

Appendix B7: Ecology Assessment – Off-site Highways Works

Document reference: RVBC-MH_SEI-Appendix B7



**Haweswater Aqueduct Resilience Programme -
Proposed Marl Hill Section**

Supplementary Environmental Information

Appendix B7: Ecology Assessment - Off-Site Highways Works

January 2022



Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

Project No: B27070CT
Document Title: Proposed Marl Hill Section
Supplementary Environmental Information (SEI)
Appendix B7: Ecology Assessment - Off-Site Highways Works
Document ID: RVBC-MH_SEI-Appendix B7
Revision: 0
Date: January 2022
Client Name: United Utilities Water Ltd
Author: Kim Gallaher
Author: Liz Seal

TEP Limited
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH
Tel: 01925 844004
Fax: 01925 844002
E-mail: tep@tep.uk.com

Contents

1. Ecology Assessment of Off-Site Highway Works SEI..... 1

1.1 Introduction 1

1.2 Removal of Off-Site Highways Works 1

1.3 Provision of Technical Reports 2

1.4 Review of Additional Data 2

1.5 Potential for Increased Roadkill Risk to Barn Owls..... 5

1. Ecology Assessment of Off-Site Highway Works SEI

1.1 Introduction

- 1) United Utilities plc is seeking planning consent for the Haweswater Aqueduct Resilience Programme (HARP), which is a proposal to replace the underground tunnel sections of the existing 110 km Haweswater Aqueduct.
- 2) This is Appendix B7 Ecology Off-Site Highways Works and is a technical appendix of the Main Marl Hill Supplementary Environmental Information (SEI) report. Further SEI ecology information can be found in the following documents:
 - SEI technical appendix B5, Ecology Marl Hill
 - SEI technical appendix B6, Ecology Ribble Crossing
 - Marl Hill HRA addendum
 - Marl Hill SSSI addendum
 - Marl Hill BNG On-Site Habitat Compensation revised report
 - Marl Hill BNG Off-Site Habitat Compensation revised report.
- 3) This report assesses the transport routes of TR4 associated with the Proposed Marl Hill Section it excludes road widening locations RW21 to RW28 inclusive and passing places PP01 and PP02, these are all north of Waddington Fell Quarry and not required for the Proposed Marl Hill Section. Any additional ecology information relating to RW21 to RW28 or PP01 and PP01 is provided under the Proposed Bowland Section SEI.
- 4) This SEI technical appendix B7 provides information to be read in conjunction with the Environmental Statement (ES) and associated planning application for the Marl Hill Section of the Haweswater Aqueduct Resilience Programme (HARP), which were submitted to Ribble Valley Borough Council in June 2021. Specifically technical appendix B7 relates to and should be read in conjunction with ES Volume 5 Part II Ecology, Off-Site Highways Works. This SEI technical appendix B7 specifically relates to:
 - Removal of off-site highways works RW1-RW7 from the planning application
 - Provision of technical reports not included June 2021 submission
 - Review of environmental data not available at submission of the ES in June 2021
 - Review of consultation responses.

1.2 Removal of Off-Site Highways Works

- 5) Proposed off-site highways works road widenings RW1 through to RW7 are no longer required and have been removed from the planning application. The reduction in the scope of off-site highways works for the Proposed Marl Hill Section would reduce localised impacts on ecology as works are no longer proposed at these seven sites. No significant ecology effects were previously identified at these locations and therefore the change will result in no overall change in the ecology assessments described in the June 2021 Environmental Statement.

Impacts on Designations

- 6) It is worth confirming that following the removal of RW01 through to RW07 from the planning application, the only off-site highways works required to service the Proposed Marl Hill Section that overlaps with a Biological Heritage Site (BHS) designation is location RW17. The red line planning boundary associated with RW17 is a small linear area (approximately 50 m long and <10 m wide) on the southeast boundary of Waddington Fell and Browsholme Moor BHS. The land impacted is a semi-improved neutral grassland verge with sparse scattered scrub between the road and a drystone wall, beyond which is the wider BHS. It is likely that the verge was not intended to be included in the BHS

(which is designated due to moorland with upland heath, blanket bog, acid grassland and mire habitats) but is included within the boundaries due to the scale of mapping.

- 7) In considering alternatives, it is not possible to move the location further north or south along the road and still meet the construction traffic requirements. The semi-improved grassland verge on the opposite side of the road is completely outside the BHS but is narrower and would result in the red line planning boundary extending into dry heath / acid grassland mosaic habitat beyond the verge and drystone wall. Discussions have been held with representatives of Lancashire Wildlife Trust regarding the location of the off-site highways works and proposals for minimising and mitigating any effects and we understand there are no outstanding concerns.
- 8) The permanent land take associated with the road widening is a very narrow strip within the red line boundary (the wider area being required for construction working areas). Therefore, any ecologically valuable turfs or plants that couldn't be avoided during the construction phase, would be temporarily removed and stored before being reinstated within the red line boundary planning on completion of the road widening. Consultation with the contractor and appropriately seasonally timed pre-start surveys would ensure this approach was effective.

Impacts on Habitats and Species

- 9) Consultation responses relating to potential for impacts on otters at RW02, RW03 and RW04 were provided. The off-site highways works at these locations are no longer required and have been removed from the planning application.
- 10) Consultation responses relating to potential for impacts on trees within Bean Hill Woodland and Grassland BHS at RW02 were provided. The off-site highways works at this location is no longer required and have been removed from the planning application.

1.3 Provision of Technical Reports

- 11) The June 2021 ecology assessment (ES Volume 5 Part II) was informed by a number of technical documents that were not included with the submitted planning application. These are now provided as follows:
 - B7 Annex 1: Off-Site Highways Works - Ecology Data Summaries
 - B7 Annex 2: Off-Site Highways Works - Habitat Overview Report
 - B7 Annex 3: Off-Site Highways Works - Target Note Report
 - B7 Annex 4: Off-Site Highways Works – Hedgerows Report
 - B7 Annex 5: Off-Site Highways Works - Bat Tree Report.

1.4 Review of Additional Data

Biodiversity Net Gain

- 12) At the time of the June 2021 submission the BNG calculations for the RVBC Marl Hill application did not include figures for the Offsite Highways Works. These assessments have now been undertaken and are included in updated the BNG reports. The Marl Hill BNG On-Site Habitat Compensation revised report (RVBC-MH-APP-008_01 Rev 2) confirms baseline conditions pre and post development and the Marl Hill BNG Off-Site Habitat Compensation revised report (RVBC-MH-APP-008_02 Rev 2) confirms how 10% gain will be delivered.

GWDTE Assessment

- 13) Since the June 2021 submission the water specialists have completed the Ground Water Dependant Terrestrial Ecosystem (GWDTE) Assessment of the off-site highways works. A provisional assessment of likely impacts ecology impacts on GWDTE was made in the June 2021 submission pending review of the

technical assessment. The GWDTE report is provided in SEI appendix B3 and the ecology review and assessment of this data is provided on the following pages.

