccinium vitis-idae</i>). Potential reptile and ground nesting bird habitat. Botanically interesting (requires further NVC assessment if impacted by the proposed works). This target note is situated within Goodber Common Biological Heritage Site (BHS).</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.TN33	
<p>Lichen rich dry stone wall. Potential reptile habitat. This target note is situated within Goodber Common BHS.</p>	



Habitat Condition: Not applicable (no assessment required).

TR3.TN34



Upland semi-improved acid grassland with locally dominant patches of soft rush. Heath rush (*Juncus squarrosus*), field wood rush (*Luzula campestris*), springy turf moss, wavy hair grass, red feather moss (*Pleurozium schreberi*), purple moor grass, heath bedstraw, common sedge, *Polytrichum* moss, *Sphagnum* moss, hare's tail cottongrass, cranberry and sheep's sorrel were noted. There are patches of locally dominant blinks and wavy bittercress (*Cardamine flexuosa*) in a wet seepage near the wall. Potential reptile and ground nesting bird habitat. An owl pellet was also found in this area. Botanically interesting (requires further NVC assessment if impacted by the proposed works). This target note is situated within Goodber Common BHS.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN35






A flat area of valley mire around TR3.WC18. There are large continuous blankets of *Sphagnum* mosses (several species) with *Polytrichum* moss, cranberry and hare's-tail cottongrass. There is an absence of coarse tussocky grass species and overall the area is relatively sparsely vegetated. The water table is close to surface. Potential reptile habitat and ground nesting bird habitat. Botanically interesting (requires further NVC assessment if impacted by the proposed works). This target note is situated within Goodber Common BHS.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN36



A heavily grazed area alongside a minor track with abundant *Sphagnum* and *Polytrichum* mosses. Dominated by soft rush with a lot of dead plant matter. Degraded habitat subject to intense grazing and trampling (appears to be where additional fodder is provided for the livestock). This target note is situated within Goodber Common BHS.

Habitat Condition (provisional): Poor (Score 1).	
TR3.TN37	
<p>Wet heath/acid grassland mosaic, dominated by purple moor grass, hare's-tail cottongrass, along with cranberry, <i>Sphagnum</i> mosses, <i>Polytrichum</i> moss, carpets of bilberry, cross-leaved heath (<i>Erica tetralix</i>), heath milkwort (<i>Polygala serpyllifolia</i>), heath bedstraw, tormentil, heath woodrush (<i>Luzula multiflora</i>), sweet vernal grass, carnation sedge (<i>Carex panicea</i>) and spike rush sp. (<i>Eleocharis</i> sp.). Tussocky in places with some evidence of cattle poaching. This habitat is a mix of wet and transitional dwarf shrub and grass heath, with the shrub heath being transformed to grass heath due to grazing, drainage and perhaps atmospheric nitrogen deposition. Potential reptile and ground nesting bird habitat. Botanically interesting (requires further assessment). This target note is situated within Goodber Common BHS.</p>	
Habitat Condition (provisional): Moderate (Score 2).	
TR3.TN38	
<p>Band of marshy grassland dominated by soft rush with common sedge, sweet vernal grass, hairy bittercress (<i>Cardamine hirsuta</i>), springy turf moss and field woodrush. Potential for ground nesting birds. This target note is situated within Goodber Common BHS.</p>	
Habitat Condition (provisional): Poor (Score 1).	
TR3.TN39	



A stone building in dilapidated state. The remains of a timber pitched roof structure is evident but this has collapsed. There are many gaps in the mortar of the stone walls. The building is located within an exposed position in the landscape and overall is considered to have moderate bat roosting potential and potential to be used by nesting birds.

Habitat Condition: Not applicable (no assessment required).

TR3.TN40



Oystercatcher feeding in sheep grazed field. Potential ground nesting bird habitat.

Habitat Condition: Not applicable (no assessment required).

TR3.TN41






Pair of curlew flushed from field during survey. Potential ground nesting bird habitat and potential laying up sites for brown hare.

Habitat Condition: Not applicable (no assessment required).




TR3.TN42



Wet heath/acid grassland mosaic. An area of low-lying acid upland habitat comprising hare's-tail cottongrass, bilberry, spike rush sp., *Sphagnum* moss sp. (abundant), purple moor grass, cranberry, small amount of bell heather (*Erica cinerea*), heath milkwort, tormentil, sheep's fescue and bryophytes. The area is bordered by a marginal band of marshy grassland comprising dominant soft rush and sweet vernal grass with occasional cuckooflower. The marshy grassland habitat is on slightly raised ground compared to the cotton-grass mire, which becomes drier moving westwards towards TR3.TN37 but species composition is fairly constant. Potential reptile and ground nesting bird habitat. Requires a detailed botanical (NVC) assessment if impacted by the proposed works. This target note is situated within Goodber Common BHS.





Habitat Condition (provisional): Good (Score 3).		
TR3.TN43		
<p>Marshy grassland with a high percentage cover of soft rush with <i>Sphagnum</i> and <i>Polytrichum</i> mosses, sweet vernal grass, tormentil, heath woodrush, common sedge, heath bedstraw, springy turf moss and cuckooflower. The area becomes botanically less interesting to the south, moving up the slope, here the <i>Sphagnum</i> mosses begin to disappear from the sward. The habitat is wet underfoot in places. Potential reptile and ground nesting bird habitat. Botanically interesting (requires further assessment). This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN44		
<p>Small drier patches within TN43 which are on slightly higher ground and classified as semi-improved acid grassland. Vegetated with bryophytes, sweet vernal grass, heath rush, sedge sp., <i>Sphagnum</i> moss., bilberry, sheep's fescue and a very small amount hare's-tail cottongrass. No ericoid species are present in this habitat. Potential reptile and ground nesting bird habitat. Requires further botanical assessment. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN45		
<p>Hummocky bryophyte-rich, semi-improved acid grassland on sloped ground which is subject to some sheep grazing. Species present comprise heath rush, small patches of desiccated <i>Sphagnum</i> moss, patchy soft rush, springy turf moss, sheep's fescue and purple moor grass. There is some evidence of erosion. Towards the top of the slope <i>Sphagnum</i> moss is abundant and other vegetation is sparse. Potential reptile and ground nesting bird habitat. Requires further botanical assessment to NVC level if impacted by the proposed works. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		



TR3.TN46	
<p>Sheep-grazed semi-improved acid grassland comprising sweet vernal grass, sheep's fescue, tormentil, bryophytes, compact rush (<i>Juncus conglomeratus</i>), springy turf moss, heath bedstraw, common sedge and soft rush. There are large mounds where rushes are absent and the grassland is fine leaved. This area is unfenced and comprises open, upland grazing land. The grassland becomes less species-rich to south where the mounding is absent and the grassland is on more level ground. Potential reptile and ground nesting bird habitat. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN47	
<p>Three pairs of lapwing displaying over semi-improved acid grassland. Potential reptile and ground nesting bird habitat. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN48	
<p>An area mire positioned on lower ground than surrounding habitat. Hare's tail cottongrass dominates with abundant common sedge, bryophytes and <i>Sphagnum</i> mosses. The habitat was quite dry at the time of the survey. Potential ground nesting bird and reptile habitat. Requires further botanical assessment (NVC) if impacted by the proposed works. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition: Moderate (Score 2).</p>	

TR3.TN49	
<p>A large expanse of marshy grassland strongly dominated by soft rush, with bryophytes but no <i>Sphagnum</i> mosses present. There are small amounts of heath bedstraw, <i>Polytrichum</i> moss, sweet vernal grass and foxglove. In the more waterlogged areas there are locally dominant patches of blinks. There are tyre tracks present throughout the area. Further east, close to a minor road, the cover of rushes is significant and dense with a thatch as though it has been cut, and <i>Sphagnum</i> mosses are absent. Here sweet vernal grass and purple moor grass are frequent. There is also evidence of muck spreading in this area. Potential reptile and ground nesting bird habitat. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN50	
<p>Lichen rich dry stone wall. Could be used by amphibians and reptiles as a refugia/hibernaculum and also as nesting bird/small mammal habitat. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN51	
<p>A steep roadside bank vegetated with semi-improved acid grassland, with a short fine-leaved sward comprising sweet vernal grass, mat grass (<i>Nardus stricta</i>), Yorkshire fog, tormentil, mouse ear hawkweed, daisy (<i>Bellis perennis</i>), bird's-foot trefoil (<i>Lotus corniculatus</i>), dandelion, field woodrush, ribwort plantain, sheep's fescue, common mouse ear (<i>Cerastium fontanum</i>), thyme leaved speedwell (<i>Veronica serpyllifolia</i>), white clover (<i>Trifolium repens</i>) and perennial rye grass (<i>Lolium perenne</i>). The feature extends down to a watercourse. Some bare patches potentially created by rabbit digging. Potential reptile habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	



TR3.TN52	
<p>A small area of semi-improved acid grassland dominated by sheep's fescue and sweet vernal grass with frequent springy turf moss, heath rush, tormentil, heath wood rush, heath milkwort, heath bedstraw and <i>Sphagnum</i> moss. There are smaller amounts of purple moor grass and bilberry with occasional patches of soft rush. The sward is fine leaved and less than 30 cm in height. It is located on sloping north facing ground. Potential ground nesting bird and reptile habitat. Botanically interesting (requires further NVC assessment if impacted by the proposed works).</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN53	
<p>Semi-improved acid grassland dominated by purple moor grass, hare's-tail cottongrass with occasional common spike rush (<i>Eleocharis palustris</i>), ling (<i>Calluna vulgaris</i>), cranberry, cross leaved heath, bilberry and bryophytes. The area is hummocky but feels dry as the water table is not close to surface. Ericoid species comprise less than 25% of the vegetation cover – this habitat is likely to be over-grazed dwarf shrub heath. There are flushes nearby comprising soft rush over <i>Sphagnum</i> mosses. Potential reptile and ground nesting bird habitat. Botanically interesting (requires further botanical assessment if impacted by the proposed works). This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN54	 

Marshy grassland with some acid indicator species present. The area is dominated by soft rush, foxglove and sweet vernal grass with heath bedstraw and blinks occurring frequently alongside marsh bedstraw, marsh thistle, bittercress sp., common sedge, *Sphagnum* moss., creeping Jenny (*Lysimachia nummularia* (rare), marsh pennywort, horsetail sp. and cuckooflower occasionally present. There are some slightly drier patches with a fine leaved sward of sheep's fescue, tormentil, springy turf moss, wavy hair grass, *Sphagnum* moss, mat grass and one patch of common lousewort (*Pedicularis canadensis*). Brown hare flushed during survey (potential laying up sites). Potential reptile and ground nesting bird habitat.

Habitat Condition (provisional): Good (Score 3).

TR3.TN55



Well Beck Wood. Semi-natural ancient broadleaved woodland which is wet in places. Canopy species include hazel, alder, rowan, oak, hawthorn, silver birch, sycamore and beech with a patchy scrub layer of willow and holly. The ground conditions are marshy and include abundant horsetail sp., meadowsweet, creeping buttercup, marsh bedstraw, lesser celandine, soft rush, herb Robert, bugle (*Ajuga reptans*), wood sorrel (*Oxalis acetosella*), broad buckler fern, woundwort sp. (*Stachys* sp.), tufted hair grass, sedge sp., barren strawberry, creeping Jenny, greater stitchwort, common male fern, honeysuckle, enchanter's nightshade (*Circaea lutetiana*), large bittercress (*Cardamine amara*), dog's mercury, wild garlic (*Allium ursinum*), wood speedwell (*Veronica montana*), primrose, violet sp., lady fern (*Athyrium filix-femina*) and garlic mustard. There are carpets of bluebell outside of the wet area. Fallen deadwood is present, much of which has a dense covering of bryophytes. The woodland is undulating and sloping to the east. Common polypody (*Polypodium vulgare*) and hard fern (*Blechnum spicant*) are present on dry stone walls within the woodland. Greater spotted woodpecker (*Dendrocopos major*) was noted during the survey. There is no evidence of any recent management and the trees are generally small but mature. The downstream section of the woodland, close to a dry stone wall, has bird boxes throughout. The roadside section is vegetated with bush vetch, garlic mustard, silverweed (*Potentilla anserina*), cleavers, common nettle and broad-leaved dock. Potential for reptiles, amphibians, nesting birds, roosting, commuting and foraging bats. Potential for badger setts in places though some sections are unsuitable due to wet ground. Botanically interesting (requires further botanical assessment if impacted by the proposed works).

Habitat Condition (provisional): Good (Score 3).




TR3.TN56







Slow worm carcass found on road (likely roadkill) proving presence in the area

Habitat Condition: Not applicable (no assessment required).



TR3.TN57	
<p>Curlew pair flushed from species-poor semi-improved grassland.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN58	
<p>Semi-improved acid grassland located on a slope within an improved field. Species include sheep's fescue, tormentil, sweet vernal grass, sheep's sorrel (<i>Rumex acetosella</i>), common mouse ear and yarrow (<i>Achillea millefolium</i>). Potential for ground nesting birds and laying up sites for brown hare.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN59	
<p>An old gully/channel on top of bank above a minor road which is wooded and vegetated with greater stitchwort, wood sorrel, sweet vernal grass, springy turf moss and great wood rush (<i>Luzula sylvatica</i>). It was not holding water at the time of the survey. Potential for nesting birds, reptiles (slow worm) and as terrestrial habitat for amphibians.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	

TR3.TN60	
<p>A species-rich hay meadow (semi-improved neutral grassland) with a sward height of 30 to 40 cm at the time of the survey. Abundant yellow rattle (<i>Rhinanthus minor</i>) was noted alongside sweet vernal grass, crested dog's-tail (<i>Cynosurus cristatus</i>), meadow buttercup, meadow foxtail (<i>Alopecurus pratensis</i>), daisy, red clover (<i>Trifolium pratense</i>), ribwort plantain (<i>Plantago lanceolata</i>), common mouse ear, thyme leaved speedwell, common sedge, dandelion, broad-leaved dock, perennial rye grass, common sorrel, tufted forget me not (<i>Myosotis laxa</i>), cuckooflower and Yorkshire fog. Small amounts of pignut (<i>Conopodium majus</i>) are also present within the sward. The habitat extends to the west where pignut is more abundant along with field speedwell (<i>Veronica persica</i>), field woodrush and creeping buttercup. On a sloped area at the limit of the survey area is a small section of acid grassland with abundant tormentil, plus abundant of pignut and bluebell. Potential ground nesting bird habitat and reptiles. Botanically interesting (requires further botanical assessment if impacted by the proposed works).</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN61	 
<p>A traditional stone barn with a pitched, stone tiled roof. The mortar has some missing sections at the roofs edge creating potential access gaps for bats. The building is generally in moderate condition although the windowpanes are now absent creating potential access points for bats and/or owls and other nesting birds. The roof is collapsed at southern elevation, and there are gaps under the roof flags. It is located close to woodland edge and a stream within the adjacent species-rich meadow (TR3.TN60). Overall, the building is assessed as having moderate potential for bats and barn owl. It also has nesting potential for other bird species.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN62	



Brown hare flushed from cover during survey in area of marshy grassland near to large oak tree. Potential laying up sites. Potential ground nesting bird potential.

Habitat Condition: Not applicable (no assessment required).

TR3.TN63



Grassland habitat on an east facing slope with an unusual combination of species. Semi-improved acid grassland indicator species are abundant (tormentil, heath bedstraw, sheep's fescue) alongside shade loving species more typical of woodland habitats including bluebell, wood anemone (*Anemone nemorosa*) and pignut. Also present are sweet vernal grass, horsetail sp. and field woodrush. Potential for ground nesting birds.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN64



A large field on steeply sloping ground vegetated with a mosaic habitat comprising patches of acid grassland, marshy grassland and tall ruderal habitat providing structural diversity. The acid grassland comprises abundant sheep's fescue, tormentil, mat grass, heath bedstraw with frequent field woodrush, tufted hair grass, pignut, bluebell, soft rush, sweet vernal grass and springy turf moss. The marshy grassland is vegetated with soft rush, marsh thistle and the areas of tall ruderal vegetation are dominated by bracken and common nettle. There is a hedgerow nearby. This area provides suitable habitat for reptiles, specifically slow worm and potential ground nesting bird habitat.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN65



Fall Wood Coppice. Broadleaved woodland comprising scattered sessile oak (*Quercus petraea*), ash and alder trees of a similar age located on sloping ground down to a river. Beneath the canopy is a carpet of bluebell, holly saplings, bracken, greater stitchwort, springy turf moss, cleavers, common nettle, rowan saplings, wood sorrel, hard fern, lesser celandine and broad buckler fern. There are damper areas vegetated with meadowsweet, creeping Jenny, tufted hair grass and perforate St. John's wort (*Hypericum perforatum*). In some areas, the canopy is quite open resulting in high light levels at ground level - these areas are dominated by Yorkshire fog. Alongside the river there is a large patch of locally dominant aspen (*Populus tremula*), including regenerating scrub. There are no signs of any recent management aside from a small area of tree planting where tree guards are still present. The woodland on the eastern side of the watercourse is dominated by silver birch. There is a numbered nest box scheme within the woodland operated by Pete Marsh and Jean Roberts. The area is of particular importance for pied flycatcher (*Ficedula hypoleuca*). There is also abundant moth data for this area (Pete Marsh pers. comm). The woodland is likely to be an important foraging, commuting and roosting resource for local bat populations. Potential nesting bird and reptile habitat. Potentially suitable for badger sett excavation, though no evidence found. Botanically interesting (requires further assessment) (not recorded as ancient semi-natural or replanted woodland on MAGIC).

Habitat Condition (provisional): Good (Score 3).

TR3.TN66



A stone barn, double storey height and built in 1895 (inscription on building). It has timber doorways and a timber barn door. It is relatively exposed within the landscape but connected to two hedgerows. It also has a stone gable roof with a small single pitch extension. Bird droppings were present on an open ledge. There are multiple gaps beneath the roof slates and beneath ridge tiles. The stonework is generally well sealed and in good condition but there are small sections of mortar loss and dislodged stone, particularly on the extension section. The building provides moderate bat roost potential and has potential as a barn owl breeding site, as well as providing habitat for other nesting birds. The building presents an opportunity for net gain by restoring the damaged roof sections, thereby securing potential bat roosting and barn owl nesting habitat in the long term.

Habitat Condition: Not applicable (no assessment required).




TR3.TN67



Brown hare sighted in species-poor semi-improved grassland on level ground. Potential laying up sites.

Habitat Condition: Not applicable (no assessment required).



TR3.TN68	
	<p>Semi-improved neutral grassland with some isolated patches of higher botanical diversity including great burnet (<i>Sanguisorba officinalis</i>), sedge species, pignut and cuckooflower. However, overall the grassland is dominated by meadow foxtail, Yorkshire fog, sweet vernal grass, crested dog's-tail, common mouse ear, red clover, tufted hair grass, common sorrel, creeping buttercup and meadow buttercup. The field has recently been spread with farmyard manure. This habitat presents an opportunity for net gain through restoration as it shows signs of having been more species diverse prior to agricultural improvement. The more botanically diverse areas are clearly restricted to pockets which have not received fertiliser input. Potential ground nesting bird habitat and laying up sites for brown hare.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>
TR3.TN69	
	<p>Steep banks of small ditch which are vegetated with acid grassland comprising mat grass, sweet vernal grass, sheep's fescue, tormentil, mouse-ear hawkweed, field woodrush, Yorkshire fog, heath bedstraw, barren strawberry, yarrow, springy turf moss and sheep's sorrel. Potential reptile habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN70	



Semi-mature coniferous plantation woodland with some broad-leaved specimens which have been recently planted at the north-western edge of the woodland. The interior appears exclusively coniferous and is dense, forming a closed canopy and low light conditions. The broad-leaved trees at the periphery still have tree guards present and comprise rowan, hawthorn, hazel and oak. The ground layer is uneven, with stumps of felled trees now vegetated with a carpet of bryophytes and additional vegetation. The ground is uneven due to the tree stumps and difficult to navigate on foot. Species composition indicates acidic conditions and includes heath bedstraw, *Polytrichum* moss, bilberry, bramble, tufted hair grass, common male fern, foxglove, sweet vernal grass, field woodrush, sedge sp., barren strawberry and tormentil. There are linear gulleys running through the woodland which are damper in nature and support *Sphagnum* mosses. A raptor was heard calling in the woodland during the survey. Potential nesting bird habitat. The woodland may also provide bat foraging habitat, although the trees are generally of negligible potential. There is some standing dead wood which could provide suitable bat roosting habitat. The habitat has potential for reptiles as there are suitable basking places, log piles and other refugia abundant throughout. Could have potential for badger sett excavation.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN71



Scattered mature, broadleaved trees alongside a watercourse. Canopy species include ash, alder and hazel. The understory comprises scattered hawthorn and the ground flora comprises bluebell, pignut and wood sorrel with patches of soft rush dominated marshy grassland. Potential nesting bird habitat and bat commuting, foraging and roosting habitat. Opportunity for net gain through management of grazing which would allow a more natural woodland structure to develop.




Habitat Condition (provisional): Moderate (Score 2).

TR3.TN72



Isolated area of acid grassland on a steep north-west facing slope down to a watercourse. Species present include mat grass, sweet vernal grass, sheep's fescue, tormentil, field wood rush, marsh thistle, compact rush, white clover, ribwort plantain and springy turf moss. This habitat grades into marshy grassland at the base of the slope. Potential reptile habitat.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN73	 <p>A single storey, red brick redundant operational building with no door and a collapsed southeast facing wall. The walls are double skinned and in poor condition with cracks and missing mortar. The cavity between the two wall layers is exposed in places due to the collapsed sections. The roof comprises a flat concrete slab. Internally the building is divided into two rooms which are not connected. The smaller room at the north-eastern end of the building shows evidence of damp. The building is considered to have high bat roosting potential due to the presence of suitable roosting crevices, connectivity to suitable habitat (in close proximity to a wooded stream corridor) and its sheltered section. Potential for nesting birds.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>
TR3.TN74	 <p>An extensive area of marshy grassland alongside a watercourse. The habitat is strongly dominated by soft rush with additional large bittercress, opposite leaved golden saxifrage, common sorrel, marsh thistle, sweet vernal grass, tufted hair grass, marsh bedstraw, common nettle, blinks, marsh willowherb, meadowsweet and greater bird's-foot trefoil (<i>Lotus pedunculatus</i>). It is likely that this area is inundated during periods of high flow. Potential reptile and ground nesting bird habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN75	



The remains of a stone barn (agricultural building) with no roof (remains of a collapsed asbestos sheet roof around the building). The building is single storey but tall with large barn doors. The building has thick, double skinned walls with large cracks/gaps between the stones. The building is exposed within the landscape and is not directly connected to any linear features or other suitable bat commuting and foraging habitat - the nearest woodland is approximately 100 m from the building. It is unsuitable for barn owl nesting habitat due to the lack of roof and ledges, leading to exposed conditions within the building. Overall it is considered to have low to moderate bat roost potential. There is potential for net biodiversity gain if the roof is replaced with suitable access points, securing potential bat roosting and barn owl nesting habitat.

Habitat Condition: Not applicable (no assessment required).

TR3.TN76



A derelict stone barn (agricultural building) with a partially collapsed stone, flag roof. The building is located within a sheep grazed field and is not in close proximity to any suitable foraging or commuting features for bats. There are gaps between the stonework and potential access points for bats via vertical ventilation gaps in the walls. Overall the building is assessed as having low bat potential (some features but isolated position). The building provides potential for barn owls and other nesting birds.




Habitat Condition: Not applicable (no assessment required).



TR3.TN77






A species-rich semi-improved neutral grassland roadside verge parallel to a hedgerow. Species present include bugle, greater stitchwort, pignut, common dog violet, lesser celandine, tormentil, ribwort plantain, bush vetch, creeping buttercup, herb Robert, foxglove, bluebell, Yorkshire fog, common bent (*Agrostis capillaris*), bramble, thistle, hawthorn, germander speedwell, cleavers, common nettle and hogweed. Some areas are dominated by bramble scrub whilst there are also large swathes of herb-rich grassland. Lower sections are steeply sloped up to 2 m which gradually declines moving up the road. Potential for reptiles (slow worm)




Habitat Condition (provisional): Moderate (Score 2).

TR3.TN78	
<p>Semi-improved neutral grassland which shows some botanical diversity. e.g. frequent yellow rattle, mouse ear, chickweed, red clover, common sorrel, dandelion, broad-leaved dock, white clover, meadow buttercup, cuckooflower, field forget-me-not and daisy. The grassland is dominated by crested dog's-tail, sweet vernal grass, Yorkshire fog, soft rush, purple moor grass, wavy hair grass, meadow foxtail and perennial rye grass. The field has been recently spread with farmyard manure. Evidence of rabbit digging was noted in the centre of the field. In the south-eastern corner close to a ditch there is a variety of plants including pignut, blinks, greater stitchwort, greater bird's-foot trefoil and bittercress species. There is potential for net gain through restoration to a species-rich meadow. Potential for ground nesting birds.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN79	
<p>Oystercatcher pair on fence. Nearby nest. Ground nesting bird habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN80	
<p>Pairs of curlew and oystercatcher landing and displaying. Ground nesting bird habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	




TR3.TN81	 <p>Broadleaved semi-natural woodland within a steep sided river valley. Canopy species include beech, silver birch, oak, alder, ash, sycamore and rowan. The understory comprises hazel, willow, hawthorn, wild cherry (<i>Prunus</i> sp.) and holly. The ground flora comprises bluebell, wood sorrel, greater stitchwort, bracken, broad buckler fern, sweet vernal grass, common male fern, herb Robert, dog's mercury, lesser celandine, wood melick (<i>Melica uniflora</i>), meadowsweet, cleavers, hedge woundwort, ground elder, ground ivy and wood avens. On the western side of the road the woodland is located on very steep valley sides and there is more ivy growth on the ground and trees; bugle was also noted within this area. There is a bird nest box scheme within the woodland. The habitat is suitable for the construction of badger sets although no evidence was found. Potential reptile (specifically slow worm), nesting bird habitat, roosting commuting and foraging opportunities for bats and terrestrial habitat for amphibians.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN82	 <p>Neutral grassland located on a steep slope with a variety of ground flora including pignut, greater stitchwort, bluebell, opposite leaved golden saxifrage, wood sorrel, bracken, lesser celandine, soft rush, <i>Polytrichum</i> moss, common male fern and common polypody. Potential habitat for reptiles, specifically slow worm.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>









TR3.TN83	
<p>Semi-improved neutral grassland with abundant pignut and sweet vernal grass. The grassland gently slopes and there is also tormentil, meadow-grass species, greater bird's-foot trefoil, common sorrel, lesser celandine, germander speedwell, Yorkshire fog and field woodrush within the sward. Where the grassland levels out it becomes species-poor and is dominated by mouse ear chickweed, cock's-foot, meadow buttercup and dandelion. Potential ground nesting bird habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN84	
<p>Acid grassland around a fenced compound. The sward comprises mat grass, sheep's fescue, sweet vernal grass, tormentil, horsetail sp., foxglove, marsh thistle, soft rush, star sedge (<i>Carex echinata</i>), heath wood rush, flea sedge (<i>Carex pulicaris</i>), marsh violet (<i>Viola palustris</i>), marsh pennywort (<i>Hydrocotyle vulgaris</i>), common sedge, thyme leaved speedwell and bird's-foot trefoil. Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells Site of Special Scientific Importance (SSSI).</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN85	
<p>Continuous bracken with acid grassland and significant soft rush cover alongside some sections of heathland habitat. Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells SSSI.</p>	

Habitat Condition (provisional): Moderate (Score 2).	
TR3.TN86	
<p>Dry dwarf shrub heath (acid) with bracken and disturbed areas around the periphery. Species present include <i>Sphagnum</i> mosses, ling, bilberry, hare's tail cottongrass, wavy hair grass, <i>Polytrichum</i> moss and heath rush. The cover of ericoid species is more than 25%. Potential reptile and ground nesting bird habitat. Botanically interesting (requires further assessment). This target note is situated within Bowland Fells SSSI.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN87	
<p>Undulating ground comprising dry heath/acid grassland mosaic, which is ling dominated on steeper sections. There is also significant bracken cover throughout. On a level section, close to a stream is an area of marshy grassland dominated by soft rush. The acid grassland sections comprise sheep's fescue and sweet vernal grass with springy turf moss, tormentil, heath bedstraw, violet sp., common mouse ear, hairy bittercress, thyme leaved speedwell, crested dog's-tail, heath rush and selfheal. Botanically interesting (requires further assessment). Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells SSSI.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.TN88	
<p>Dry dwarf shrub heath habitat comprising ling, bilberry, tormentil, heath rush, heath woodrush, hare's-tail cottongrass, wavy hair grass, <i>Polytrichum</i> moss, sheep's fescue, heath bedstraw, cross leaved heath and a small amount of <i>Sphagnum</i> moss. The heathland occurs on a very gentle north-east facing slope. Bracken cover in this section is reduced compared to the surrounding habitat. Botanically interesting (requires further assessment). Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells SSSI.</p>	






Habitat Condition (provisional): Moderate (Score 2)		
TR3.TN89		
<p>Mosaic of habitats including marshy grassland, acid grassland and bracken. Species include; soft rush, bracken and marsh thistle and small, locally dominant patches of ling dominated heath in drier areas. Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells SSSI.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN90		
<p>A bank sloping down from a gravel track to a dry stone wall. At the top, close to the track the ground appears recently disturbed by cattle poaching and is covered with frequent creeping thistle. The top of the bank is vegetated with grasses with additional tormentil and sheep's fescue but no other acid indicator species. Dominant species include crested dog's-tail, creeping buttercup, field horsetail (<i>Equisetum arvense</i>) and soft rush. Further downslope the grassland becomes more typically acid with additional heath bedstraw. The base of the slope where run off gathers is vegetated with marshy grassland dominated by soft rush and marsh thistle with occasional common nettle. There is an old gully at the base of the slope, adjacent to a dry stone wall, that has some small isolated pockets of heath habitat on a steep west facing bank. Potential reptile and ground nesting bird habitat. This target note is situated within Bowland Fells SSSI.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN91		
<p>An area of acid grassland on a steep south-east facing slope. No heather cover but occasional bilberry, though this is less than 25% cover. Additional species present include heath bedstraw, tormentil, sheep's fescue, wavy hair grass, mat grass, heath rush and sweet vernal grass. The habitat is hummocky and undulating. Potential reptile and ground nesting bird habitat. This target note is situated within Dunsop Fell and Low Fell BHS.</p>		




Habitat Condition (provisional): Moderate (Score 2).		
TR3.TN92		
<p>Curlew pair calling and one flushed from the field during survey. Neutral semi-improved grassland and fairly species-rich with some sparse soft rush cover. Dominant species comprise crested dog's-tail, Yorkshire fog, creeping buttercup, marsh thistle and daisy. Potential ground nesting bird habitat, and potential brown hare laying up sites.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN93		
<p>Narrow strip of woodland/scattered mature trees along the banks of a watercourse on a widened section of verge to the side of the road. Canopy species include dominant alder alongside sycamore, hawthorn, Scot's pine, rowan and holly. No understorey is present and the ground flora is dominated by grasses including crested dog's-tail, fescue sp., meadow-grass sp., wood sorrel, <i>Polytrichum</i> moss sp., mat grass, sweet vernal grass and occasional ribwort plantain. Potential nesting bird habitat, bat roosting, commuting and foraging habitat. Also potential reptile habitat and terrestrial habitat for amphibians.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
TR3.TN94		
<p>Displaying lapwing over species-poor semi-improved grassland with some acid indicators. Recently pasture chopped (not cut to base). Potential ground nesting bird habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>		




TR3.TN95	
<p>Pair of grazing brown hare within species-poor semi-improved grassland. Potential laying up sites. Potential ground nesting bird habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN96	
<p>Stone barn with a pitched stone flag roof. There are large gaps between the stonework and at the roof verge. Three small ventilation holes are present on the eastern facing gable (facing road). There is also a slipped ridge tile and some small gaps beneath the roof slabs. The timber barn door is open. Overall the building is considered to have high bat roost potential due to nearby suitable foraging habitat. The building also provides potential barn owl breeding habitat, along with potential nesting opportunities for other bird species which utilise buildings.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN97	
<p>A stone barn in a state of disrepair with a collapsed pitched, slate tiled roof. There are areas of missing render on the stone walls and some gaps between the stonework. Internally, the building is bright and airy within open rooms where the windows and doors are missing. However, there are some darker and more sheltered areas where the roof is intact. Overall the building is considered to have moderate bat roosting potential and potential for breeding barn owl, along with other bird species which utilise buildings.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	






TR3.TN98	
<p>Area of potential reptile and amphibian refugia consisting of loose stone piles, a vegetated bund and piles of timber planks, also providing suitable basking habitat. These are surround by tall ruderal vegetation and small section of plantation woodland.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN99	
<p>An old bank beneath a tree line with ground flora potentially indicative of ancient woodland. Species include dog's mercury, red campion, common nettle, herb Robert, wood avens, brooklime, creeping buttercup, foxglove, primrose, enchanter's nightshade, germander speedwell, creeping buttercup, comfrey (<i>Symphytum</i> sp.), hedge woundwort and broad buckler fern. The bank is damp at the base of the gully which likely holds water during prolonged wet conditions. It is bryophyte rich with lots of deadwood. Tree species comprise very mature sycamore, with elder, holly, hawthorn, alder, rowan, ash, elder, hazel, goat willow (<i>Salix caprea</i>) and dog rose (<i>Rosa canina</i>).</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN100	
<p>Curlew pair calling and displaying over species-poor semi-improved grassland with a high cover of soft rush. The field is sheep grazed. Species comprise meadow foxtail, crested dog's-tail, creeping buttercup, common mouse ear, perennial rye grass and Yorkshire fog. Potential ground nesting bird habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	