Table 1: GWDTE Ecology Assessment of Effects

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
Off-Site Highways Works Ref: RW14 . GWDTE Assessment Site Name: Browsholme Road South			
Marshy grassland	None	Moderate	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels, short term: Slight significant (far east of site) minor. Groundwater quality: Slight significant (far east of site) minor impact. <p>Ecology Assessment:</p> <p>The predicted changes to groundwater conditions will not have an ecologically significant impact on marshy grassland habitat.</p>
Off-Site Highways Works Ref: RW15 . GWDTE Assessment Site Name: Ringley Hey North			
Marshy grassland	None	Moderate	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels, short term: Large significant (in centre only) major impact (direct but localised impact to small area in centre of site). Groundwater flows/levels, long term: Moderate significant (in centre only) moderate impact (direct but localised impact to small area in centre of site). Groundwater quality: Moderate significant (in centre only) moderate impact (in the centre of the site, immediately downgradient). <p>Ecology Assessment:</p> <p>The marshy grassland within this GWDTE site is common and widespread in the wider area. The predicted changes to groundwater conditions are localised and will not have an ecologically significant impact on marshy grassland habitat.</p>
Off-Site Highways Works Ref: RW16 . GWDTE Assessment Site Name: Moorcock House East			
Marshy grassland	Waddington Fell and Browsholme Moor BHS <i>(BHS on west side of Slaidburn Road, opposite works area on east side of road)</i>	High	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels, short term: Large significant (in centre only) major impact (direct and localised impact to small area in centre of site). Groundwater flows/levels, long term: Moderate significant (in centre only) moderate impact (direct and localised impact to small area in centre of site).

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			<ul style="list-style-type: none"> Groundwater quality: Moderate significant (in centre only) moderate (in the centre of the site, immediately downgradient). <p>Ecology Assessment: The predicted changes to groundwater conditions are localised and will not have an ecologically significant impact on marshy grassland habitat. Additionally, as the impacts are localised to the centre of the GWDTE site, they would not reach the GWDTE habitat (marshy grassland) associated with the BHS.</p>
Off-Site Highways Works Ref: RW17 . GWDTE Assessment Site Name: Waddington Fell South			
Wet dwarf shrub heath, wet heath/acid grassland mosaic and marshy grassland	Waddington Fell and Browsholme Moor BHS	Moderate	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels, short term: Moderate significant (small area in the east only) moderate impact (direct and localised impact to small area in east of site which lies adjacent to and across-gradient of the works). Groundwater flows/levels, long term: Slight significant, minor impact. Groundwater quality: Slight significant, minor impact. <p>Ecology Assessment: The predicted impacts are restricted to a small area adjacent to RW17 mapped as wet dwarf shrub heath habitat. These localised and short term effects are not predicted to have a significant ecological impact on the wet dwarf shrub heath in the long term. Similarly no significant long term effects on the BHS are predicted to arise. The wet heath/acid grassland mosaic habitat is in the far north of the GWDTE site and outside the reach of the localised effects.</p>
Off-Site Highways Works Ref: RW18 . GWDTE Assessment Site Name: Waddington Fell			
Marshy grassland and wet dwarf shrub heath	Waddington Fell and Browsholme Moor BHS <i>(BHS on west side of Slaidburn Road, opposite works area RW18 on east side of road)</i>	High	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels - short term: Slight significant (small part of site) minor impact (works across / downgradient). Groundwater quality: Slight significant minor impact. <p>Ecology Assessment: The predicted impacts on short term ground water flows/level and groundwater quality are classed as minor/slight being restricted to only a small part of the GWDTE site. The GWDTE habitats on the same side of the road as the proposed works are marshy grassland and are not part of the BHS. The GWDTE habitats on</p>

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			the opposite (west) side of the road are marshy grassland and wet dwarf shrub heath and are within the BHS, however the wet heath is relatively distant to the proposed works and therefore unlikely to experience any effects. The predicted minor changes to groundwater conditions will not have an ecologically significant impact on marshy grassland habitat which is common and widespread in the immediate and wider area. Similarly, any effects experienced by the marshy grassland habitat along a very small length of the southwestern edge of the extensive BHS is not likely to have a permanent significant effect on functionality of the BHS, nor the range or extent of the habitats associated with the 268 ha BHS.
Off-Site Highways Works Ref: RW19 . GWDTE Assessment Site Name: Waddington Fell			
Marshy grassland	Waddington Fell and Browsholme Moor BHS <i>(BHS on west side of Slaidburn Road, south of works area RW19)</i>	Moderate	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels - short term: Large significant (small areas in the north and southeast) major impact (direct but localised impacts in the north and southeast of site). Groundwater flows/levels - long term: Moderate significant (small areas in the north and southeast) moderate impact (direct but localised impacts in the north and southeast of site). Groundwater quality: Moderate significant (small areas in the north and southeast only) moderate impact (in the north and southeast of the site, immediately downgradient). <p>Ecology Assessment:</p> <p>The marshy grassland within this GWDTE site is common and widespread in the wider area. The predicted changes to groundwater conditions are localised and will not have an ecologically significant impact on this small area of marshy grassland habitat. These GWDTE habitats are outside the BHS and therefore no effects on the BHS would arise.</p>
Off-Site Highways Works Ref: RW20 . GWDTE Assessment Site Name: Waddington Fell Quarries			
Marshy grassland and wet dwarf shrub heath	None	Moderate	<p>Water Environment Assessment Summary:</p> <ul style="list-style-type: none"> Groundwater flows/levels - short term: Large significant (centre of site only) major impact (direct but localised impact to small area in centre of site). Groundwater flows/levels - long term: Moderate significant (centre of site only) moderate impact (direct but localised impact to small area in centre of site). Groundwater quality: Moderate significant (small area in the centre of the site only) Moderate impact (in the centre of the site, immediately downgradient).

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			<p>Ecology Assessment: Although there are large/major short term effects and moderate long term effects of groundwater flows/levels and moderate effects to groundwater quality, these are restricted to a small localised area in the centre of the GWDTE site. The restricted extent of potential changes will not have a significant ecological impact on the marshy grassland and wet dwarf shrub heath habitats which are both extensive at this location.</p>

- 14) The original assessment submitted in June 2021 concluded that significant adverse effects on the River Ribble BHS, Waddington Fell and Bowsholme Moor BHS and Bellman Farm Marsh BHS were unlikely but that confirmation of this was pending review of the GWDTE assessment.
- 15) Offsite Highways works associated with the River Ribble BHS and Bellman Farm Marsh have been removed from the planning application and therefore no effects on GWDTE habitats associated with these designations will arise.
- 16) Since receiving the GWDTE assessment, this January 2022 assessment agrees with the assessment previously submitted in concluding that no ecologically significant adverse effects on Waddington Fell and Bowsholme Moor BHS would arise.
- 17) The original assessment submitted in June 2021 also concluded no ecologically significant effects on any GWDTE habitats either within or outside designations and this January 2022 assessment agrees with that conclusion.