TR3.TN101	
<p>Widened verge section alongside a minor road with a line of mature but small broadleaved trees (ash, sycamore, alder and rowan) at the boundary with the field. The understorey is shaded and comprises species-rich grassland comprising water avens (<i>Geum rivale</i>) (abundant), cock's-foot, meadow-grass sp., tufted hair grass, Yorkshire fog, sweet vernal grass, perennial rye grass, crested dog's-tail, water mint (<i>Mentha aquatica</i>), hedge woundwort, germander speedwell, meadowsweet, creeping thistle, hard rush, bush vetch, dog's mercury, broad-leaved dock, red clover, meadow vetchling, daisy, herb Robert, pignut, cleavers and marsh marigold (<i>Caltha palustris</i>).</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN102	
<p>Moderately species-rich hay meadow, vegetated with yellow rattle, pignut, ribwort plantain, meadowsweet, Yorkshire fog, meadow foxtail and creeping buttercup. Potential ground nesting bird habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN103	
<p>Species-rich spring and fen habitat. Species include dominant hard rush (<i>Juncus inflexus</i>), blunt flowered rush (<i>Juncus subnodulosus</i>), creeping buttercup, cuckooflower, crested dog's-tail, marsh thistle, Yorkshire fog, fescue sp., meadowsweet, marsh bedstraw, common sedge, carnation sedge, common mouse ear, brooklime, water mint, sedge sp., water avens, horsetail sp., bugle, valerian (<i>Valeriana officinalis</i>), quaking grass (<i>Briza media</i>), creeping cinquefoil (<i>Potentilla reptans</i>), silverweed, ragged robin (<i>Lychnis flos-cuculi</i>), bogbean (<i>Menyanthes trifoliata</i>), spike rush sp., dactylorhiza sp., marsh arrowgrass (<i>Triglochin palustris</i>) and marsh helleborine (<i>Epipactis palustris</i>). Botanically interesting (requires further assessment).</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	




TR3.TN104	
	<p>Pair of curlew in gently sloping sheep grazed species-poor grassland. Potential ground nesting bird habitat.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>
TR3.TN105	
	<p>Scattered trees within an enclosed dry stone wall with coarse grassland ground flora. The trees comprise mature sycamore. One bird box is present. Opportunity for net gain by improving woodland structure/planting of trees and shrubs as well as possibly creating other wildlife passages through the dry stone wall.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN106	
	<p>A small quarry with exposed bedrock surrounded by a coarse grassland bund. Species include tufted hair grass, common knapweed, creeping thistle, docks, ribwort plantain, colt's-foot, creeping buttercup, selfheal, yarrow, gorse scrub, cock's-foot, red clove and wavy hair-grass. There is abundant ephemeral / early colonising vegetation on loose spoil at the edges of the quarry - these areas could be species-rich during the main flowering season. There is a small area of standing water at the base of the quarry.</p> <p>Nesting bird potential and potential for small mammals. Negligible bat potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>




TR3.TN107	
<p>Ground nesting bird potential and brown hare potential throughout sheep grazed species-poor semi-improved fields adjacent to the track.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN108	
<p>A fenced area of recently planted mixed plantation woodland with tree guards still present. Planted within last 15 years. Tree species include alder, sessile oak and Scots pine. No woodland structure has yet developed. The ground flora comprises tussocks coarse grasses and is wet underfoot. Species include tufted hair grass, soft rush, common nettle, creeping thistle, cock's-foot and cleavers. The northern section (beyond a dry stone wall) has additional rowan with a ground flora which is dominated by tussocks of tufted hair grass. The watercourse TR3.WC69 flows through this woodland.</p> <p>Potential for nesting birds and amphibians and brown hare. Suitable for small mammals. A pellet from a bird of prey noted near the boundary fence.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN109	
<p>Large piles of rock. Suitable habitat for reptiles, amphibians and nesting birds.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	






TR3.TN110	
<p>Dense marshy grassland with a tall sward (40cm), dominated by soft rush and sharp flowered rush. Additional species include Yorkshire fog, bent grass, marsh thistle, common mouse ear, willowherb species, bird's-foot trefoil, springy turf moss, common sorrel, red fescue, crested dog's-tail, creeping buttercup and mat grass. Standing water is present in low lying sections, however, there are some slightly drier hummocks dominated by shorter fine leaved grasses.</p> <p>Brown hare confirmed to be present during the survey and small mammal holes are present throughout. Suitable for ground nesting birds, small mammals, reptiles, amphibians.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN111	
<p>Snipe flushed from marshy grassland. Suitable ground nesting bird habitat.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN112	
<p>A large and unsheltered pond, which is exposed within the landscape with a small island at the western side. It is fringed by locally dominant stands of soft rush. The pond is fenced to one side, with an access track to the other side and some areas of recently disturbed/re-graded ground. The banks are vegetated with marginal species. Nearby stacked pipes suggests recent drainage works. Wildfowl impacts in the form of grazing and trampling were noted.</p> <p>Suitable for nesting birds and amphibians. eDNA assessment undertaken in Spring 2019 found no evidence of great crested newt.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	






TR3.TN113	
	<p>Marshy grassland dominated by soft rush, sharp flowered rush and tufted hair grass with <i>Polytrichum</i> moss, heath rush, heath bedstraw, bent grass, mat grass, springy turf moss and barren strawberry. Vehicle tracks are present throughout the habitat; the tracks also cross ditches within the grassland. Tyre rutting and waterlogged patches occur where <i>Sphagnum</i> spp. Are locally abundant. It is located on a southward facing slope and is bordered by steeply sloping upland habitat with the vegetation dominated by bracken (beyond a dry stone wall).</p> <p>Potential habitat for reptiles, ground nesting birds and amphibians. Brown hare confirmed to be present during the survey.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN114	
	<p>Japanese rose (<i>Rosa rugosa</i>); a Schedule 9 WCA invasive species.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>
TR3.TN115	
	<p>Recently excavated ground with large surrounding spoil heaps. This area has possibly been excavated for the creation of a new pond. There are pools of standing water, although these could be due to recent heavy rain at the time of the survey. This area is surrounded by marshy grassland.</p> <p>Suitable habitat for ground nesting birds, reptiles, amphibians and brown hare.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>




TR3.TN116	
	<p>A bund vegetated with tall ruderal vegetation. Dominated by common nettle with soft rush, tufted hair grass, rosebay willowherb, foxglove, creeping thistle and bent grass. There is an abundance of brash and deadwood which are heavily moss covered. Some scattered scrub is present and includes rose, ash saplings and blackthorn.</p> <p>The area provides suitable habitat for nesting birds, reptiles, amphibians, small mammals and brown hare.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN117	
	<p>Large piles of rock, stone, gravel and manure which lie adjacent to marshy grassland. The rock piles are weathered and vegetated with ephemeral short perennial vegetation and mosses.</p> <p>Suitable habitat for nesting birds, reptiles, amphibians. Likely to be subject to high level of disturbance due to nearby construction work.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>
TR3.TN118	
	<p>A recently planted hedgerow on a small grassy bund, with a parallel ditch. The hedgerow and ditch are fenced on both sides and surrounded by species-poor semi-improved grassland. The hedgerow canopy species include hawthorn (dominant), blackthorn, hazel, hawthorn, elder and holly. The tree guards are still present and there is evidence of small mammals (runs) within the undergrowth. The ground flora is dominated by tufted hair grass. The western section of the ditch is dry and bound by a barbed wire fence, and the eastern section flows through a species-poor semi-improved grassland field and flows into a watercourse (TR3.WC76).</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>

TR3.TN119	
<p>An immature broadleaved plantation woodland. The canopy species include alder, silver birch, ash and oak. There is no understory/shrub layer present. The ground flora comprises neutral semi-improved grassland, and the species present include tufted hair grass, cock's-foot, soft rush, ribwort plantain, Yorkshire fog, marsh thistle, fescue sp., meadow buttercup and purple moor grass.</p> <p>Nesting bird and small mammal potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN120	
<p>Brown hare observed in field.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN121	
<p>Spoil heaps with some exposed rocks, gravel and boulders – the vegetated sections are colonised by fast growing grasses, ephemeral vegetation and some tall ruderal are also present. Species include; meadow grass sp, soft rush., Yorkshire fog, creeping buttercup, mouse ear chickweed, bittercress sp, tufted hair grass, common nettle, brooklime (damper areas), creeping thistle and willowherb sp. On some south facing slopes, however, the vegetation is short and sparse. Silty standing water is present on top of the spoil heaps.</p> <p>Nesting bird and small mammal potential. Some reptile potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	






TR3.TN122	
<p>Three snipe flushed from grassland. Ground nesting bird potential.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN123	
<p>Two brown hare observed in field. Suitable habitat for forms.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN124	No photo
<p>A newly planted hedgerow with tree guards present. Planted species include gorse, holly, blackthorn, hazel, rowan, rose sp. and elder. It has been planted on a shallow bund with scattered alder (mature) scrub. The ground flora comprises neutral grassland with species including; tufted hair grass, meadow grass sp, fescue sp and creeping buttercup.</p> <p>Nesting bird potential and small mammal potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN125	
<p>A newly planted hedgerow, with tree guards present. Planted species include gorse, holly, blackthorn, hazel, rowan, rose sp. and elder. It has been planted on a shallow bund with scattered mature alder scrub. The ground flora comprises neutral grassland with species including tufted hair grass, meadow grass sp, fescue sp and creeping buttercup.</p> <p>Nesting bird potential and small mammal potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	

TR3.TN126	
	<p>A corrugated metal agricultural building. The roof is corrugated metal with transparent plastic corrugated skylights. The roof is unlined and there is open access at the top of the barn doors for birds and bats. Internally the building is considered to have negligible potential for bat roosting. Nesting bird potential.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>
TR3.TN127	
	<p>A single-storey rendered United Utilities building with a pitched slate roof. There are gaps present beneath the ridge tiles on the southern elevation and numerous raised roof slates. There are also gaps along the roof verges at both gable ends. There is damaged brickwork on the western gable. Connectivity to wider landscape is limited to scattered scrub on the exposed field boundaries. Overall low bat roosting potential. No evidence of hirundine nests.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>
TR3.TN128	
	<p>A single-storey, yet tall, stone building which functions as a United Utilities operational building. It has metal doors and louvered window vents which are sealed internally. The walls are stone with rendered sections and the roof is pitched with stone slates and ridge tiles. There are gaps along the roof verges on both gable ends and minor gaps under some raised roof slates. Old hirundine nests were noted to be present on the southern elevation. Connectivity is limited to scattered scrub at field boundaries. The building is exposed on a south facing steep slope and surrounded by species-poor semi-improved grassland. Low bat roosting potential. Nesting bird potential.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>

TR3.TN129	
<p>Mammal burrow within grassland adjacent to building identified as a rabbit hole.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN130	
<p>A single storey brick building with a flat concrete roof. The building is open on the southern elevation and the rear elevation wall is partially collapsed. The brick walls are three courses thick with vertical gaps in the mortar between the layers. There are small ventilation square gaps on the east and west elevations, with access to brickwork gaps. There are gaps at the wall and roof joints. Overall low bat roosting potential. Nesting bird potential.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.TN131	
<p>A gently sloping roadside verge vegetated with mature scrub and scattered trees including hawthorn and ash. The ground flora comprises tall ruderal and herb species including rosebay willowherb, ivy, creeping buttercup, bracken, lords and ladies, herb , Yorkshire fog, cleavers, creeping thistle, oxeye daisy, bramble, common sorrel, common chickweed, common nettle, tufted hair grass and common hogweed. There is an associated very old dry stone wall with heavy bryophyte coverage.</p> <p>Nesting bird potential, bat foraging habitat and habitat for small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	



TR3.TN132	
<p>A fenced, hay bale storage area which has a shallow vegetated bund on the eastern edge with tall ruderal vegetation with willowherb species being dominant.</p> <p>Potential for nesting birds and small birds.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN133	
<p>A mixed plantation woodland on a steep north-facing embankment slope of the River Hodder (TR3.WC80). The canopy species include ash, hazel, oak, alder and sycamore. The understory is dense in places and comprises hawthorn, hazel and holly. The ground flora is grassland dominated and includes purple moor grass, tufted hair grass, common nettle, cock's-foot, bramble, willowherb sp., abundant mosses and lichens. There is abundant fallen deadwood and brash. There are some small gaps in the canopy but generally the canopy is enclosed. There has been some recent replanting with tree guards still present.</p> <p>The habitat is suitable for bats (roosting, commuting, foraging), small mammals, badger, amphibian refugia and nesting birds. At the water edge the woodland is suitable for otter couch/laying-up sites and potentially holt locations between tree roots at the water side.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN134	

An area of semi-improved acid grassland which is less intensively managed than the surrounding fields. To the north of the field there is a steep, species-rich slope vegetated with abundant lesser celandine, creeping thistle, common hogweed, cow parsley, Yorkshire fog, chickweed, teasel, lords and ladies and meadow buttercup. The grassland is lightly sheep grazed and evidence of rabbit grazing was also noted.

Potential for nesting birds.

Habitat Condition (provisional): Moderate (Score 2).

TR3.TN135



A defunct hedgerow which consists of scattered hawthorn scrub and hawthorn trees which has been previously laid. The surrounding habitat is sheep grazed species-poor semi-improved grassland.

Nesting bird potential.

Habitat Condition (provisional): Poor (Score 1).

TR3.TN136






Stone structure supporting the aqueduct as it crosses the River Hodder (TR3.WC80). Close inspection of the southern structure was possible, although there was no access to the northern structure. The southern structure is damp throughout and there are small areas of mortar loss. One Potential Roosting Feature (PRF) is present on the north west stepped corner, at the top of the wall, at a height of approximately 4 m and which appears to extend internally giving the structure moderate bat roosting potential. Adjacent to the west of the northern structure a culvert pipe was visible which has suitable access for bats over/through the metal gate.




Habitat Condition (provisional): Not applicable (no assessment required).




TR3.TN137






Ground nesting bird potential in species-poor semi-improved grassland field. Habitat Condition (provisional): Not applicable (no assessment required)		
TR3.TN138		
Rocky outcrop within species-poor semi-improved, sheep-grazed field. The outcrop has nearby large piles of exposed stones and some rubble which provides suitable refugia for reptiles and nesting birds. Habitat Condition (provisional): Not applicable (no assessment required)		
TR3.TN139		
Broadleaved semi-natural woodland which comprises mature trees on a steep valley slope adjacent to TR3.WC81. The canopy is largely continuous and there are some areas of deadwood. Some branches overhang into the survey area, although these have negligible bat roosting potential. The woodland provides suitable habitat for nesting birds, badgers, bat roosting, foraging and commuting. Habitat Condition (provisional): Moderate (Score 2)		
TR3.TN140		
Species-rich marshy grassland on a gentle east facing slope. The area is lightly sheep grazed. Species include scattered <i>Sphagnum</i> , <i>Polytrichum</i> , soft rush, sharp flowered rush, jointed rush, sheep's fescue, springy moss sp., marsh bedstraw, sedge species, mat grass, tormentil, and lichen species. The <i>Sphagnum</i> mosses increase in abundance further west. Potential for amphibians, brown hare, small mammals and ground nesting birds. This target note is situated within Goodber Common BHS. Habitat Condition (provisional): Moderate (Score 2)		









TR3.TN141	
<p>Piles of stones of different sizes by the side of the access track. Total area is approximately 2 x 3m. Suitable for reptiles and nesting birds. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN142	
<p>Ditch running alongside access trackway, which is shallow and dominated by marshy grassland. There are small areas of standing water with brooklime in pools. This target note is situated within Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.TN143	
<p>An area of marshy grassland within a dry pond. The grassland is grazed by livestock, keeping the sword short; there is evidence of poaching. The field has recently received an application of manure. The dominant species is soft rush with sweet vernal grass, white clover, creeping buttercup, cuckoo flower and dandelion. Potential habitat for nesting birds.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.TN144	No photo.
<p>Brown hare present within marshy grassland with lapwing flying overhead. Suitable habitat for brown hare forms and ground nesting birds.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	

TR3.TN145	
<p>Two large rubble piles within species-poor semi-improved field. Bare earth, corrugated metal sheeting and scattered vegetation creates suitable pockets within the mound for mammals, reptiles, amphibians and nesting birds.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN146	
<p>Two small areas of marshy grassland on the banks of an historic ditch, now dry. The marshy grassland is within an species-poor semi-improved, grazed field. The habitat is dominated by soft rush with other species including sweet vernal grass, creeping thistle, meadow buttercup and cuckoo flower. Potential habitat for nesting birds.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN147	No photo.
<p>Rabbit burrows under a mature ash tree on the field boundary. Multiple holes around and under tree.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN148	
<p>Small area of marshy grassland comprising of abundant soft rush surrounded by grazed semi-improved grassland. Potential habitat for small mammals and nesting birds.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	

TR3.TN149	
<p>Area of wet ground that is irrigated by spring water flow from upslope and located within a permanent pasture on the edge of the River Hodder (TR3.WC80) floodplain. The habitat is dominated by lesser pond sedge (<i>Carex acutiformis</i>) with occasional marsh marigold, meadowsweet, nettle, and soft rush. The southern section of TR3.WC85 runs through the area and has an indistinct channel.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.TN150	
<p>Small area of marshy grassland dominated by soft rush surrounded by grazed semi-improved grassland.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.TN151	No photo.
<p>Brown hare seen in field. Suitable habitat for forms.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
TR3.TN152	
<p>Large brash pile composed of tree limbs, corrugated iron sheets and old wooden stock fencing. Common nettles present around base. Small mammals, including hedgehog and nesting bird potential.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	



TR3.TN153	
<p>Tall ruderal vegetation atop a mound, which is approximately 1 m high. Common nettle dominates the vegetation.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.TN154	
<p>Small area of semi-improved neutral grassland located to the north west of the River Hodder (TR3.WC80). Grass species dominate and also present are occasional meadow sweet, sedge species, abundant rosswort (<i>Cruciata laevipes</i>) and rare speedwell species.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.TN155	
<p>Broadleaved plantation woodland. Dominated by mature beech, also present are immature/semi-mature ash, wych elm (<i>Ulmus glabra</i>) and hazel. The understorey is largely absent, however, locally abundant raspberry (<i>Rubus idaeus</i>) and hawthorn were recorded. Ground flora is dominated by grasses, including; meadow foxtail and sweet vernal grass. Also present are locally abundant English bluebell, stitchwort, red campion, hawthorn saplings, lords and ladies, yarrow, crosswort, lesser celandine and hedge woundwort. Alder trees are present where the woodland meets the River Hodder (TR3.WC80), and the ground flora is more diverse here with species recorded including wild garlic, meadow sweet, common bistort and sedge species. Suitable habitat for nesting birds, large mammals (including badger) and foraging/commuting/roosting bats.</p>	

Habitat Condition (provisional): Moderate (Score 2)	
TR3.TN156	
<p>Three small spring head mounds set in a large patch of dense rushes at the edge of sheep grazed semi-improved acid grassland. Gentle slope facing south approximately halfway down the field. Abundant pointed spear moss (<i>Calliergonella cuspidata</i>), brooklime and common sedge with some ragged robin. The rushes are dominated by soft rush and hard rush with frequent meadowsweet, hairy sedge (<i>Carex hirta</i>), greater birds foot trefoil, cuckoo flower, spear moss, common sorrel, meadow vetchling, square stemmed St John's wort (<i>Hypericum tetrapterum</i>), common sedge, ribwort plantain, meadow buttercup, lesser celandine and great willowherb. The vegetation has a tussocky structure which is at knee height and provides suitable habitat for small mammals, brown hare and nesting birds. Lightly grazed at the edges and lightly poached.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<b>Watercourses</b>	
TR3.WC1	
<p>A shallow, slow flowing stream between a row of mature trees and roadside hedgerow. The width is less than half a metre, and the depth is less than 5 cm. The banks are steep earth and are bare of vegetation, with rocks and dead wood abundant. There appears to be a drain present as broken clay pipes were observed. It is not fenced from the adjacent sheep grazed field and therefore heavily poached. It possibly flows beneath a road and the watercourse is likely heavily shaded when the trees are in leaf. Unsuitable for water vole (<i>Arvicola amphibius</i>), otter (<i>Lutra lutra</i>) and white-clawed crayfish (<i>Austropotamobius pallipes</i>).</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC2	



A shallow roadside ditch with a slow flow of water, with accumulated mud, leaf litter and dead wood present. It is densely shaded by an adjacent hedgerow to the east and further scrub and trees to the west along the roadside. It flows into a small stone culvert. The earth banks are shallow and are sparsely vegetated with shade loving vegetation such as ivy, lords-and-ladies and dog's mercury. The water is clear but the flow is very limited. Scrub shading the watercourse from the west comprises hawthorn, sycamore, hazel, bramble, blackthorn and oak. The ground flora comprises dog's mercury, primrose, lords-and-ladies, common male fern, herb Robert and cleavers. The banks become steeper towards the south where they are approximately 2 to 3 m in height. The surrounding wooded area widens towards the south and includes a couple of mature oak trees. There is negligible potential for protected species.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC3



A shallow roadside ditch which is silted up with mud and accumulated leaf litter. It is approximately 1.5m wide and without clearly defined banks as such, it just grades into the adjacent vegetation. The watercourse is shaded by trees and scrub from TR3.TN11 including oak, blackthorn, hawthorn and willow. The depth is a few centimetres and flow is very limited. The water clarity is good. Vegetation within ditch comprises meadowsweet, brooklime, rosebay willowherb, forget-me-not sp., water starwort (*Callitriche* sp.), horsetail sp. and flag iris (*Iris pseudacorus*). On the banks, common nettle, creeping buttercup, daffodil, primrose, lungwort (*Pulmonaria officinalis*), garlic mustard, crane's-bill species (*Geranium* sp.), chickweed, red campion, ground elder (*Aegopodium podagraria*), herb Robert, wood sorrel and Italian lords-and-ladies (variegated form) (*Arum italicum*) are present. On the muddy margins, small mammal prints were noted, the size of mouse or bank/field vole. This watercourse is opposite the garden of a residential property so ornamentals may have been planted/escaped. Negligible protected species potential.

Habitat Condition (provisional): Poor (Score 1).



TR3.WC4






A 1 m wide watercourse (stream) with a moderate to fast flow of clear water with a depth of approximately 5 cm. There are moss covered boulders and cobbles within the channel itself. The banks are fairly steep and comprise earth and boulders. The base of the watercourse is stones and pebbles. The banks are unshaded for the majority of section within survey area with three trees located at the road end. The banks are vegetated with marsh marigold, opposite leaved golden saxifrage, water avens, lesser celandine, large bittercress, valerian, herb Robert, common nettle, wood sorrel, wood avens, common male fern and meadowsweet. The eastern bank is relatively grassy with a few small mammal holes noted. There is some bankside scrub and saplings including ash, holly and elder. Otter may commute along the watercourse but there is no couch or holt potential as the cover is sparse. There is also potentially suitable habitat for salmonids, bullhead white-clawed crayfish and water vole. Numbered nest boxes are located on trees to the south.




Habitat Condition (provisional): Moderate (Score 3).






TR3.WC5	
<p>A narrow ditch approximately 30 cm wide and unfenced from the surrounding rush pasture. As such, the banks are poached. The ditch is unshaded with only occasional bankside mature oak trees. The water flow is moderate and depth is up to 10 cm. Water clarity is good and the substrate is silty. There is some filamentous algae within the water column. The banks are 0.8 m high and vegetated with grasses and patches of soft rush with common nettle. The ditch flows into a circular pipe beneath the road. It is a marshy seepage inflow into the watercourse from the adjacent field which originates from a pipe set in a concrete block. There are patches of aquatic vegetation including floating sweet grass (<i>Glyceria fluitans</i>), water starwort species, crowfoot species (<i>Ranunculus sp.</i>), brooklime and, at the water's edge, blinks. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.WC6	
<p>A ditch which flows beneath the road. There are occasional bankside hawthorn but other than that the watercourse is unshaded. To the east the watercourse is approximately 1 m wide with a moderate flow of clear water, to a depth of 10 to 15 cm. The banks are tall in places, up to 2 to 3 m and steep sided, comprised of mud and rocks. The banks are vegetated with the species of the surrounding field i.e. dominant soft rush. The base of the stream comprises rocks of various sizes and it is unfenced from adjacent sheep-grazed fields. To the west of the road the channel is less rocky and densely vegetated with soft rush such that the channel is indistinguishable in places. In slower flowing sections, particularly where the stream changes direction abruptly and flows along the edge of the road there are shallower sections vegetated with the same species as at TR3.WC5 i.e. crowfoot sp., floating sweet grass, blinks and water starwort species. A pair of snipe were flushed from the banks during survey. Potential nesting bird habitat. Potential for water vole or potential reintroduction site to provide net gain. Some potential for white-clawed crayfish in sections. Otter may forage and commute through the watercourse but there are no suitable holt or couch locations in the survey area.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	



TR3.WC7	
<p>A ditch which is unfenced from the adjacent sheep-grazed field, therefore heavily poached and widened in places where it is accessed for drinking water by livestock. Upstream it emerges from a spring and is approximately 0.5 m wide with shallow earth banks densely vegetated with soft rush and common nettle. The channel is indistinguishable in places due to the dense soft rush cover. Further downstream where it changes direction there are occasional bankside trees and scrub including silver birch and hawthorn. Blinks and bittercress sp. are present at the water's edge. The ditch has potentially suitable habitat for water vole. Otter may forage and commute through the watercourse but there are no suitable holt or couch locations.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.WC8	
<p>An almost-dry ditch that is unfenced from the adjacent field and heavily poached in places. At the time of the survey there was no flowing water, just wet patches at the base of the channel. It is approximately 30 cm wide with a muddy base. The shallow banks are vegetated with tussocky soft rush, dock and grasses. There is negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC9	
<p>A small ditch following a tree line which pools in the east. The banks are shallow and cattle poached. Geese are present on the pooled bank at the bottom. There is some brash in the water and emergent vegetation is sparse; bittercress species, lesser celandine, buttercup, soft rush and common nettle. The depth is 10 cm (max) and the water is clear. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	






TR3.WC10	
<p>An outflow ditch from an operational building. The channel is difficult to distinguish due to abundant soft rush and grass cover and shading by scrub. The water has a slow flow and is only a few centimetres deep. The banks are cattle poached and vegetated with a continuation of species from adjacent field. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.WC11	
<p>A small, shallow ditch parallel to the field boundary. Almost dry with no emergent vegetation, only that of the adjacent field. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC12	
<p>An unfenced, poached stream within a sheep grazed field. The banks are shallow and vegetated with species of the adjacent field. The stream is approximately 30 cm wide with a base of bedrock, cobbles and pebbles. The water is clear with a moderate flow with occasional bankside scrub. Upstream, the channel is overgrown with soft rush. Further upstream again where it crosses a field boundary it becomes stagnant with small pools in the base of the ditch. Here the stream is bordered by occasional scrub and bankside mature alder which have negligible bat roost potential but are very old and gnarled at the base. White-clawed crayfish potential in the downstream section at the limit of survey area. If present, could therefore represent a foraging resource for otter.</p>	



Habitat Condition (provisional): Moderate (Score 3).	
TR3.WC13	
<p>A steep-sided stream, fenced on one side. It is lined and shaded with mature trees and scrub comprising apple (<i>Malus</i> sp.), ash, hawthorn, willow and holly. The water is moderate to fast flowing and has a rocky base with small slabs, cobbles, pebbles and gravel. The banks are bare in places due to shading but are patchily vegetated with primrose, common nettle and foxglove. The water is clear and is approximately 0.80 m wide and meandering. White-clawed crayfish potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC14	
<p>A steep sided, fast flowing watercourse (stream) unfenced from the adjacent sheep grazed pasture. It has rocky banks and the base is poached. There are bankside patches of soft rush and marsh thistle with some occasional trees and scrub. The earth cliff banks have eroded in places. White-clawed crayfish potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC15	
<p>A marshy indistinct ditch channel with a slow to stagnant flow of water. The watercourse is poached with shallow banks. There are some bankside scrubby trees creating some shading. The banks are vegetated with bittercress sp., soft rush but no aquatic species were noted. There was also evidence of some recent reprofiling. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	

TR3.WC16	
<p>A ditch approximately 0.5 m wide with shallow banks vegetated with soft rush and grasses. Aquatic species include pond water crowfoot (<i>Ranunculus aquatilis</i>) and pondweed (<i>Potamogeton</i> species). There is no bankside cover. The ditch may also have been recently profiled. A pipe culvert is located along the roadside and under the road two pipes are located where water flows in from two directions. As such, the ditch forms a junction of several ditches and is widened with a fast flow of water, with mud and gravel beds. The banks are vegetated with abundant soft rush, foxglove and coarse grasses. Further downstream near a farm there is still a moderate to fast flow of water with earth banks, 0.8 m wide. Potentially suitable habitat for water vole.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.WC17	
<p>A continuation ditch of TR3.WC6. Upstream section which has a moderate to fast flow. The banks are sloping and hummocky. The ditch is unfenced and parallel to a roadside track. In-channel vegetation comprises floating sweet grass, <i>Sphagnum</i> moss, <i>Polytrichum</i> moss, soft rush and springy turf moss. Bankside vegetation includes soft rush, foxglove, <i>Sphagnum</i> moss, <i>Polytrichum</i> moss, bilberry, heath bedstraw and marsh bedstraw. The banks are peaty and collapsed/eroded in places. There is a shallow bank on the roadside but up to 1 m on the field side. The watercourse is open and unshaded. Negligible protected species potential. This watercourse (or a section of it) flows through Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	



TR3.WC18	
<p>A shallow and very slow flowing peaty stream. Man-made feature which has been recently dug. No emergent vegetation. Negligible protected species potential. This watercourse (or a section of it) flows through Goodber Common BHS.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC19	
<p>A shallow very slow-flowing/stagnant ditch. It is heavily vegetated with soft rush and abundant bryophytes including <i>Sphagnum</i> moss. The shallow banks have been recently dug out with spoil on the banking. It is possibly dry for some parts of the year. This ditch joins up with TR3.WC17. Negligible potential for protected species. This watercourse (or a section of it) flows through Goodber Common BHS.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC20	
<p>A heavily vegetated ditch with ochreous deposits in the water. The in-channel vegetation includes floating sweet grass, pond water crowfoot, pondweed species and water starwort species. It is 0.8 m wide with earth and rock banks. The</p>	



banks are steep and 0.75 m tall. Bankside vegetation includes bittercress sp., blinks, foxglove, chickweed, creeping thistle, frequent common nettle and abundant soft rush. The water is clear but heavily coloured/peaty. It is also poached and fast flowing. It appears to have been recently dug out with spoil on the bankside. There is abundant algae and a greasy film on the water surface. The water is stagnant in places and becomes dry at the upstream section. Potential for water vole but no cover to provide holt/couch locations for otter. Snipe flushed out during survey (potential nesting bird habitat). This watercourse (or a section of it) flows through Goodber Common BHS.

Habitat Condition (provisional): Poor (Score 1).

TR3.WC21



A ditch which joins TR3.WC20. It is fenced and inaccessible to livestock. It has a moderate flow and is heavily vegetated with soft rush. It has short but vertical banks which comprise bare earth. Within the channel floating sweet grass, water starwort species and pondweed species were noted. Bankside vegetation includes soft rush, foxglove, liverworts, *Polytrichum* moss, marsh thistle and chickweed. It has a moderate flow of ochreous water. There is dredged spoil on the banks, as the ditch appears to have been recently reprofiled. There is also a short spur of defunct ditch at the northern end. The ditch continues upstream to the east where it becomes narrow with banks less tall and eventually terminates in a marshy seepage vegetated with soft rush, blinks, sweet vernal grass, marsh thistle, water starwort, algae, and mosses including *Sphagnum*, there is also a greasy film on water,. This area is bordered by marsh grassland. Negligible protected species potential. This watercourse (or a section of it) flows through Goodber Common BHS.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC22



A narrow, slow-flowing field drain which joins with TR3.WC20 and likely to join TR3.WC18 underground. It is a short section of ditch with limited in channel vegetation. It has shallow sloping banks vegetated with grasses and soft rush. The upstream eastern end is stagnant. *Sphagnum* mosses area abundant on the recently reprofiled banking. Negligible protected species potential.

Habitat Condition (provisional): Poor (Score 1).

TR3.WC23



A defunct roadside ditch with very limited water. Grasses and soft rush growing through the depression. Negligible protected species potential.

Habitat Condition (provisional): Poor (Score 1).

TR3.WC24



A small section of a slow flowing ditch with sloped earth banks vegetated with grasses and scrub to one side causing some shading. The water is heavily coloured and vegetation is choking channel (floating sweet grass, pond water crowfoot). The banks are vegetated with dense soft rush, foxglove and common nettle. In channel yellow flag, blinks, water mint and water starwort species were noted. The channel narrows to approximately 15 cm in places. Downstream it flows into a ponded section, across a track and then into a very steep sided tree lined valley where the earth banks have collapsed in places. There are tree roots exposed on the bank. Here the substrate comprises boulders and rocks which are moss covered. This section provides white-clawed crayfish and otter potential, at very limit of survey area.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC25



A rocky stream at the base of a steep sided, wooded valley. The channel is approximately 0.6 to 0.8 m wide and the water depth is approximately 10 cm. There are moss covered boulders and rocks in the channel along with brash and flood debris. The banks are extremely steep and wooded with beech, silver birch, oak, rowan, holly, sycamore and there are carpets of bluebell. Tipped farm debris such as rolls of wire fencing is present in some areas. Further upstream the banks are shallower and fringed with a band of soft rush. To the south of the road, the ditch is tree lined with willow and conifers, alongside a band of rush along the margins of the stream. The channel is indistinct in places and fenced to both sides. Ochreous deposits and very slow trickle of running water were noted. The upper reaches have water vole potential, and potential for otter holts and couches as there is cover in the adjacent woodland. There is potential habitat for white clawed crayfish in some sections of the watercourse. This watercourse (or a section of it) flows through Goodber Common BHS.

Habitat Condition (provisional): Moderate (Score 3).




TR3.WC26






Similar to TR3.WC25 – a steep sided valley with small stream running at the base. The banks are wooded with mature trees comprising silver birch, rowan, oak and beech. The base is rocky and choked in places with timber debris. The watercourse is a short tributary to TR3.W25. It flows for a short section outside the woodland before joining another watercourse within the woodland. There is accumulated leaf litter in the base of stream. Some beech of significant size approx. 2 m at diameter chest height are present. Otter and white clawed crayfish potential.


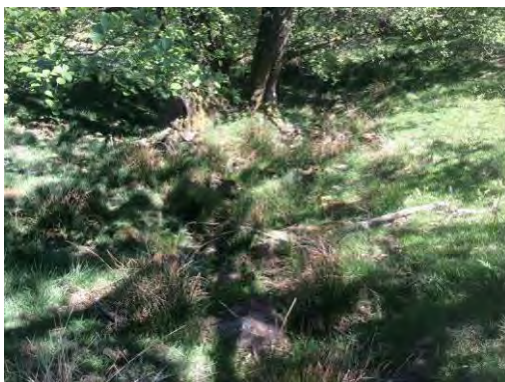

Habitat Condition (provisional): Moderate (Score 3).