1.5 Potential for Increased Roadkill Risk to Barn Owls

- 18) A query was raised about the potential for increased risk of barn owl roadkill as a result of tall hedge and tree removal that might otherwise raise barn owl flight lines over the road.
- 19) Between RW08 to RW20 (the off-site highways works locations required for the Proposed Marl Hill Section) the majority of the landscape is open and roadside trees and hawthorn scrub tend to be isolated, individual stands or relatively small groups and do not generally provide a significant solid feature along the road. However, closer to Waddington in the south the landscape along the road does contain more hedgerows and tree belts. Below is a summary of works locations with these features:
 - A hedgerow is present within RW09 but there are scattered trees along the opposite side of the road
 - A hedgerow is present within RW10 but there is a hedgerow along the opposite side of the road
 - A hedgerow is present within RW11 and RW10 but there is a hedgerow and buildings along the opposite side of the road
 - A hedgerow is present within RW12 but there is a tall tree belt along the opposite side of the road
 - Approximately 40 m of hedgerow is present within RW13 but outside the indicative footprint of the permanent road widening. The hedgerow has varying structure at this location and does not extend much further north of RW13. There are some individual trees and scattered scrub present on the opposite side of the road
 - Some dense scrub is present within RW15 but this does not form a high continuous feature.
- 20) Given the features on either side of the road are as described above, it is unlikely that the works would result in an ecologically significant increase in roadkill risk to barn owl.



**Haweswater Aqueduct Resilience Programme -
Proposed Marl Hill Section
Supplementary Environmental Information**

Appendix B7: Annex 1

Off-Site Highways Works - Ecology Data Summaries

January 2022



Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

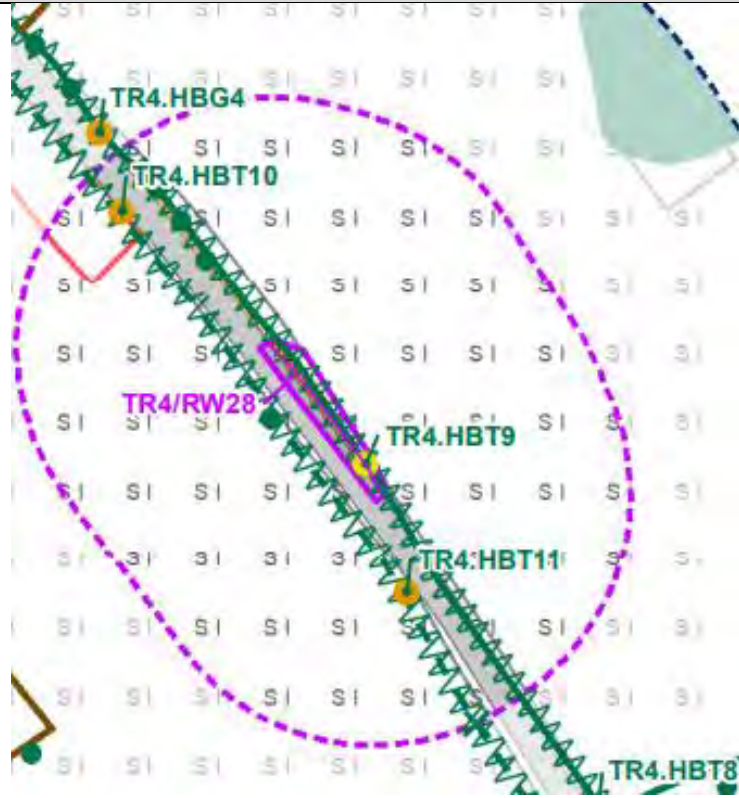

Project No: B27070CT
Document Title: Proposed Marl Hill Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 1: Off-Site Highways Works - Ecology Data Summaries
Document ID: RVBC-MH_SEI-Appendix B7 Annex 1
Revision: 0
Date: January 2022
Client Name: United Utilities
Author: Kim Gallaher
Author: Liz Seal

TEP Limited
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH
Tel: 01925 844004
Fax: 01925 844002
E-mail: tep@tep.uk.com