TR3.WC27	
	<p>A stream which has some shading from bankside holly and hawthorn scrub, with a dense band of soft rush on the banks. The earth banks are poached and collapsed in places as the stream is unfenced on one side and open to livestock. The banks are also overhanging in places. The channel is vegetated with floating sweet grass and the banks are vegetated with foxglove, common sorrel, common male fern and hard fern. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>
TR3.WC28	
	<p>A defunct roadside ditch not currently holding water. The channel is vegetated with soft rush and desiccated <i>Sphagnum</i> moss. The ditch is approximately 30 cm wide with peaty, shallow banks. It flows under the road; in the downstream section to the east it holds water and is a marshy, soft rush lined channel. This feature connects to TR3.WC27. It is a dry gully in its upper reaches to the east of road. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>
TR3.WC29	
	<p>A small watercourse with a trickle of water present and collapsed earth banks that are shaded by bankside willow and silver birch. It flows into a pipe culvert under a road. It has vertical cliffs and is vegetated with soft rush and Yorkshire fog; the channel is relatively indistinct in places. To the south of road, i.e. upstream, the water is almost stagnant, with greasy film on surface and abundant dead soft rush. It becomes marshy and indistinct in places where it is poached as it is unfenced on both sides. Filamentous algae and abundant bryophytes including <i>Sphagnum</i> moss are present within the channel. The gully has widened through erosion. Potentially suitable habitat for water vole.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>

TR3.WC30	
<p>A channel with steep earth cliffs which are collapsed in places. Potentially suitable habitat for water vole.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC31	
<p>In the upper reaches near the limit of survey area, the channel of this watercourse (stream) is indistinct and overgrown with soft rush. The earth banks are poached and collapsed in places and a very slow flow of water is present which is heavily coloured. Further downstream there are rocks and cobbles and boulders within banks which are overhanging in places. The width is variable but up to 0.80 m in places and up to 10 cm deep with the bedrock occasionally exposed. The banks are vegetated with marsh thistle, greater bird's-foot trefoil, common male fern, foxglove and <i>Sphagnum</i> sp. Some white-clawed crayfish potential and water vole potential. Otter may move though this watercourse but there is little cover to provide suitable couch/holt locations. This watercourse (or a section of it) flows through Goodber Common BHS.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC32	
<p>Well Beck – a steep sided rocky and fast flowing stream which is shaded by bankside woodland and trees. It has a moderate flow of clear water, and the depth is variable but no more than 10 cm. It flows within a valley with exposed bedrock and small waterfalls. The woodland sections are heavily shaded. The substrate comprises a mixture of boulders, cobbles and gravel. There are some areas of undercut tree roots and banks. Species composition is similar to those described in TR3.TN55 with additional opposite leaved golden saxifrage. There is a small stagnant tributary stream within woodland to the north. Potential white-clawed crayfish, otter commuting and holt habitat. Salmonid and bullhead potential.</p>	



Habitat Condition (provisional): Good (Score 5).	
TR3.WC33	
<p>A steep sided, rocky based stream within a wooded valley. Shaded. It has a very slow flow of water and is shallow (less than 20 cm deep). Within the channel are mossy covered rocks. The stream potentially has a greater flow at other times as the survey was undertaken within a period of limited rainfall. Trees and scrub border the watercourse. To the north beyond a road the stream is completely dry and open. There is a bird nest box scheme in trees along the banks. White-clawed crayfish and otter potential. Also potential for salmonids.</p> <p>Habitat Condition (provisional): Good (Score 5).</p>	
TR3.WC34	
<p>A very minor watercourse (stream) which emerges from the ground beneath a tree line. It has a rocky substrate with very limited water. The surrounding vegetation includes tall ruderal vegetation and bracken with frequent lesser celandine, soft rush and marsh thistle. The watercourse is sheep poached at the edges. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC35	
<p>A minor ditch within a field, with a rocky substrate with very minor flow of water and poached at the edges. Bankside vegetation includes lesser celandine, opposite leaved golden saxifrage, bittercress sp., blinks, marsh thistle, soft rush, meadowsweet, bracken, foxglove and common nettle. Downstream it emerges into broadleaved woodland. It is shaded by a mature tree line. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	



TR3.WC36	
<p>An indistinct grassy ditch channel adjacent to a hedgerow. Species within the channel include soft rush, greater stitchwort, Yorkshire fog, cleavers, marsh thistle, marsh marigold, common sorrel, meadowsweet, blinks, broad-leaved dock, common mouse ear, horsetail species, sweet vernal grass and broad buckler fern. It was dry at time of survey in the downstream section but upstream it becomes wetter with a very slow flow. It is poached at the margins, with some cobbles and boulders within the channel. There is nearby marshy grassland to the west. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.WC37	
<p>A tributary of Mill Beck. Approximately 8 m wide and flowing over exposed bed rock. At the time of the survey the watercourse had a low water level but some pooled areas. The banks are undercut and there are exposed roots, mossy areas and some fallen deadwood from the adjacent broadleaved woodland, which shades the margins of the watercourse. The clear water is silted at the bottom of the pools. In channel there are some cobbles and boulders. Suitable otter holt and couch habitat as well as a likely foraging resource. Potential for salmonids and white-clawed crayfish.</p> <p>Habitat Condition (provisional): Good (Score 5).</p>	
TR3.WC38	

A marshy, indistinct defunct ditch meandering through a sheep grazed field. It lies adjacent to a dry stone wall. The banks are up to 0.5 m in height, earth and vegetated with grasses, soft rush, common nettle and marsh thistle. The ditch was dry at time of survey but may hold water at other times. The channel is approximately 20 cm wide. Potential water vole habitat.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC39



In the upper reaches of this watercourse (stream) at the limit of survey area this feature is dry and lined by mature larch. The lower reaches have a very slow flow of water. It is approximately 1-1.5 m wide with boulders, rocks and cobbles within the channel. The downstream section is tree lined with broadleaved trees and there is some overhanging fallen deadwood. Otter holt and foraging potential and white-clawed crayfish potential.

Habitat Condition (provisional): Moderate (Score 3).

TR3.WC40



A small marshy watercourse in a steep grassy valley. The banks of the gully/valley are up to 3 m and are steeply sloping and vegetated with acid grassland. The earth banks of the channel itself are 0.5 m in height and undercut. The channel is gravel and rock lined with a few pockets of stagnant water present. However, there may be flow during higher rainfall. The banks are vegetated with a dense band of soft rush and marsh thistle. Water vole potential but limited by lack of water and how often this occurs.

Habitat Condition (provisional): Moderate (Score 3).

TR3.WC41





A dry ditch at the edge of a coniferous woodland plantation within a marshy grassland field. There is some nearby scattered hawthorn and holly scrub. The substrate is a mixture of gravel and cobbles. The vegetation surrounding the channel includes soft rush, greater stitchwort, sweet vernal grass, Yorkshire fog, common sorrel, wood sorrel, male fern, tufted hair grass, marsh thistle and foxglove. The in-channel vegetation is overgrown and dominated by soft rush and there are occasional pockets of vegetation including herb Robert and opposite leaved golden saxifrage. There are some shallow pools of stagnant water of an unknown depth. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC42



A small rocky/rushy indistinct ditch channel which joins TR3.WC37 in the upper reaches. Some nearby broad-leaved trees creating shade. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC43



A narrow channel flowing down into a small valley. It is approximately 30 cm wide with a very slow flow. It is overgrown with soft rush and some opposite leaved golden saxifrage, creeping buttercup, and bryophytes. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 3).

TR3.WC44





A narrow, slow flowing ditch at the edge of a horse paddock. There is little to no water in places, and it is poached at the margins. Downstream it flows within sheep pasture where there is abundant soft rush. There is also abundant broad-leaved dock and foxglove within the edges of the horse paddock. There is no emergent vegetation. Within the marshy section there is occasional water starwort sp., foxglove, marsh thistle, willow herb, marsh pennywort and common nettle in the stagnant water. The width ranges from 20-50 cm and there is evidence of small mammal use along the ditch embankments (rabbit holes). Negligible protected species potential.

Habitat Condition (provisional): Poor (Score 1)

TR3.WC45



A small and shallow ditch alongside a field boundary which is approximately 30 cm wide. The in-channel vegetation includes great willowherb, soft rush, blinks, bittercress species and floating sweet grass. The bankside vegetation includes bracken, greater stitchwort, soft rush, greater bird's-foot trefoil, common sorrel, Yorkshire fog, bittercress species, meadow foxtail, common bent, red clover, common mouse ear, chick weed, yellow rattle and sweet vernal grass. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC46



A ditch which is dry in the upstream section, adjacent to a tree line and fence. The ditch is approximately 0.5 m wide, with abundant soft rush adjacent to the ditch. The bordering habitat is semi-improved grassland and locally dominant soft rush. Further downstream the ditch is stagnant water approximately 2 cm deep. Aquatic vegetation present includes common duckweed (*Lemna minor*) and water starwort species.

The ditch makes a sharp turn and then flows along a mature tree line in a steeper valley, where it is meandering with vertical banks approximately 0.5 m in height. Here the field side is poached by sheep and cows. In this section the substrate is boulders, gravel and pebbles. The bankside vegetation consists of marsh thistle, nettle, soft rush, horsetail, Yorkshire fog, creeping buttercup, foxglove, nettle, broad buckler fern, floating sweet grass, cleavers, creeping thistle, blinks, holly, marsh pennywort, greater stitchwort and germander speedwell.

In the lower reaches the watercourse is 1 m wide, with steep bank up to 6 m in places. There is an overgrown dry stone wall with abundant *Polytrichum* and springy turf moss at the bank top. Further downstream it flows into broad-leaved woodland. A small tributary section joins the watercourse which has drained off marshy grassland.

The watercourse is potentially suitable habitat for white clawed crayfish and otter may utilise the watercourse for commuting/foraging at times. Water vole potential in the downstream section.

Habitat Condition (provisional): Moderate (Score 2)

TR3.WC47



A shallow ditch at the edge of a field. It was dry at the time of the survey, with small pools of stagnant water. The channel is dominated by soft rush. Downstream the watercourse is more open with steeper grassy banks. In-channel vegetation includes soft rush, common sorrel and bittercress species. Negligible protected species potential.



Habitat Condition (provisional): Poor (Score 1)

TR3.WC48









A shallow, slow flowing stream within a steep rocky valley. It is approximately 1 m wide and up to 4 m deep, with a large amount of fallen dead wood covering the channel. The substrate comprises boulders, cobbles and gravel. A short tributary watercourse joins the water channel. Bankside vegetation comprises opposite leaved golden saxifrage, bracken, cleavers, sweet vernal grass, foxglove, *Polytrichum* moss, common nettle, soft rush and bittercress sp. White clawed crayfish potential. Otter may move along this watercourse – there is some but limited cover for holts/couches.

Habitat Condition (provisional): Good (Score 5).




TR3.WC49	
<p>A narrow, 20 cm wide trackside stream, with a slow to moderate flow of water which is only a few centimetres deep. The substrate comprises rock and peat. The banks are marshy in places and in others vegetated with acid grassland. It is bordered to the west by a bracken dominated slope. In channel vegetation includes pond weed sp., star sedge, marsh pennywort, horsetail sp., marsh thistle and <i>Sphagnum</i> mosses. No protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC50	
<p>A narrow stream with low to moderate flow and a shallow water depth (a few centimetres deep). The water emerges from a plastic outflow pipe. The substrate comprises rock and peat. The banks are marshy in places and in others vegetated with acid grassland. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	



TR3.WC51	
<p>A fast-flowing, upland stream with moss covered rocks in the channel and culverted beneath a gravel track. The banks are vegetated with acid grassland, bracken and soft rush. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC52	
<p>A fast-flowing upland stream with moss covered rocks in the channel. Downstream the channel becomes indistinct and the water dissipates into marshy grassland. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC53	
<p>A narrow upland stream with steep, undercut banks which are peaty. The watercourse is vegetated with bracken, soft rush and acid grassland. It is fairly fast flowing, though the survey followed a period of heavy rainfall. Potential for water vole. It is unlikely to support white-clawed crayfish as there is a very fast flow and the substrate is not rocky.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	

TR3.WC54	
	<p>A fast-flowing upland watercourse within a small valley which is steep sided and vegetated predominantly with bracken. TR3.WC53 joins this watercourse just before it flows under a stone bridge where a new inlet pipe has recently been installed. The watercourse has a rocky and gravelly base and the water is discoloured by peat. The depth is less than 30 cm. Potential to be used by otter moving through though no holt or couch potential. White-clawed crayfish potential as there is a variety of rock sizes including boulders, slabs, cobbles and gravel. Some water vole potential though the fast flow may render the feature unsuitable.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>
TR3.WC55	
	<p>A very fast flowing watercourse which has a densely vegetated channel approximately 0.5 m wide, such that it is indistinguishable from surrounding vegetation. Bankside vegetation comprises soft rush, acid grassland and bracken. It flows beneath a gravel track and then into a steep sided valley clough before joining TR3.WCW54. Again the channel here is completely overgrown with soft rush and bracken. The banks comprise earth and peat and are undercut. The depth is likely to be no more than 20 cm average. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>
TR3.WC56	
	<p>A recently excavated trackside ditch, 1 m wide; it is shallow and peaty and vegetated with soft rush on the banks. It appears to have been excavated in small sections; it is likely cleared out to maintain flow. The arisings from clearance remain on the banks and further south they have been piled onto the other side of track. There is a moderate flow of discoloured peaty water, with some <i>Sphagnum</i> moss noted within the channel. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>



TR3.WC57	
<p>A rocky, upland watercourse within a natural catchment with a moderate to fast flow of water, with a rocky waterfall immediately west of a track. The banks are rocky and undercut in places, and the base of the stream comprises bedrock, cobbles, stones and gravel. The water has some peaty discolouration with an average width of 30 cm, the feature widens at the waterfall section. The banks are vegetated with acid grassland, bilberry, ling and bracken. There is a dead rowan tree to the east of the track and one scrubby tree. Further downstream the channel is indistinguishable from the surrounding vegetation except on either side of the track. Potential for white-clawed crayfish.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC58	
<p>A dry watercourse located within a steep sided, vegetated valley and is likely to flow at times of high rainfall. The channel is indistinguishable from the surrounding vegetation which is dominated by bracken and soft rush over a layer of acid grassland. To the east of track is a newly excavated section of ditch which may feed into it and a marshy area. There is no tree or scrub cover, the banks comprise earth and peat and are undercut in places. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC59	



A meandering ditch which flows beneath and along the western edge of the track. The banks are steep and undercut in places and are densely vegetated with soft rush, foxglove, common male fern and acid grassland. A band of marshy, soft rush dominated grassland is present around the watercourse where the banks are shallow and overgrown. The width is 0.5 m. Along the margins *Sphagnum* and *Polytrichum* mosses and marsh thistle are present. The watercourse flows under a track and then continues through a sheep grazed field. Further downstream it emerges from a field and flows within a section of alder woodland along the roadside where it is shaded and rocky the banks are vegetated with grasses including crested dog's-tail, fescue sp., sweet vernal grass and occasional soft rush, violet sp. and creeping buttercup. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC60



A roadside ditch lying adjacent to a hedgerow which emerges from a culvert, with a moderate to fast flow and earth banks that are densely vegetated. There is evidence of a recent high water event as there is scouring and exposure of the roots on lower banks. The banks are vegetated with sweet vernal grass, foxglove, soft rush, male fern, crested dog's-tail, creeping buttercup, ribwort plantain, mouse ear, soft rush, tufted hair grass, Yorkshire fog and occasional bankside bramble and large stands of common male fern. The vegetation becomes more exclusively grassy to the south. There are also occasional patches of bankside willow. The bank widens to the south and has been recently cleared and a pipe culvert installed with spoil left on the banks and the channel filled with rocks. Water vole potential.




Habitat Condition (provisional): Good (Score 3).

TR3.WC61



A roadside depression with a small amount of ochreous water; the channel is overgrown with species-rich grassland comprising sweet vernal grass, sheep's fescue, crested dogs'-tail, Yorkshire fog, ribwort plantain, red clover, common bird's-foot trefoil, woodrush sp., heath bedstraw, meadow buttercup, marsh thistle, foxglove, flea sedge, common sedge, compact rush, ragged robin, marsh violet, tormentil, common sorrel and common cat's-ear (*Hypochaeris radicata*). There is an associated species-rich verge which is fine leaved with more acid indicators which lies in the southern section of the ditch. To the south the flow is faster flowing, perhaps due to some recent clearance just before it joins larger watercourse TR3.WC59.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC62	
<p>A fast flowing roadside stream approximately 30 cm wide. The channel is indistinguishable from the adjacent marshy grassland. The banks are earth, undercut and densely vegetated. It flows beneath a dry stone wall. Bankside vegetation comprises common nettle, foxglove, soft rush, marsh thistle, creeping thistle and white clover. It flows under a road and then within a small valley. Here it is joined by another watercourse and flows downstream as a fast flowing rocky stream, approximately 1 m wide with steep grassy banks and occasional bankside trees including hawthorn. White clawed crayfish potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3).</p>	
TR3.WC63	
<p>A marshy, indistinct channel following a field boundary with some stagnant pools of water with a greasy film. The species associated with the ditch include dominant soft rush, with occasional hard rush, tufted hair grass, Yorkshire fog, common nettle and marsh thistle. Rarely there is marsh bedstraw, common mouse ear, greater bird's-foot trefoil, common sorrel, creeping buttercup, crested dog's-tail, foxglove, forget-me-not sp., brooklime, water starwort sp. and marsh willowherb. Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1).</p>	
TR3.WC64	



A marshy, indistinct ditch channel with pockets of stagnant water, surrounded by hawthorn scrub and a hedgerow. Some sections of the ditch are completely overgrown. The species associated with the ditch include dominant soft rush with occasional hard rush, herb Robert, lady fern, tufted hair grass, Yorkshire fog, common nettle and marsh thistle. Rarely there is marsh bedstraw, common mouse ear, greater bird's-foot trefoil, common sorrel, creeping buttercup, crested dog's-tail, foxglove, forget-me-not sp., brooklime, water starwort sp. and marsh willowherb. Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 2).