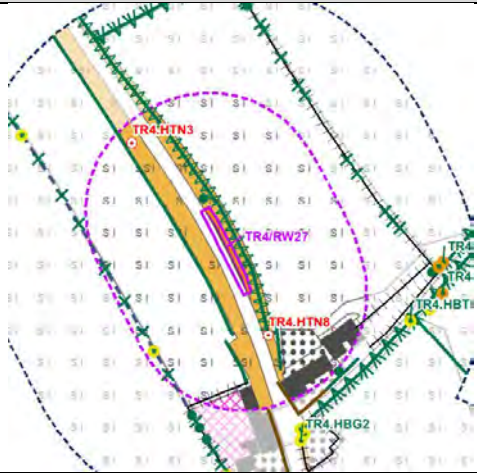


Document history and status

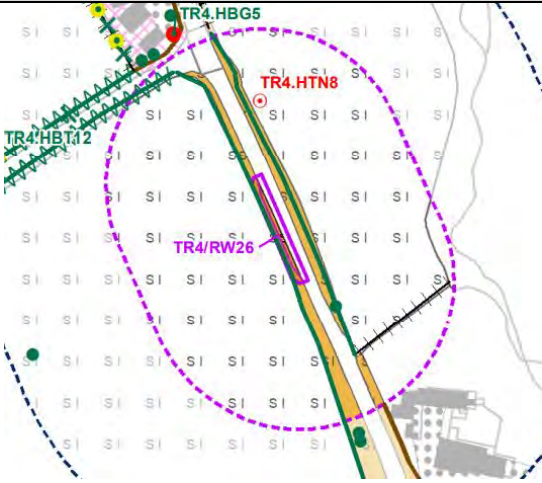

Revision	Date	Description	Author	Checked	Reviewed	Approved

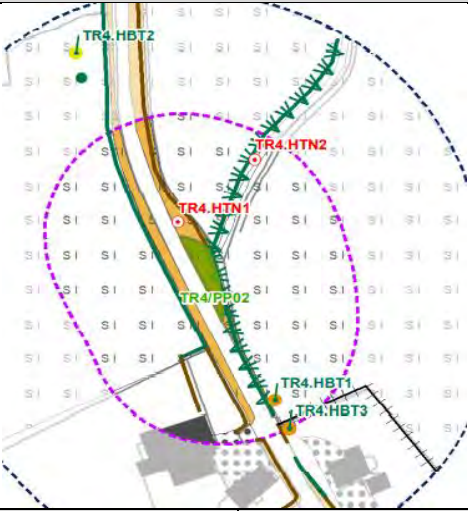



TR4 Marl Hill Highway Improvements – Ecology Baseline

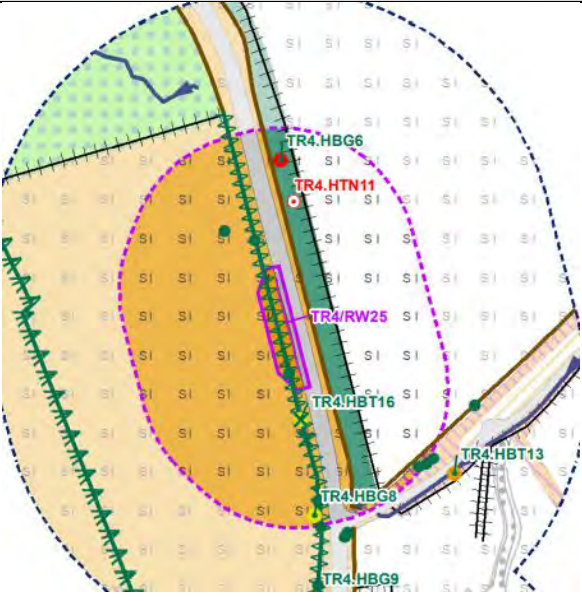


Works ID	TR4/RW28	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Historic Species Records			
Bell Sykes Meadows SSSI	2.9km to the North-east of the site	West European Hedgehog	Within 2k0m tetrad containing site	Curlew	Within 1km tetrad containing site
Field Head Meadow SSSI	3.5 km to the North-east of the site	Daubenton's Bat	Approx 1.1km north	Mallard	Within 1km tetrad containing site
Langcliff Cross Meadow SSSI	3.2km to the North-east of the site	Welsh Poppy	Within 1000m tetrad containing site	Weasel	Within 2km tetrad containing site
Bowland Fells SSSI	4.5km to the North-west of the site	Toothwort	Approx 300m north	Stoat	Approx 200m west
Myttons Meadows SSSI	3.1km to the North of the site	Melancholy Thistle	Approx 100m west	Soprano Pipistrelle	Approx 700m north west
Bowland Fells SPA	4.5km to the North-west of the site	Reflexed Saltmarsh-Grass	Approx 300m south	Eurasian Common Shrew	Approx 500m north west
Standridge Farm Pasture SSSI	4.6km to the North-east of the site	Long Stalked Yellow Sedge	Approx 300m south	Bats	Approx 600m northwest
North Penine Dales Meadows SAC	3.2km to the North-east of the site	Snowdrop	Approx 600m north west	Brown Hare	Within 2km tetrad containing site
		Blueish Veilwort	Approx 650m north west	Bullhead	Approx 600m north
		Atlantic Salmon	Approx 600m north	Common Frog	Approx 650m south west
Non Statutory Designated Wildlife Sites within 2km					
Waddington Fell Road, Roadside Verge BHS	Adjacent to site	Gamble Hole Farm Pasture	1.2km north-west of site	Clerk Laithe	1km north of site
Gibb's Wood and Bonstone Wood	1.9km south-west of site	Bradford Fell, Easington Fell & Harrop Fell	1.2km south-east of site	Great Dunnaw Hill	1.2km north of site
Newton North Roadside Verges	800m north of site	Newton West Roadside Verge	900m west of site	Little Dunnaw Wood	1.7km north-east of site
Great Dunnaw Wood	850m north of site	River Hodder	500m NW of site at nearest point		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds present in total, located approx. 400m (east) and 480m (south east)		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scattered broadleaved trees	Poor semi-improved grassland Species-rich intact hedgerow Species-rich defunct hedgerow		TR4.HBT10 	TR4.HBT9 	
			TR4.HBT11 		

Protected Species Assessment	Summary of Constraints
<ul style="list-style-type: none"> • One tree within the site has low potential to support roosting bats (TR4.HBT9). • Two trees adjacent to the site (opposite side of the road) have moderate potential to support roosting bats (TR4.HBT10, TR4.HBT11). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal. • The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. • The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). • Amphibians are unlikely to be present due to distance of nearest potential breeding pond (> 400m). 	<ul style="list-style-type: none"> • Habitats will be not reinstated on completion of the works. • Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated verge habitat. • Hedgerow could be classed as important under the Hedgerow Regulations 1997. • Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. • Loss of a small area of adjacent species-poor semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. • Works should avoid the nesting bird season or be subject to nesting bird checks. • The location of the current proposals will result in the loss of a tree with low potential to support roosting bats (TR4.HBT9). Consideration should be given to moving the works further north or further south to avoid loss of this tree. If removal of this tree is still required to facilitate works, or works are required to other trees with roosting potential, further surveys will be required in relation to roosting bats before works can commence.

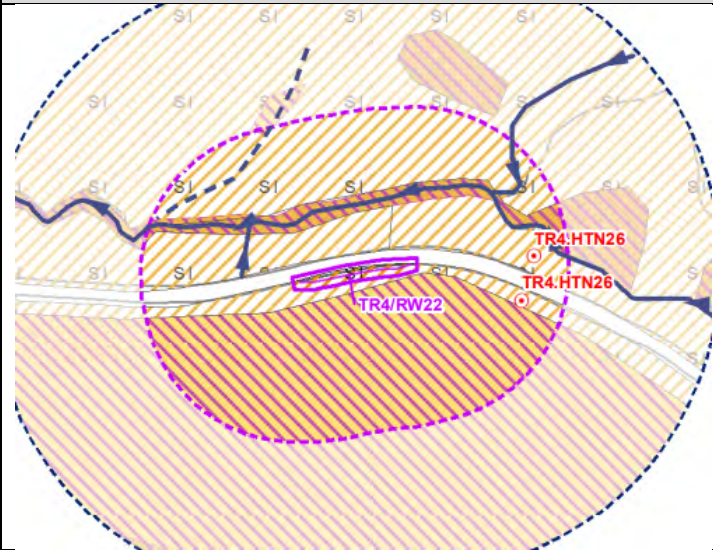

Works ID	TR4/RW27	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Historic Species Records			
Bell Sykes Meadows SSSI	3.1km to the North-east of the site	West European Hedgehog	Within 2000m tetrad containing site	Curlew	Within 1km tetrad containing site
Field Head Meadow SSSI	3.7 km to the North-east of the site	Blueish Veilwort	Approx 950m north west	Mallard	Approx 300m west
Langcliff Cross Meadow SSSI	3.5km to the North-east of the site	Welsh Poppy	Approx 300m north	Weasel	Approx 300m north
Bowland Fells SSSI	4.8km to the North-west of the site	Toothwort	Approx 600m north	Stoat	Approx 200m north-west
Myttons Meadows SSSI	3.4km to the North of the site	Melancholy Thistle	Approx 300m north-west	Soprano Pipistrelle	Approx 1km north west
Bowland Fells SPA	4.7km to the North-west of the site	Reflexed Saltmarsh-Grass	Within 2000m tetrad containing site	Eurasian Common Shrew	Approx 700m north west
Standridge Farm Pasture SSSI	4.9km to the North-east of the site	Long Stalked Yellow Sedge	Within 2000m tetrad containing site	Bats	Approx 900m northwest
North Penine Dales Meadows SAC	3.4km to the North-east of the site	Snowdrop	Approx 900m north west	Brown Hare	Within 2km tetrad containing site
		Atlantic Salmon	Approx 900m north	Common Frog	Approx 350m south west
		Bullhead	Approx 900m north		
Non Statutory Designated Wildlife Sites within 2km					
Waddington Fell Road, Roadside Verge BHS	Within the site	Great Dunnov Hill	1.5km north of site	Newton West Roadside Verge	900m west of site
Gibb's Wood and Bonstone Wood	1.6km south-west of site	Little Dunnov Wood	1.9km north-east of site	River Hodder	800m NW of site at nearest point
Newton North Roadside Verges	1.1km north of site	Gibb's Wood and Bonstone Wood	1.5km south west of site	Clerk Laithe	1.3km north of site
Great Dunnov Wood	1km north of site	Ashnott Wood	2km south west of site	Great Dunnov Hill	1.5km north of site
Gamble Hole Farm Pasture	1.4km north-west of site	Bonstone Brook Pastures	1.9km south west of site	Little Dunnov Wood	1.9km north-east of site
Bradford Fell, Easington Fell & Harrop Fell	900m south-east of site	Newton North Roadside Verges	1.1km north of site	Gibb's Wood and Bonstone Wood	1.5km south west of site
Newton West Roadside Verge	900m west of site	Great Dunnov Wood	1km north of site	Ashnott Wood	2km south west of site
River Hodder	800m NW of site at its nearest point	Gamble Hole Farm Pasture	1.4km north-west of site	Bonstone Brook Pastures	1.9km south west of site
Clerk Laithe	1.3km north of site	Bradford Fell, Easington Fell & Harrop Fell	900m south-east of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds present in total, located approx. 450m (north-east) and 400m (east)		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland	Native species-rich hedgerow Scattered broadleaved trees Poor Semi-improved grassland Species-poor intact hedgerow				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (> 400m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge and will involve removal of a small area of potentially botanically diverse grassland. In its current location there will be loss of habitats associated with Waddington Fell Road, Roadside Verge BHS. Consideration should be given to moving works outside this designation (further north). Any impacts to locally designated sites will require consultation with the LPA. Potential loss of priority habitat – further survey in the appropriate season is recommended. Mitigation for priority habitat loss will be required which needs agreeing with the LPA. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields). 		

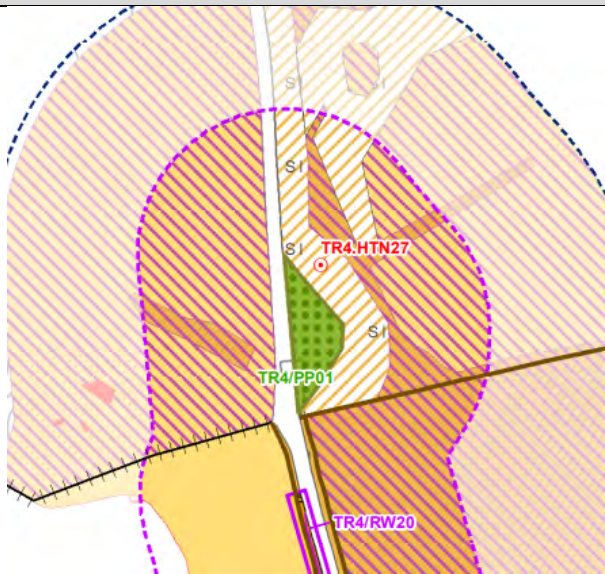

Works ID	TR4/RW26	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Bell Sykes Meadows SSSI	3.3km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	450m north of site	River Hodder	950m north west of site at its nearest point
Field Head Meadow SSSI	3.8 km to the North-east of the site	Gibb's Wood and Bonstone Wood	1.4km south-west of site	Clerk Laithe	1.5km north of site
Langcliff Cross Meadow SSSI	3.7km to the North-east of the site	Newton North Roadside Verges	1.2km north of site	Great Dunnaw Hill	1.7km north of site
Bowland Fells SSSI	4.9km to the North-west of the site	Great Dunnaw Wood	1.1km north of site	Gibb's Wood and Bonstone Wood	1.2km south west of site
Myttons Meadows SSSI	3.55km to the North of the site	Gamble Hole Farm Pasture	1.6km north-west of site	Ashnott wood	1.8km south west of site
Bowland Fells SPA	4.7km to the North-west of the site	Bradford Fell, Easington Fell & Harrop Fell	750m south-east of site	Bonstone Brook Pastures	1.7km south west of site
North Penine Dales Meadows SAC	3.5km to the North-east of the site	Newton West Roadside Verge	900m north-west of site	Crag House Roadside Verges	2km south west of site
		Waddington Fell and Browsholme Moore	1.8km south of site		
Historic Species Records					
Curlew	Within 1000m tetrad containing site	Brown Hare	Within 2km tetrad containing site	Long Stalked Yellow Sedge	Within 2km tetrad containing site
Mallard	Approx 300m west	West European Hedgehog	Within 2km tetrad containing site	Snowdrop	Approx 1.1km north west
Weasel	Approx 500m north	Blueish Veilwort	Approx 1.1km north west	Atlantic Salmon	Approx 1km north
Stoat	Approx 400m north-west	Welsh Poppy	Approx 500m north	Bullhead	Approx 1km north
Soprano Pipistrelle	Approx 1.2km north west	Toothwort	Approx 800m north	Common Frog	Approx 200m south west
Eurasian Common Shrew	Approx 900m north west	Melancholy Thistle	Approx 500m north-west		
Bats	Approx 1.1m northwest	Reflexed Saltmarsh-Grass	Within 2km tetrad containing site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds present in total, located approx. 490m (north-east) and 400m (east)		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Semi-improved neutral grassland Species-poor intact hedgerow	Semi-improved neutral grassland Species-poor intact hedgerow Poor semi-improved grassland Scattered broadleaved trees				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (> 400m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge, therefore it is assumed the adjacent hedgerow will not be impacted by the proposals. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields). 		