TR3.WC65



A moderate flowing stream within a sheep grazed field, with densely vegetated grassy banks comprising soft rush, creeping thistle and common nettle. There are some pools and riffles within the channel. The width varies from 20 cm to 1 m. White-clawed crayfish potential due to cobble and gravel substrate. Water vole potential due to well vegetated banks. Poached at the edges and culverted beneath the road. Otter may move along the watercourse but no cover for holt or couch locations.

Habitat Condition (provisional): Moderate (Score 3)

TR3.WC66






A watercourse (stream) flowing through marshy grassland and then beneath a tree line. The banks are very shallow and the base of the stream is rocky. The margins are vegetated with common nettle, brooklime and creeping buttercup. The watercourse is approximately 50 cm wide.

Downstream (south of the road) the watercourse has a concrete vertical embankment on the eastern side. Some areas are also concreted on the west; however, the western embankment is generally shallow sloping and dominated by grasses. The watercourse is moderately flowing with very little emergent vegetation. The width is approximately 30 -50 cm and depth 10 cm. This watercourse joins the River Hodder (TR3.WC80) to the south. The water is clear and the bed of the channel comprises silt and gravel, with scattered pebbles and boulders. A fallen tree partially blocks the watercourse and here the water flows very slowly into a pooled area. Vegetation includes floating sweet grass and brooklime. Close to the roadside on the southern field the watercourse is partially lined with sharp flowered rush. The watercourse provides suitable habitat for water vole and commuting otter, it is considered to have negligible potential for crayfish.

Habitat Condition (provisional): Moderate (Score 3)



TR3.WC67	
<p>A minor watercourse (stream) flowing through marshy grassland and along a tree line, flowing into watercourse TR3.WC66. The banks are vegetated with meadowsweet, horsetail species and crosswort (<i>Cruciata laevipes</i>). Water vole and otter potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC68	
<p>A man-made ditch with steep sided grassy banks. At the time of the survey there was no flow but areas of stagnant water. Vegetation within the channel includes soft rush, bittercress species, sharp flowered, sedges, daisy, creeping buttercup and creeping thistle. The banks are dominated by soft rush and tufted hair grass with creeping thistle, common nettle and Yorkshire fog. The channel width (wet) is approximately 30 cm and has a rocky substrate. The ditch has good connectivity to dry stone walls and large rock/spoil piles and therefore is considered to have potential habitat for amphibians. No other protected species potential was noted.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC69	

A slow-flowing upland watercourse with an indistinct channel which flows through marshy grassland. Species present within the channel include blinks, soft rush, sharp flowered rush, bird's-foot trefoil, bittercress species, brooklime and common water starwort. Some sections have steep or undercut earth banks beneath the dense marshy grassland. The banks are vegetated with marshy grassland species including soft rush, sharp flowered rush, common bent and marsh thistle. The watercourse flows through newly planted woodland where the banks are taller and steep sided - approximately 1m tall. The water depth less is than 20cm and with a width of 20cm.

Small mammal holes are present and the ditch is considered to have potential for water vole. It is considered to have negligible potential for white-clawed crayfish and otter.

Habitat Condition (provisional): Moderate (Score 3)

TR3.WC70



A slow-flowing narrow stream parallel with hedgerow TR3.H29 and flowing through plantation woodland and then further downstream through agricultural fields. It is culverted over the access to the field. The width is 30cm and the depth is up to 20cm. The grassy banks are vertical and undercut (approximately 0.5m tall). In exposed areas of the water surface the bed is cobble and gravel with a silt / sand film.

Negligible protected species potential.

Habitat Condition (provisional): Moderate (Score 3)

TR3.WC71






A small, shallow and slow-flowing ditch with an indistinct channel and shallow banks. There are ochreous deposits and scattered boulders.




Negligible protected species potential.




Habitat Condition (provisional): Poor (Score 1)

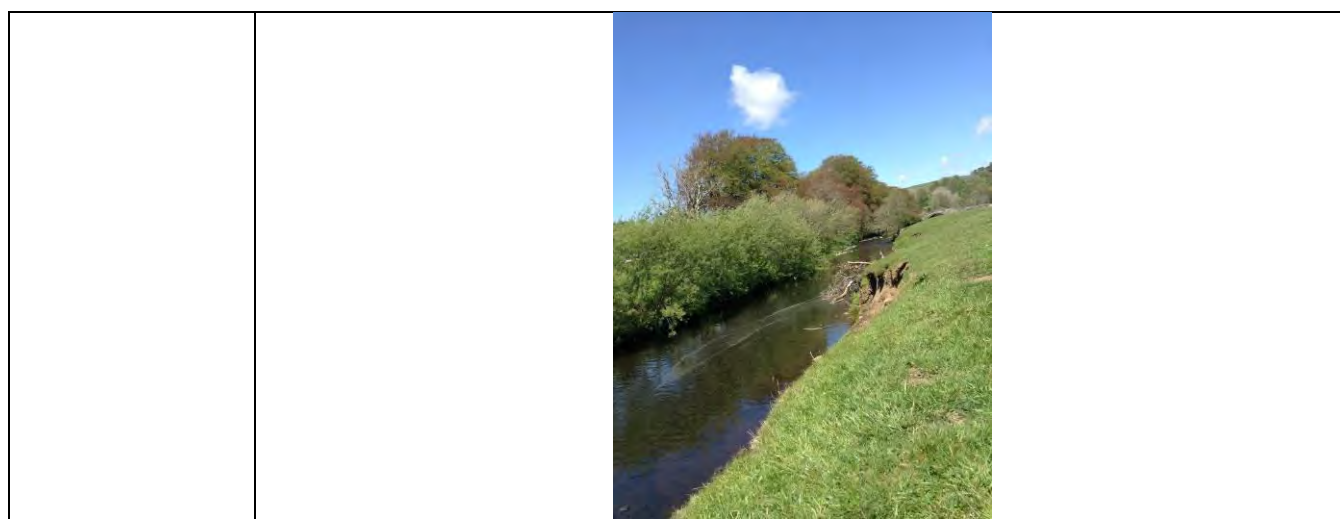


TR3.WC72	
<p>A moderate to fast flowing ditch which has a straight channel and flows off the fell/hill to the north. The earth banks are steep, tall (approx. 1m) and grassy with a scattering of soft rush. Ochreous deposits were noted within the watercourse. There are pooled areas where the stream is crossed by farm vehicles. Some sections of the bank have been reinforced by rocks or recently re-profiled. The watercourse is bordered by marshy grassland. Species noted within the channel include floating sweet grass, water crowfoot, water forget-me-not and common water starwort. The watercourse flows into a pond at the downstream end.</p> <p>It has potential for otter to commute along the watercourse. It is considered to have negligible potential to support white-clawed crayfish and water vole.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC73	
<p>A slow-flowing ditch with an indistinct channel within marshy grassland which is dominated by soft rush. The banks are shallow sloping and grassland dominated.</p> <p>Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC74	
<p>A slow-flowing watercourse with an indistinct channel within dense marshy grassland. The banks are shallow and dominated by soft rush.</p> <p>Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	



TR3.WC75	
<p>A slow-flowing stream emerging from a pond and flowing east. It is culverted beneath a farm gate. It has an indistinct channel dominated by marshy grassland. The sloping earth banks are up to 1m in height.</p> <p>Negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC76	
<p>A dry ditch which has an indistinct channel through dense marshy grassland. The ditch is culverted beneath a field access. The embankments are steep and vegetated with soft rush, broadleaved dock, tufted hair grass, foxglove, sharp flowered rush, creeping thistle, selfheal and common nettle.</p> <p>Negligible protected species potential due to the lack of water and lack of habitat connectivity.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.WC77	
<p>A slow-flowing ditch with an indistinct channel within marshy grassland which is dominated by soft rush. The banks are undercut by the watercourse in places. Flows into watercourse TR3.WC70.</p> <p>Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	

TR3.WC78	
<p>A slow-flowing, narrow watercourse alongside farm track and flowing from a culvert at the field edge. The channel is choked with vegetation including brooklime and floating sweet-grass. The width is approximately 40cm and the depth is approximately 2cm. The banks are shallow, sloping and vegetated with semi-improved grassland.</p> <p>Negligible protected species potential.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.WC79	
<p>A slow-flowing watercourse which is culverted beneath the road. The channel is up to 1 m wide and the depth is 2 cm. The channel is partially choked with grasses and the banks are shallow and vegetated with short grasses. The surrounding land use is sheep grazed fields. No aquatic plants were noted to be present. There is an area of pooled water at a field crossing point.</p> <p>No protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC80	



The River Hodder. This river is within the survey area in two locations; at the upstream location towards the south-eastern corner of the survey area, and at the very south of the survey area where the existing aqueduct crosses the river. The river is designated as a BHS.

The south-eastern area flows approximately from northeast to southwest. The watercourse is approximately 10 m wide, and of an unknown depth, however, it appears to be much deeper towards the centre of the channel. The banks are mainly steep/vertical, however, there are shallow areas where pebble bars are present. This section is bounded by semi-improved grazed grassland to the south east and willow scrub and plantation broadleaved woodland to the northwest. A public footpath runs through the semi-improved field. The banks are earth and the channel substrate is stone. There are scattered over hanging alder trees along southeast bank.

The southern area is a meander of the river flowing roughly east to west. The width of the river at this point is approximately 15 m, and the depth is variable, being shallow on the sand and pebble bars with deeper pools on the outside of the meander. The maximum depth is not known. The northern bank is vegetated with mixed plantation woodland on a steep slope. There are gaps beneath tree roots and large rock piles suitable for otter use. Slightly further upstream there are visible holes within the sand at the watercourse edge which could potentially be those of rat, rabbit or water vole, however, it was not possible to access this area to confirm.

The river has high potential for foraging and commuting bats and the slower flowing areas have potential for white-clawed crayfish. Also, potential kingfisher habitat on the steeper sections of the bank. There is a dry pipe on the northern bank which could potentially be used by otter as a couch/laying up site.

Habitat Condition (provisional): Good (Score 5)



TR3.WC81





A small, moderately flowing watercourse through cattle grazed fields. The channel is up to 0.5 m wide and 10 cm deep. The banks are steep sided earth banks and are vegetated by grasses and tall ruderals with mature trees at regular intervals. The bed is gravel and stone with no in stream vegetation. The stream has crayfish potential and commuting otter potential. Trees also have the potential to be used as bat commuting lines.

Habitat Condition (provisional): Moderate (Score 3)



TR3.WC82	
<p>A small, moderately flowing watercourse through cattle grazed fields, which flows into TR3.WC81. The channel is up to 0.5 m wide and 10 cm deep. Banks are steep sided earth banks and vegetated by grasses and tall ruderals. The bed is gravel and stone with no in stream vegetation. Crayfish potential and commuting/foraging otter potential..</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC83	
<p>A small, moderately flowing watercourse through cattle grazed fields. Channel is up to 0.5 m wide and 10 cm deep. The banks are shallow sided earth banks, vegetated by grasses and soft rush. The bed is gravel and stone with flote grass (<i>Glyceria fluitans</i>) growing within the stream. There is negligible protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	
TR3.WC84	
<p>Slow flowing shallow stream which joins the River Hodder (TR3.WC80) downstream. The substrate comprises silt and pebbles. The stream width is 0.75-1 m and depth is 3-5 cm. In channel vegetation includes water mint and flotegrass. Steep sided earth banks, which are dominated by vegetation from the surrounding field including hard rush meadowsweet, water mint, water avens and creeping thistle. There is a narrow fringe of rushes along the embankment edge. In channel vegetation includes occasional sedges, flote grass, soft rush and water mint. Commuting/foraging otter potential but no holt suitability. Negligible potential for crayfish or water vole.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	

TR3.WC85	
<p>A slow flowing watercourse running parallel to TR3.H33. The width of the stream is approximately 0.5 m, and depth is less than 5 cm generally, but slightly deeper pools also occur. The substrate comprises silt and gravel. The channel is lined with tall wetland herbs including meadowsweet, wild angelica, marsh marigold, soft rush, hard rush, water avens, great willowherb and rarely marsh valerian (<i>Valeriana dioica</i>). The more open tufa-rich patches support water mint, water cress (<i>Rorippa nasturtium aquaticum</i>), brooklime, moss species and lesser pond sedge. Shallow sloping earth banks on the north and west and steeper earth mound on the south and eastern banks. The embankments are also herb rich and include tufted hair grass, dog's mercury, primrose, bramble, lords and ladies, ground elder, cow parsley, crosswort, germander speedwell, hedge woundwort and marsh thistle. Sections are shaded by overhanging hedgerow branches. There is some debris in the channel. Negligible protected species potential, due to shallow depth, shading by trees and lack of connectivity. Within the northern field the watercourse is fenced on either side. The watercourse then flows into the southern field and sweeps into the ground through an area of fen which is dominated by grazed sedges, here it separates into three very shallow channels, each approximately 30 cm wide and no more than 5 cm deep.</p> <p>Habitat Condition (provisional): Fairly good (Score 4)</p>	
TR3.WC86	
<p>Very slow flowing, small watercourse located along the boundary of sheep grazed field. The width is approximately 0.3 m and depth is approximately 5 cm. Banks are moderately steep sided earth banks and vegetated by soft rush with lesser pond sedge, great willowherb and marsh bedstraw. The channel bed is earth and in stream vegetation includes water mint and lesser pond sedge. In stream and bankside vegetation shows evidence of grazing. Otter commuting/foraging potential, negligible other protected species potential.</p> <p>Habitat Condition (provisional): Moderate (Score 3)</p>	

## References

JNCC (1993 revised 2010) *Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.

CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.

Natural England (July 2019). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version)*.

Collins (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.



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## Appendix C. Phase 1 Habitats Overview Report – Wray Compound

<b>1 Project Details</b>			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, <i>Ecologist</i>	Approved:	Jeremy James, <i>Principal Ecologist</i>
Report reference:	TR3 Wray Compound Phase 1 Habitat Overview Report V1	Date:	20/11/2020
<b>2 Project Drawings</b>			
Phase 1 Habitat Survey TR3 Wray Compound Proposed Bowland Section		BOW167_HARP_9.5_PH1_TR3_WRAY COMPOUND	
<b>3 Ecology Surveys</b>			
Surveyors:	Eve Loxham MBiolSci (Hons), GradCIEEM Mark Breaks BSc (Hons)		
Survey date(s):	13/11/2020		
Survey Method:	The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.  Hedgerows were assessed in accordance with The Hedgerow Regulations 1997.		
Weather Conditions:	13/11/2020 – Cloud cover 4/8, Wind Beaufort F2, 8°C, dry.		
Limitations to the survey:	Optimal survey months for Phase 1 Habitat Surveys vary between habitat types, e.g. woodlands are best surveyed in spring, grasslands in mid-summer and heathlands in autumn. Where habitats were not surveyed during the optimal time of year, a full assessment may not have been possible.  At the edge of the survey boundaries, surveys of boundary features (e.g. tree lines, watercourses, hedgerows) were only possible from one elevation. Once the development boundary/route option is finalised further survey may be required.		
<b>4 Ecological Designations</b>			
Is site within close proximity to a statutory** or non-statutory^ protected site?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
SAC/SPA/RAMSAR	<input type="checkbox"/>	N/A	
SSSI/NNR	<input checked="" type="checkbox"/>	Roeburndale Woods SSSI (1.9 km SE) Clear Beck Meadow SSSI (2.4 km E)	
BHS/other	<input checked="" type="checkbox"/>	River Hindburn BHS (0.5 km E)	
<b>5 Habitat Summary</b>			
<p>Scattered trees</p> <p>Scattered trees rarely occur within the TR3 Wray Compound survey area. These are confined to boundary features and include the species English oak (<i>Quercus robur</i>) and willow (<i>Salix</i> sp.).</p> <p>None of the trees were noted to provide suitable bat roosting features, however they do provide linear features for commuting bats, foraging resources for bats, and are suitable for nesting birds. The tree root systems also provide suitable habitat for small mammals and terrestrial refugia for amphibians.</p> <p>Scattered scrub</p> <p>This habitat is commonly found at field boundaries where hedgerows are absent. It is likely some of the scattered scrub</p>			

was historically a hedgerow which has now outgrown, such as TR3.WTN3. Species recorded including hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus agg.*) and willow. Mature scrub also lines the watercourse embankments at TR3.WWC1 where it overhangs and shades the channel.

This habitat provides linear features for commuting bats, foraging resources for commuting bats and is suitable for nesting birds, small mammals and as terrestrial refugia for amphibians.