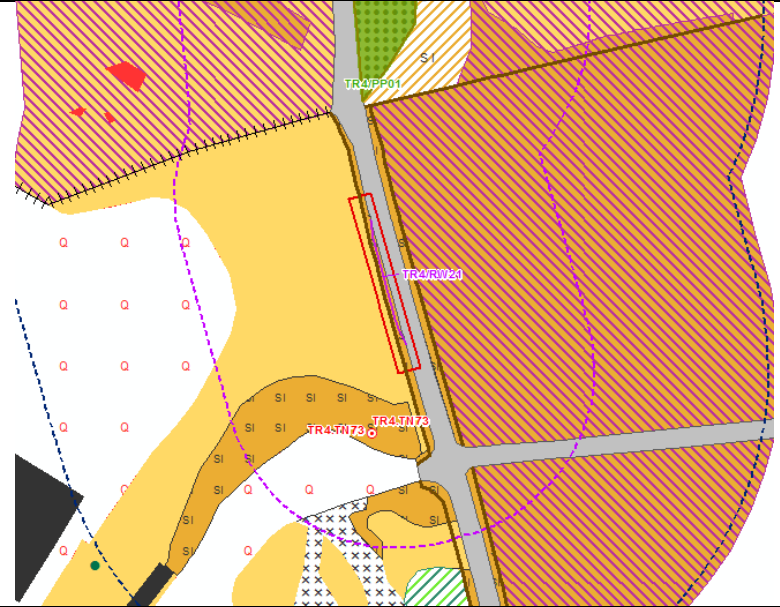
Works ID	TR4/PP02	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Bell Sykes Meadows SSSI	3.55km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	650m north of site	River Hodder	1.2km north west of site at its nearest point
Field Head Meadow SSSI	3.9 km to the North-east of the site	Gibb's Wood and Bonstone Wood	1.25km west of site	Clerk Laithe	1.9km north of site
Langcliff Cross Meadow SSSI	3.6km to the North-east of the site	Ashnott Wood	1.5km south-west of site	Great Dunnaw Hill	1.95km north of site
Bowland Fells SSSI	4.8km to the North-west of the site	Bonstone Brook Pasture's	1.1km south of site	Great Dunnaw Wood	1.7km north of site
Myttons Meadows SSSI	4km to the North of the site	Waddington Fell and Browsholme Moor	1.3m south of site	Newton North Roadside Verges	1.8km north of site
Bowland Fells SPA	4.8km to the North-west of the site	Bradford Fell, Easington Fell & Harrop Fell	600m east of site	Gamble Hole Farm Pasture	1.9km north of site
North Penine Dales Meadows	3.6km to the North-west of the site	Newton West Roadside Verge	1.3km north west of site		
Historic Species Records					
Common Frog	Approx 900m north west	Ringlet	Approx 600m south west	Reflexed Saltmarsh-Grass	Within 2km tetrad containing site
Lapwing	Approx. 450m south	Small Heath	Approx 600m south west	Broad-leaved Helloborine	Adjacent to site
Curlew	Within 1km tetrad containing site	Brown Hare	Within 1km tetrad containing site	Autumn Gentain	Approx 1.1km south east
Mallard	Within 1km tetrad containing site	West European Hedgehog	Within 1km tetrad containing site	Welsh Poppy	Approx 400m west
Dark Green Fritillary	Approx 600m south west	Long Stalked Yellow Sedge	Within 2km tetrad containing site	Buzzard	1km south east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Semi-improved neutral grassland	Poor semi-improved grassland Species rich hedgerow Scattered broadleaved trees Species-poor intact hedge Dry stone wall		<p>TR4.HTN1</p>   <p>TR4.HBT1</p> 		
Protected Species Assessment		Summary of Constraints			
<ul style="list-style-type: none"> This verges (TR4.HTN1) provides opportunities for small mammals, nesting birds and reptiles as well as commuting habitat for bats. The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 		<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge which appears to already be partially used as a pull in place, therefore it is assumed the adjacent hedgerow and wall will not be impacted by the proposals. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows, walls and adjacent fields). 			


Works ID	TR4/RW25	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadows SSSI	3.7km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	740m north of site	Common Frog	Approx 700m north west
Field Head Meadow SSSI	4 km to the North-east of the site	Gibb's Wood and Bonstone Wood	1.3km west of site	Lapwing	Approx. 150m south
Langcliff Cross Meadow SSSI	3.5km to the North-east of the site	Ashnott Wood	1.3km south-west of site	Curlew	Within 1000m tetrad containing the site
Bowland Fells SSSI	4.8km to the North-west of the site	Bonstone Brook Pasture's	600m south of site	Mallard	Approx 800m northwest
Myttons Meadows SSSI	4.5km to the North of the site	Waddington Fell and Browsholme Moor	900m south of site	Dark Green Fritillary	Approx 600m west
Bowland Fells SPA	4.8km to the North-west of the site	Bradford Fell, Easington Fell & Harrop Fell	400m east of site	Ringlet	Approx 600m west
North Penine Dales Meadows SAC	3.6km North-west of the site	Newton West Roadside Verge	1.8km north west of site	Small Heath	Approx 600m west
		River Hodder	1.4km NW of site at nearest point	Brown Hare	Within 1000m tetrad containing the site
				West European Hedgehog	Within 1000m tetrad containing the site
				Long Stalked Yellow Sedge	Within 2000m tetrad containing the site
				Reflexed Saltmarsh-Grass	Within 2000m tetrad containing the site
				Broad-leaved Helloborine	Approx 50m north west
				Autumn Gentain	Approx 900m south east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Species-rich intact hedgerow Semi-improved neutral grassland Scattered broadleaved trees	Species-rich intact hedgerow Semi-improved neutral grassland Semi-natural broadleaved woodland Poor semi-improved grassland		TR4.HBT16 		
			TR4.HTN11 		
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> One tree in close proximity to the south of the site has low potential to support roosting bats (TR4.HBT16). This tree will not be removed to facilitate works but there is a risk overhanging branches may require removal. Other trees with bat roosting potential are present but are located sufficient distance from the works to assume no impacts to these trees will occur (TR4.HBG6 and TR4.HBG8). The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Loss of a small area of adjacent semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. Works should avoid the nesting bird season or be subject to nesting bird checks. Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. 		

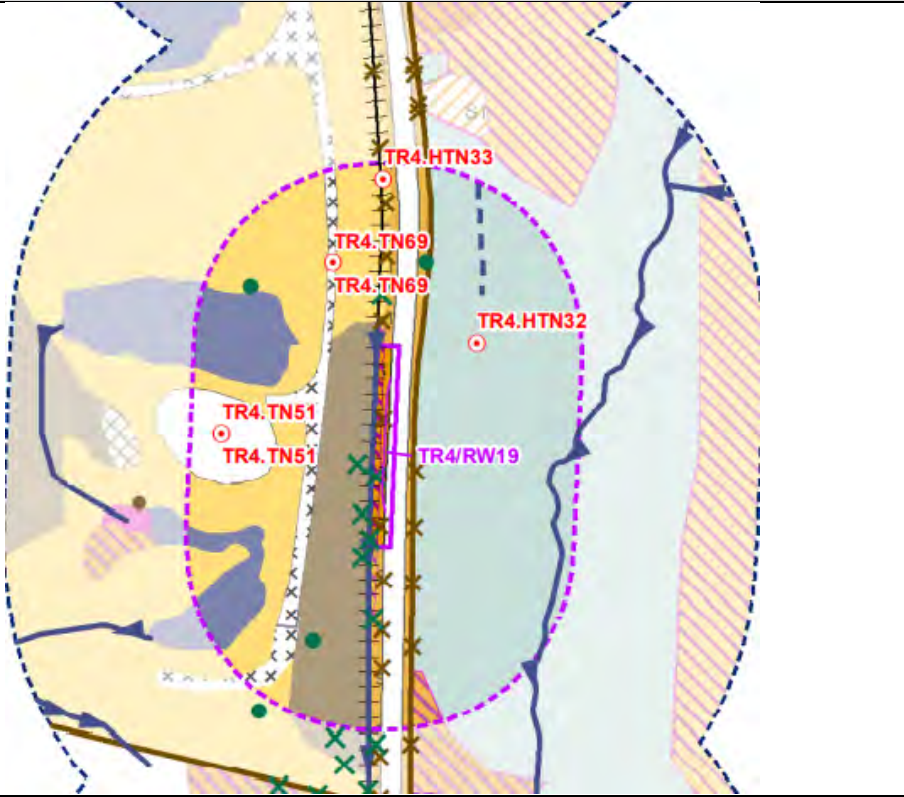

Works ID	TR4/RW23	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadows SSSI	4.5km to the North of the site	Waddington Fell Road, Roadside Verge BHS	1.5m north-west of site	Lapwing	Approx 600m north
Field Head Meadow SSSI	4.7km to the North-east of site	Gibb's Wood and Bonstone Wood	1.6km north-west of site	Broom Moth	Approx 900m south-east
Langcliff Cross Meadow SSSI	4.2km to the North-east of site	Ashnott Wood	1.8km west of site	Brown Hare	Within 1000m tetrad containing site
Myttons Meadows SSSI	4.9km to the North of the site	Bonstone Brook Pasture's	600m west of site	West European Hedgehog	Within 1000m tetrad containing site
North Penines Dales Meadows	4.1km to the North-west of site	Waddington Fell and Browsholme Moor	200m south of site	Long Stalked Yellow Sedge	Within 2000m tetrad containing site
		Bradford Fell, Easington Fell & Harrop Fell	Within the site	Reflexed Saltmarsh-Grass	Within 2000m tetrad containing site
				Broad-leaved Helloborine	Approx 700m north west
				Autumn Gentain	Approx 100m south
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved neutral grassland Semi-improved acid grassland	Poor semi-improved neutral grassland Semi-improved acid grassland Marshy grassland Continuous bracken Running water Dry stone wall				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the poor SI grassland road verge. No significant impacts anticipated. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

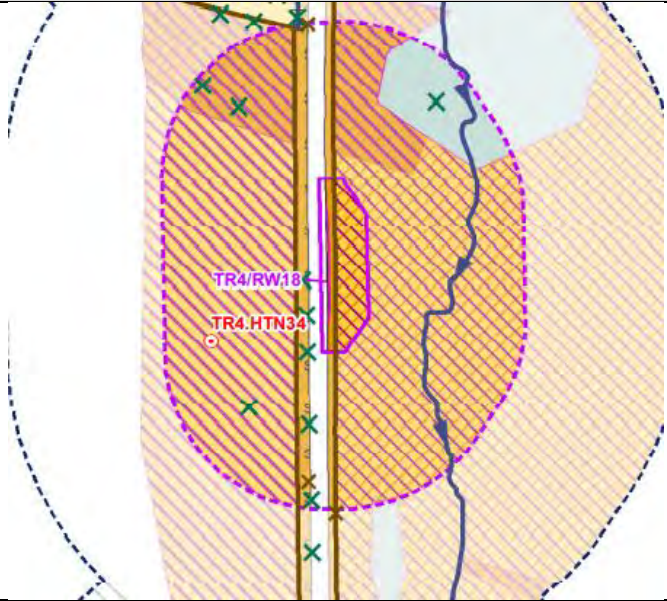

Works ID	TR4/RW22	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadows SSSI	4.7km to the NW of the site	Waddington Fell Road, Roadside Verge BHS	1.5m north-west of site	Lapwing	Approx 900m north-west
Field Head Meadow SSSI	4.7km to the N of the site	Gibb's Wood and Bonstone Wood	1.6km north-west of site	Broom Moth	Approx 300m south-east
Langcliff Cross Meadow SSSI	4.1km to the N of the site	Ashnott Wood	1.8km west of site	Green Hairstreak	Approx 300m south
Myttons Meadows SSSI	4.9km to the NW of the site	Bonstone Brook Pasture's	600m west of site	Speckled Wood	Approx 300m south
North Penine Dales Meadows SAC	4.3km north west of the site	Waddington Fell and Browsholme Moor	200m south of site	Brown Hare	Within 1000m tetrad containing site
		Bradford Fell, Easington Fell & Harrop Fell	Adjacent to the site	West European Hedgehog	Within 1000m tetrad containing site
				Roe Deer	Approx 400m east
				Long Stalked Yellow Sedge	Within 2000m tetrad containing site
				Reflexed Saltmarsh-Grass	Within 2000m tetrad containing site
				Broad-leaved Helleborine	Approx 700m north west
				Autumn Gentain	Adjacent to site
				Cowberry	Approx 100m east
				Tawny Sedge	Approx 100m east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved acid grassland	Semi-improved acid grassland Marshy grassland Wet dwarf shrub heath Running water Dry ditch			<p>TR4.HTN26</p> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent grasslands have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the poor SI grassland road verge. No significant impacts anticipated. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