### Semi-improved neutral grassland

This habitat is uncommon within the TR3 Wray Compound survey area and is limited to two small areas of road verge (TR3.WTN4 and TR3.WTN5) and also a steep bank which is beneath a hedgerow (TR3.WH2). This habitat type is generally un-grazed, infrequently managed and relatively species-rich. Species recorded include garlic mustard (*Alliaria petiolata*), common nettle (*Urtica dioica*), cow parsley (*Anthriscus sylvestris*), hedge woundwort (*Stachys sylvatica*), common hogweed (*Heracleum sphondylium*), meadow buttercup (*Ranunculus acris*), cock's foot grass (*Dactylis glomerata*), meadow grass species (*Poa* sp.), dandelion species (*Taraxacum officinale agg.*), bramble, creeping thistle (*Cirsium arvense*), common sorrel (*Rumex acetosa*), cleavers (*Galium aparine*), yarrow (*Achillea millefolium*), red campion (*Silene dioica*), ribwort plantain (*Plantago lanceolata*), greater plantain (*Plantago major* L.), white clover (*Trifolium repens*), vetch species (*Vicia* sp.), red fescue (*Festuca rubra*), common knapweed (*Centaurea nigra*), false oat grass (*Arrhenatherum elatius*) and speedwell species (*Veronica* sp.).

This habitat provides a good nectar resource for invertebrates, and provides suitable habitat for small mammals (brown hare *Lepus europaeus* were confirmed during the survey to be utilising rough grassland margins at the field boundaries and a rabbit (*Oryctolagus cuniculus*) burrow was recorded within the grassland beneath TR3.WH2), amphibians, ground nesting birds (not adjacent to the roadside) and foraging bats.

### Improved grassland

This is the dominant habitat type in the survey area, being recorded within the majority of fields within the survey area. The habitat is generally a monoculture with some additional species diversity recorded amongst the rough edges of the grassland close to hedgerows or other boundary features. The improved grassland fields were frequently livestock (sheep) grazed.

### Poor semi-improved grassland

This habitat is occasional within the survey area and is generally recorded within fields which have a limited species diversity but are not considered improved. These fields were also commonly livestock grazed. This category also applies to areas of grassland which are infrequently managed, i.e. a tall sward, but lack species diversity.

This habitat provides suitable habitat for small mammals (brown hare were confirmed during the survey to be utilising rough grassland margins at the field boundaries and a rabbit burrow was recorded within the grassland beneath TR3.WH2), amphibians and ground nesting birds.

### Tall ruderal

Tall ruderal vegetation is rare within the survey area and is confined to two small patches of common nettle which are present north of the hedgerow TR3.WH2.

This provides suitable terrestrial habitat for amphibians, and refugia for small mammals.

### Running water

Two watercourses are recorded within TR3 Wray Compound survey. Both are present within the field margins and are considered to provide negligible suitability to protected riparian/ aquatic species.

TR3.WWC1 is a slow-flowing watercourse which emerges from a culvert and flows east to west beneath a line of mature scrub. The embankments are vertical dry-stone walls, apart from a small section which is livestock poached. The width is approximately 1.2 m and depth approximately 30 cm. Brooklime (*Veronica beccabunga*) occurs rarely along the surveyed length and otherwise there is no in-channel vegetation.


TR3.WWC2 is a partially stagnant ditch which runs along a field boundary before dispersing into a species-poor semi-improved grassland field. There is little to no flow, the ditch width is approximately 30 cm and depth 10 cm. The channel is indistinct from the grassland field in places. There is a small pool which is overgrown with algae, otherwise the channel is overgrown with meadow grass.






<p>An additional, unnamed, watercourse is present within a culvert beneath the field. Openings in the culvert are shown as TR3.WTN1.</p>
<p><b>Species-rich intact hedgerow</b></p> <p>Hedgerows dominate the boundary of the fields within TR3 Wray Compound. Species-rich hedgerows account for four of the seven; TR3.WH1, TR3.WH3, TR3.WH4 and TR3.WH5. Of these TR3.WH3 and TR3.WH4 are classified under ecological criteria as 'Important' in accordance with the Hedgerow Regulations 1997.</p> <p>Woody species were generally dominated by blackthorn and also included hazel (<i>Corylus avellana</i>), hawthorn, ash (<i>Fraxinus excelsior</i>), elder (<i>Sambucus nigra</i>), sessile oak (<i>Quercus petraea</i>), rose species (<i>Rosa</i> sp.) and willow. Notable ground flora species recorded included dog's mercury (<i>Mercurialis perennis</i>), lady fern (<i>Athyrium filix-femina</i>), wood avens (<i>Geum urbanum</i>), male fern (<i>Dryopteris filix-mas</i>) and herb Robert (<i>Geranium robertianum</i>). However, due to the time of year the survey was undertaken, assessment of the ground flora was restricted and identification of other notable (listed on Schedule 2 of the Hedgerow Regulations) was constrained. Most of the hedgerows show signs of being historically laid and recently cut/flailed. TR3.WH4 appeared to have outgrown in sections and is "leggy".</p> <p>Hedgerows provide an important linear feature for commuting and foraging bats, as well as providing habitat for nesting birds, small mammals, large mammals and terrestrial habitat for amphibians. These hedgerows in particular provide linkage to the River Hindburn, the River Wenning and other pockets of woodland which are present to the north and south of the survey area.</p>
<p><b>Species-poor intact hedgerow</b></p> <p>Three of the seven hedgerows are classified as species-poor, these include TR3.WH2, TR3.WH6 and TR3.WH7. Woody species recorded include blackthorn and hawthorn with smaller proportions of elder, rose species and hazel also recorded. Notable ground flora species were absent or limited to male fern, lady fern and dog's mercury. However, due to the time of year the survey was undertaken, assessment of the ground flora was restricted and identification of other notable (listed on Schedule 2 of the Hedgerow Regulations) was constrained. Most of the hedgerows show signs of being historically laid and recently cut/flailed. TR3.WH2 and TR3.WH6 are slightly outgrown in sections and are "leggy".</p> <p>Hedgerows provide an important linear feature for commuting and foraging bats, as well as providing habitat for nesting birds, small mammals, large mammals and terrestrial habitat for amphibians. These hedgerows in particular provide linkage to the River Hindburn, the River Wenning and other pockets of woodland which are present to the north and south of the survey area.</p>
<p><b>Defunct hedgerow</b></p> <p>A small section of hedgerow was classified as defunct at the edges of the survey area, to the south of the road and roughly perpendicular to TR3.WH4. This hedgerow was not subject to a Hedgerow Regulations Assessment due to length (&lt;20 m).</p>
<p><b>Fence</b></p> <p>Stock proof fencing is occasionally found as field boundaries alongside hedgerows, where hedgerows are absent, or alongside watercourses throughout the TR3 Wray Compound survey area.</p>
<p><b>Dry ditch</b></p> <p>A dry ditch is present along the field boundary adjacent to TR3.WWC2. It is likely to hold water in wetter weather periods. Dry ditches provide suitable habitat for amphibians and small mammals.</p>
<p><b>Bare ground</b></p> <p>Bare ground includes hardstanding and bare earth. It is infrequent in the survey area and is largely associated with roads and courtyard areas between buildings.</p>
<p><b>Buildings</b></p> <p>Buildings are infrequently found within TR3 Wray Compound survey. They are limited to stables and other farm buildings or barns. The buildings provided opportunities for protected fauna for example nesting birds.</p>

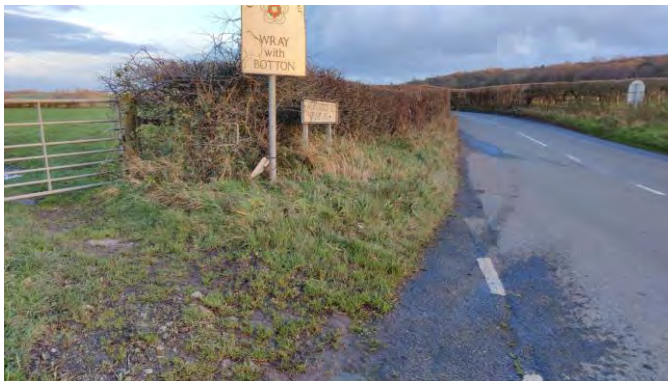
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## **Appendix D. Target Notes Report – Wray Compound**

<b>1 Project Details</b>			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR3 Wray Compound Target Note Report V1	Date:	20/11/2020
<b>2 Project Drawings</b>			
TR3 Wray Compound Phase 1 Plans Proposed Bowland Section		BOW167_HARP_9.5_Phase 1_TR3_WRAY_COMPOUND	
<b>3 Ecology Surveys</b>			
Surveyors:	Eve Loxham MBiolSci (Hons), GradCIEEM Mark Breaks BSc (Hons)		
Survey date(s):	13/11/2020		
Survey Method:	<p>The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.</p> <p>Habitat Condition has been assessed in accordance with Natural England Biodiversity Metric (July 2019).</p>		
Weather Conditions:	13/11/2020 – Cloud cover 4/8, Wind Beaufort F2, 8°C, dry.		
Limitations to the survey:	<p>Optimal survey months for Phase 1 Habitat Surveys vary between habitat types, e.g. woodlands are best surveyed in spring, grasslands in mid-summer and heathlands in autumn. Where habitats were not surveyed during the optimal time of year, a full assessment may not have been possible.</p> <p>At the edge of the survey boundaries, surveys of boundary features (e.g. tree lines, watercourses, hedgerows) were only possible from one elevation. Once the development boundary/route option is finalised further survey may be required.</p>		
<b>4 Target notes</b>			
TR3.WTN1			
<p>TN1 refers to two areas of the same watercourse which are briefly open outside the culvert channel at opposite sides of the field. The surrounding habitats are grassland dominated, with a hedgerow (TR3.WH1) adjacent to the southern open culvert section.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>			



TR3.WTN2	
<p>Brown hare (<i>Lepus europaeus</i>) observed along the field boundary travelling from an area of rough grassland. The rough grassland edges of the fields and hedgerows are suitable areas for laying up and forms.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.WTN3	
<p>A line of mature scrub and scattered trees along the field boundary. This appears to be a former hedgerow which has grown out. There are signs of the feature having been historically laid. The scrub is dominated by blackthorn (<i>Prunus spinosa</i>) with occasional willow (<i>Salix</i> sp.). This area is suitable habitat for nesting birds, as well foraging / commuting bats, and amphibians / small mammals within the ground flora.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.WTN4	
<p>A section of widened roadside verge which is characteristic of semi-improved neutral grassland. The ground slopes gently up towards the hedgerow (TR3.WH4). Species recorded include; garlic mustard (<i>Alliaria petiolata</i>), common nettle (<i>Urtica dioica</i>), cow parsley (<i>Anthriscus sylvestris</i>), hedge woundwort (<i>Stachys sylvatica</i>), common hogweed (<i>Heracleum sphondylium</i>), meadow buttercup (<i>Ranunculus acris</i>), cock's foot grass (<i>Dactylis glomerata</i>), meadow grass species (<i>Poa</i> sp.), dandelion species (<i>Taraxacum officinale</i> agg.), bramble (<i>Rubus fruticosus</i> agg.), creeping thistle (<i>Cirsium arvense</i>), common sorrel (<i>Rumex acetosa</i>) and cleavers (<i>Galium aparine</i>). Common nettle is locally dominant in patches and the grassland is considered to be rank. In general, the area appears to be infrequently managed, although a narrow strip of the grassland appears to be more frequently maintained directly adjacent to the road. This area is a suitable nectar resource for invertebrates, and provides habitat for amphibians and small mammals.</p>	

Habitat Condition (provisional): Moderate (Score 2)	
TR3.WTN5	
<p>Small section of the roadside verge adjacent to the field entrance, which is particularly species-rich. The habitat is classified as semi-improved neutral grassland. It slopes steeply up to the adjacent hedgerow (TR3.WH3). Species recorded include; hedge woundwort, yarrow (<i>Achillea millefolium</i>), red campion (<i>Silene dioica</i>), ribwort plantain (<i>Plantago lanceolata</i>), greater plantain (<i>Plantago major</i> L), cow parsley, meadow grass, white clover (<i>Trifolium repens</i>), vetch species (<i>Vicia</i> sp.), bramble, cock's foot, common nettle, creeping thistle, red fescue (<i>Festuca rubra</i>), common knapweed (<i>Centaurea nigra</i>), false oat grass (<i>Arrhenatherum elatius</i>), meadow buttercup and speedwell species (<i>Veronica</i> sp.). Similar to TN4, the verge is infrequently managed and provides a suitable nectar resource for invertebrates and provides habitat for amphibians and small mammals.</p>	
Habitat Condition (provisional): Moderate (Score 2)	
<b>Watercourses</b>	
TR3.WWC1	
<p>A slow to moderately flowing watercourse which emerges from a culvert and flows roughly east to west along a field boundary at the edge of the survey area. The embankments are vertical dry-stone walls, apart from a small section which is livestock poached where the embankments are shallower. The watercourse is mostly fenced on both sides apart from the small section with livestock access. The width is approximately 1.2 m and depth approximately 30 cm. Brooklime (<i>Veronica beccabunga</i>) occurs rarely along the surveyed length and otherwise there is no in-channel vegetation. The embankments are vegetated with mature blackthorn and hawthorn scrub, with occasional opposite-leaved golden saxifrage (<i>Chrysosplenium oppositifolium</i>), harts tongue fern (<i>Asplenium scolopendrium</i>), male fern (<i>Dryopteris filix-mas</i>), bramble and common nettle. At the eastern edge of the watercourse is a mature English oak (<i>Quercus robur</i>). There is negligible potential for protected aquatic species, although foraging bats may utilise the embankment vegetation.</p>	
Habitat Condition (provisional): Poor (Score 1)	

TR3.WWC2	
<p>A wet, partially stagnant ditch runs along a field boundary before dispersing into a species poor semi-improved grassland field. There is little to no flow, the ditch width is approximately 30 cm and depth 10 cm. The channel is indistinct from the grassland field in places. There is a small pool which is overgrown with algae, otherwise the channel is overgrown with meadow grass. There is negligible potential for protected species.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	

### References

CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.

JNCC (1993 revised 2010) *Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.



Natural England (July 2019). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version)*.



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## Appendix E. GWDTE Survey


1. Project Details					
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155		
Written:	Jeremy James, Principal Ecologist	Approved:	Alice Helyar, <i>Principal Ecologist</i>		
Report reference:	TR3 GWDTE Habitat Assessment Report	Date:	22/5/20		
2. Project Drawings					
GWDTE Survey Proposed Bowland Section "TR3 North" and "TR3 South"					
3. Habitat Survey Methods					
Surveyors:	Jeremy James, MSc, BSc (Hons), CEcol, CEnv, MCIEEM Philip Eades PhD, MCIEEM				
Survey date(s):	30/04/2020, 01/05/2020, 06/05/2020,				
Survey Method:	The ecological component of the field survey followed the Phase 1 habitat survey methodology to classify and map the habitats. More detailed recording was focused on habitats which based on professional judgement were considered likely to constitute GWDTE, taking into consideration vegetation composition, observed groundwater and surface water levels and flows, topography and landscape situation. The National Vegetation Classification (NVC) (Rodwell, 1991 <i>et seq</i> ) was used to classify the main vegetation types encountered, due to the early timing of the survey this was a high level assessment undertaken in conjunction with the SNIFFER WFD95 Wetland Typology				
Weather Conditions:	30/04/2020 – Sunshine with heavy showers, 4/8 cloud, light breeze (Beaufort Scale 1), 14°C 01/05/2020 – Heavy showers, 8/8 cloud, light breeze (Beaufort Scale 1), 11°C 06/05/2020 – Dry, sunshine with 0/8 cloud, no breeze (Beaufort Scale 0), 12°C				
Limitations to the survey:	Survey carried out early in the growing season, constraining detailed survey and classification of plant communities. The survey also followed a period of prolonged dry weather, thus seasonal water features were possibly not evident during the survey period and certain habitat such as marshy grassland may not appear as extensive.				

4. GWDTE Habitat Assessment Results			
Target Note Reference: TR3.GW1			
			
Photo ID:	TR3.GW1	Grid reference:	SD 69381 50034
<b>Description:</b> Three small springheads mounds set in a large patch of dense rushes, within improved permanent pasture on a gently sloping hillside; with abundant <i>Calliergonella cuspidata</i> , <i>Veronica beccabunga</i> and <i>Carex nigra</i> , with some <i>Lychnis flos-cuculi</i> .			
<b>Species list:</b> <i>Calliergonella cuspidata</i> , <i>Veronica beccabunga</i> and <i>Carex nigra</i> , with some <i>Lychnis flos-cuculi</i> . Surrounding rushy M23 is dominated by <i>Juncus inflexus</i> and <i>Juncus effusus</i> , and frequent <i>Filipendula ulmaria</i> , <i>Carex hirta</i> , <i>Lotus pedunculatus</i> , <i>Cardamine pratensis</i> , <i>Calliergonella cuspidata</i> , <i>Lychnis</i> , <i>Rumex acetosa</i> , <i>Lathyrus pratensis</i> , <i>Hypericum tetrapterum</i> , <i>Carex nigra</i> and <i>Epilobium hirsutum</i>			
Phase 1 Habitat Type:	Affinity with NVC:		WFD95 Wetland Type:
E2.1	M23; MG10		3d
Landscape Setting:		Hydrological features:	
4 slope		Spring	
Soil indicators:	Vegetation indicators:	Vegetation height:	Existing pressures:
Shallow peat with tufa	Rushes, small sedges, mosses	Knee	Nutrient enrichment
Target Note Reference: TR3.GW2			
			
Photo ID:	TR3.GW2	Grid reference:	SD 69406 50107







<b>Description:</b> Permanent pasture on a gently sloping hillside. A small spring situated at the break of slope and flows into a natural channel about 50cm wide.			
<b>Species list:</b> Has much <i>Rorippa nasturtium aquaticum</i> , <i>Veronica beccabunga</i> , <i>Cratoneuron filicinum</i> , <i>Brachythecium rivulare</i> , <i>Calliergonella cuspidata</i> , <i>Pellia endiviifolium</i>			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
E2.2	'Other Springs'	3b	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
4 slope		Spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Tufa	Watercress	Ankle height	None
<b>Target Note Reference:</b> TR3.GW3			
			
<b>Photo ID:</b>	TR3.GW3	<b>Grid reference:</b>	SD 69471 50126
<b>Description:</b> Lower slope of valley above flood plain within permanent pasture on a gently sloping hillside, with a seepage line associated with springs, comprising dense patches of <i>Juncus effusus</i> mixed with close-grazed species-poor grassland.			
<b>Species list:</b> <i>Juncus effusus</i> mixed with close-grazed species-poor grassland			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
B5	MG10	3d	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
4 slope		Spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Loam soil	Rushes	Waist height	Nutrient enrichment


<b>Target Note Reference: TR3.GW4</b>			
			
<b>Photo ID:</b>	TR3.GW4	<b>Grid reference:</b>	SD 69425 49997
<b>Description:</b> Permanent pasture on a gently sloping hillside. Several lime rich springs on lower slope of valley above flood plain flow into a ditched stream			
<b>Species list:</b> Much of the shallow tufa-rich ditched stream is lined with tall wetland herbs including Filipendula ulmaria, Angelica sylvestris, Caltha palustris, Juncus inflexus, Juncus effusus, Geum rivale, Epilobium hirsutum and rarely Valeriana dioica. More open tufa rich patches support Mentha aquatica, Rorippa nasturtium aquaticum, Veronica beccabunga, Cratoneuron filicinum, Brachythecium rivulare, Calliergonella cuspidata, Peltia endiviifolium. At the south western end of the stream there is a stand of Carex acutiformis swamp vegetation.			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
E2.2	M27; M37 spring; S7 Carex acutiformis swamp	3b	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
4 slope		spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Tufa and peat	Rushes, broad leaved sedges, tall herbs	Waist	Drainage
<b>Target Note Reference: TR3.GW5</b>			
			
<b>Photo ID:</b>	TR3.GW5	<b>Grid reference:</b>	SD 69340 49895

<b>Description:</b> A ditched channel (50 cm deep, 1 m wide, 15 m long) from a spring with ground water is seeping out along its length, located within permanent pasture on edge of River floodplain.			
<b>Species list:</b> Dominated by <i>Calliergonella cuspidata</i> , with <i>Brachythecium rivulare</i> , also scattered <i>Juncus effusus</i> , <i>Carex acutiformis</i> , <i>Galium palustre</i> and <i>Epilobium hirsutum</i> .			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
E2.2	Other Springs	3b	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3a waterside; floodplain		Spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Tufa	Mosses	Ankle	Drainage
<b>Target Note Reference:</b> TR3.GW6			
			
<b>Photo ID:</b>	TR3.GW6	<b>Grid reference:</b>	SD 69355 49884
<b>Description:</b> Wet ground that is irrigated by spring water flow from upslope located within a permanent pasture on edge of River floodplain.			
<b>Species list:</b> Dominated by <i>Carex acutiformis</i> , with occasional <i>Caltha palustris</i> , <i>Filipendula ulmaria</i> , <i>Urtica dioica</i> and <i>Cirsium palustris</i> .			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
E3	S7	4	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3a waterside		Spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Peat	Broad leaved sedges	Knee	Poaching of ground



<b>Target Note Reference: TR3.GW7</b>			
			
<b>Photo ID:</b>	TR3.GW7	<b>Grid reference:</b>	
<b>Description:</b> Spring fed ditches leading from 3 springs and join to form a single channel within a permanent pasture above the base of the slope leading down onto the river floodplain.			
<b>Species list:</b> Open sections are dominated by a mixture of <i>Mentha aquatica</i> and <i>Calliergonella cuspidata</i> , other parts have abundant <i>Filipendula ulmaria</i> , while <i>Carex acutiformis</i> dominates the vegetated channel.			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
E2.2	M37?; M27	3b	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
4 slope		Spring	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Tufa	Mosses, water mint, tall herbs, large sedges	Ankle	Drainage
<b>Target Note Reference: TR3.GW8</b>			
			
<b>Photo ID:</b>	TR3.GW8	<b>Grid reference:</b>	SD 68413 50406
<b>Description:</b> Small stand of lesser pond sedge swamp adjacent to stream.			
<b>Species list:</b> <i>Carex acutiformis</i> , <i>Caltha palustris</i> , <i>Filipendula ulmaria</i> ,			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
F1 swamp	S7 <i>Carex acutiformis</i> swamp	5 swamp	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	

3c streamside		Stream	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Mineral soil	Sedges	Knee	Nutrient enrichment, grazing, drainage
<b>Target Note Reference: TR3.GW9</b>			
			
<b>Photo ID:</b>	TR3.GW9	<b>Grid reference:</b>	SD 68641 50369
<b>Description:</b> Stand of lesser pond sedge swamp adjacent to stream.			
<b>Species list:</b> <i>Carex acutiformis</i> , <i>Angelica sylvestris</i> , <i>Filipendula ulmaria</i> ,			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	
F1 swamp	S7 <i>Carex acutiformis</i> swamp	5 swamp	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3c streamside		Stream	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Mineral soil	Sedges	Knee	N/A
<b>Target Note Reference: TR3.GW10</b>			
			
<b>Photo ID:</b>	TR3.GW10	<b>Grid reference:</b>	SD 68616 50421
<b>Description:</b> Alder, sedge woodland adjacent to stream.			
<b>Species list:</b> <i>Alnus glutinosa</i> , <i>Carex acutiformis</i> , <i>Angelica sylvestris</i> , <i>Filipendula ulmaria</i> , <i>Geum rivale</i> , <i>Chrysosplenium oppositifolium</i> , <i>Deschampsia cespitosa</i>			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>	<b>WFD95 Wetland Type:</b>	

A1.1	W7 <i>Alnus glutinosa</i> – <i>Fraxinus excelsior</i> – <i>Lysimachia nemorum</i>		1b other wet woodland
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3c streamside		Stream	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Mineral soil	Alder, broad leaved sedges	Knee	Drainage
<b>Target Note Reference:</b> TR3.GW11			
			
<b>Photo ID:</b>	TR3.GW11	<b>Grid reference:</b>	SD 69240 50868
<b>Description:</b> Small area of seepage vegetation/flush adjacent to stream within an extensive area of sheep grazed pasture.			
<b>Species list:</b> <i>Juncus inflexus</i> , <i>Carex flacca</i> , <i>Veronica beccabunga</i> , <i>Glyceria cf fluitans</i>			
<b>Phase 1 Habitat Type:</b>	<b>Affinity with NVC:</b>		<b>WFD95 Wetland Type:</b>
B5	The area is too small and degraded to classify but has affinities with MG10b <i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture		3d seepages/2a marshy grassland
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3c streamside		Stream	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Mineral soil	Small sedges	Ankle	Drainage



### Target Note Reference: TR3.GW12



Photo ID:	TR3.GW12	Grid reference:	SD 69718 49891
<b>Description:</b> Small area of rush and sedge vegetation adjacent to small stream, within extensive area of sheep grazed pasture adjacent to the River Hodder.			
<b>Species list:</b> <i>Juncus inflexus</i> , <i>Carex flacca</i> , <i>Veronica beccabunga</i> , <i>Glyceria cf fluitans</i>			
Phase 1 Habitat Type:	Affinity with NVC:	WFD95 Wetland Type:	
B5	The area of vegetation is too small and degraded to classify affinities with MG10b <i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture	2a marshy grassland	
Landscape Setting:		Hydrological features:	
3c streamside		Stream	
Soil indicators:	Vegetation indicators:	Vegetation height:	Existing pressures:
Mineral soil	Small sedges	Ankle	Over grazing, nutrient enrichment, drainage

### Target Note Reference: TR3.GW13



Photo ID:	TR3.GW13	Grid reference:	SD 69524 49696
<b>Description:</b> Small spring in extensive area of sheep grazed pasture, adjacent to the River Hodder.			
<b>Species list:</b> <i>Glyceria fluitans</i>			
Phase 1 Habitat Type:	Affinity with NVC:	WFD95 Wetland Type:	

F1 Swamp	S22 <i>Glyceria fluitans</i> , <i>Veronica beccabunga</i>	3c other springs	
<b>Landscape Setting:</b>		<b>Hydrological features:</b>	
3c streamside		Stream	
<b>Soil indicators:</b>	<b>Vegetation indicators:</b>	<b>Vegetation height:</b>	<b>Existing pressures:</b>
Mineral soil	Small sedges	Ankle	Over grazing, nutrient enrichment, drainage

### References

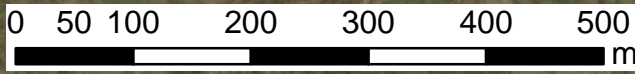
JNCC, (2010), Handbook for Phase 1 habitat survey – a technique for environmental audit, JNCC

Rodwell, J.S. (Ed.) (1991 et seq.). British Plant Communities. 5 volumes: Vol. 1 (1991) - Woodlands and Scrub; Vol. 2 (1991) - Mires and Heaths; Vol. 3 (1992) - Grasslands and montane communities; Vol. 4 (1995) - Aquatic communities, swamps and tall-herb fens. Cambridge: Cambridge University Press.

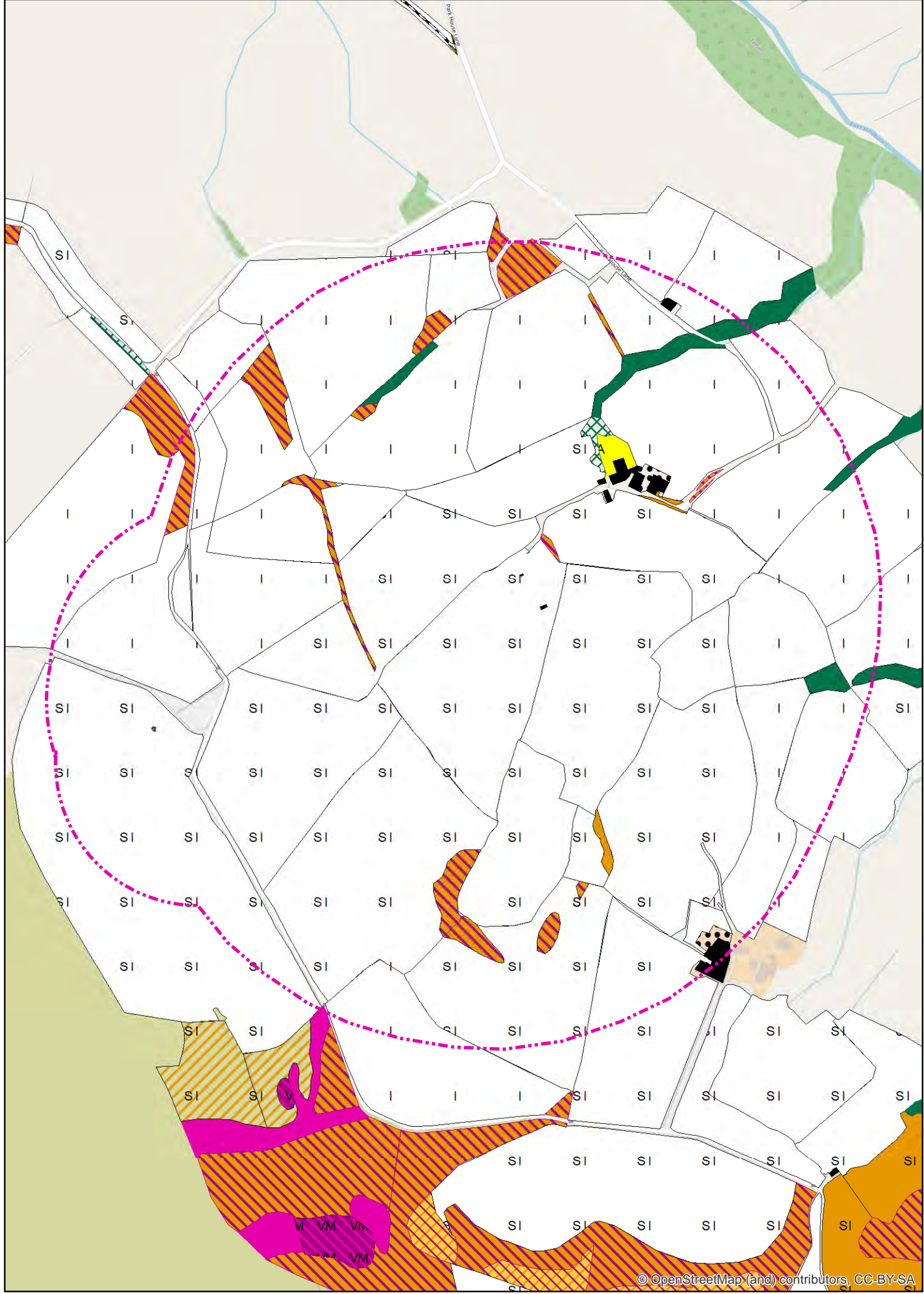
SNIFFER (2009) WFD95: A Functional Wetland Typology for Scotland - Project Report. SNIFFER



TR3 NORTH



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

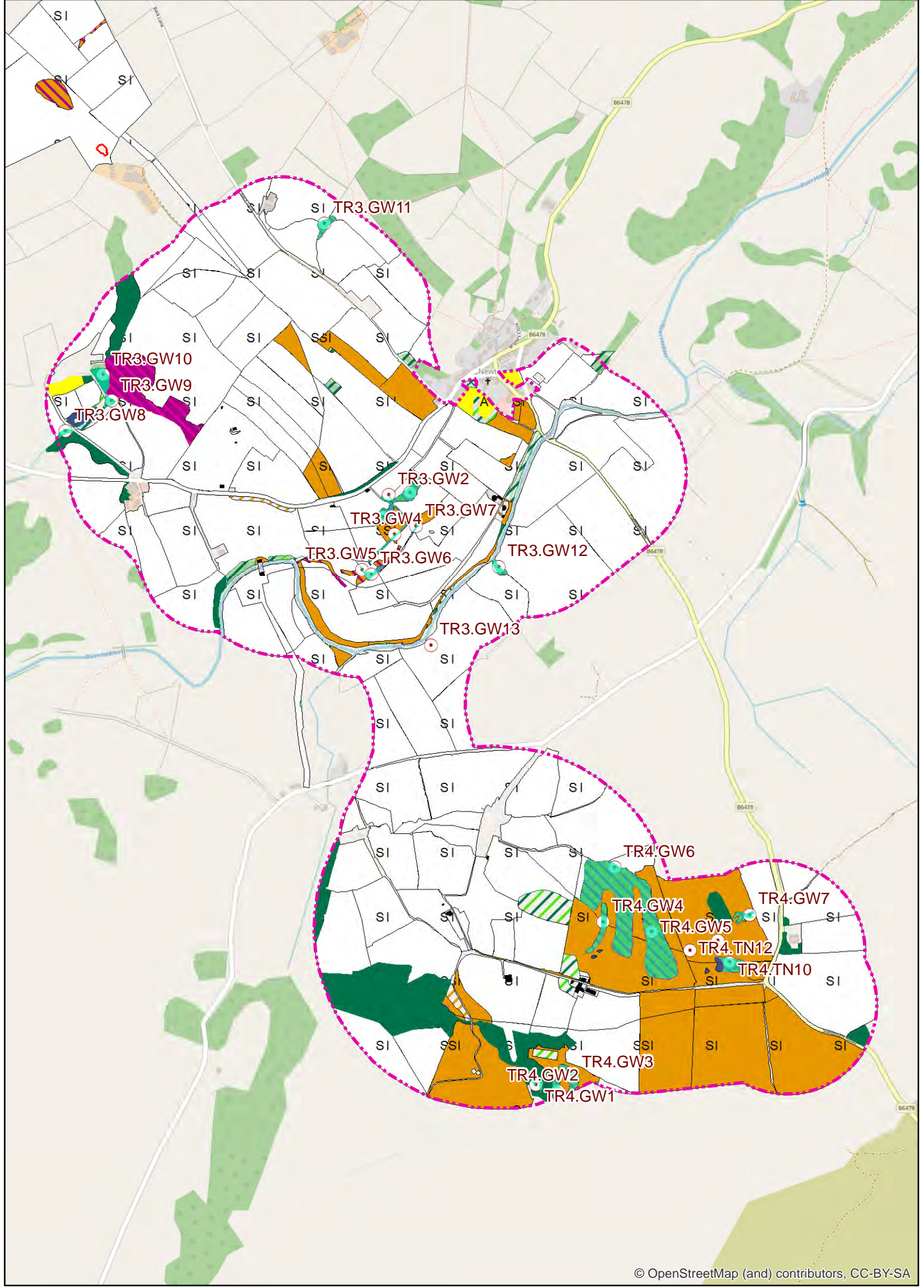




TR3 SOUTH TR4 NORTH



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