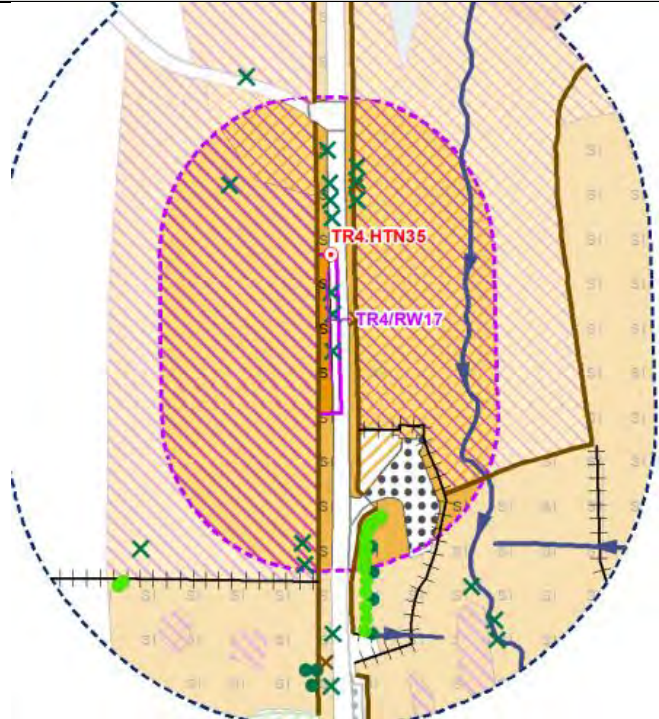

Works ID	TR4/PP01	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.9km north of site	Bonstone Brook Pastures	1.2km north west of site	Broom Moth	Within 1km tetrad containing site
Field Head Meadow SSSI	4.5km north east of site	Waddington Fell and Browsholme Moor	Adjacent to site	Green Hair Streak	Adjacent to site
Langcliff Cross Meadow SSSI	3.7km north east of site	Bradford Fell, Easington Fell & Harrop Fell	Adjacent to site	Speckled Wood	Adjacent to site
North Penine Dale Meadows SAC	4.5km north west of the site			Brown Hare	Within 1km tetrad containing site
				West European Hedgehog	Within 1km tetrad containing site
				Roe Deer	Approx 200m east
				Autumn Gentian	Approx 300m north west
				Reflexed Sat-Marsh Grass	Within 2km tetrad containing site
				Long stalked yellow sedge	Within 2km tetrad containing site
				Cowberry	Approx 200m east
				Tawny Sedge	Approx 200m east
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds in total, located approx. 350m (south), 400m (south) and 400m (south west) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Bare ground	Semi-improved acid grassland Marshy grassland Acid dry dwarf shrub heath Wet dwarf shrub heath Dry stone wall				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent grasslands have ground nesting bird potential. Limited habitats within the site – unlikely to be any significant impacts to protected species Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 300m). Waterbodies are present within 200m but these are man-made features associated with the nearby aggregate works, remnant of quarrying/extraction activities. 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to existing bare ground that is used for parking. No significant impacts anticipated. It is assumed no construction works anticipated at this site, or if works are anticipated these would be minor and species in the wider area would be habituated to vehicles in this location. No requirement for nesting bird checks or other ecological surveys. 		

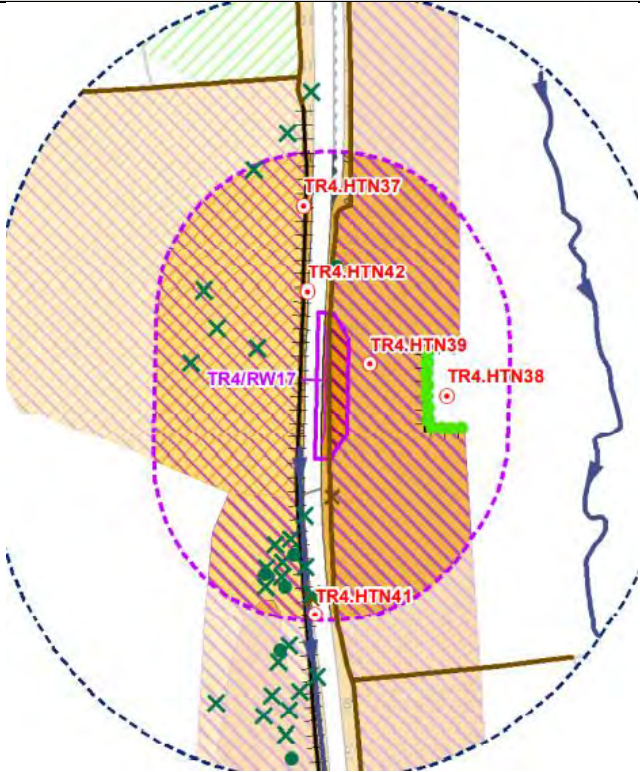


Works ID	TR4/RW21	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.95km north of site	Bonstone Brook Pastures	1.25km north west of site	Broom Moth	Within 1000m tetrad containing the site
Field Head Meadow SSSI	4.55km north east of site	Waddington Fell and Browsholme Moor	Adjacent to site	Green Hair Streak	Adjacent to site
Langcliff Cross Meadow SSSI	3.75km north east of site	Bradford Fell, Easington Fell & Harrop Fell	Adjacent to site	Speckled Wood	Adjacent to site
North Penine Dale Meadows SAC	4.55km north west of the site			Brown Hare	Within 1000m tetrad containing the site
				West European Hedgehog	Within 1000m tetrad containing the site
				Roe Deer	Approx 200m east
				Autumn Gentian	Approx 350m north west
				Reflexed Sat-Marsh Grass	Within 2000m tetrad containing the site
				Long stalked yellow sedge	Within 2000m tetrad containing the site
				Cowberry	Approx 200m east
				Tawny Sedge	Approx 200m east
Ponds present within 500m (mapping review only)		Desktop constraints			
5 ponds in total, located approx. 300m (south), 350m (south) and 350m (south west), 450m (south), 475m (south) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Semi-improved neutral grassland Acid dry dwarf shrub heath Dry stone wall	Acid dry dwarf shrub heath Marshy grassland Semi-improved neutral grassland Quarry Semi-improved acid grassland Bare ground Dense/continuous ephemeral/short perennial Plantation mixed woodland Dry stone wall		None		
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 300m). Waterbodies are present within 150m but these are man-made features associated with the nearby aggregate works, remnant of quarrying/extraction activities. 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent acid dry dwarf shrub heath which could qualify as a priority habitat. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

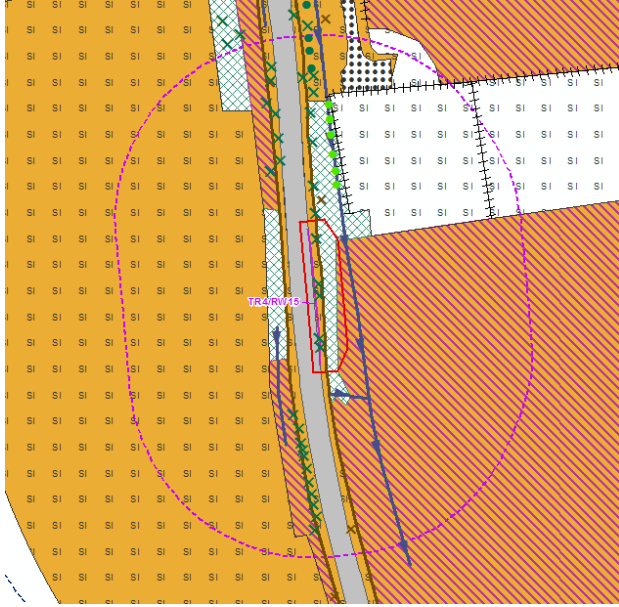
Works ID	TR4/RW20	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.95km north of site	Bonstone Brook Pastures	1.25km north west of site	Broom Moth	Within 100m tetrad containing site
Field Head Meadow SSSI	4.55km north east of site	Waddington Fell and Browsholme Moor	Adjacent to site	Green Hair Streak	Adjacent to site
Langcliff Cross Meadow SSSI	3.75km north east of site	Bradford Fell, Easington Fell & Harrop Fell	Adjacent to site	Speckled Wood	Adjacent to site
North Penine Dale Meadows SAC	4.55km north west of the site			Brown Hare	Approx 100m north
				West European Hedgehog	Approx 100m north
				Roe Deer	Approx 100m east
				Autumn Gentian	Approx 300m north
				Reflexed Sat-Marsh Grass	Approx 100m east
				Long stalked yellow sedge	Approx 100m east
				Cowberry	Approx 50m east
				Snowdrop	Approx 200m south
Ponds present within 500m (mapping review only)		Desktop constraints			
5 ponds in total, located approx. 300m (south), 350m (south) and 350m (south west), 450m (south), 475m (south) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Semi-improved acid grassland Marshy grassland Wet dwarf shrub heath Dry stone wall	Semi-improved neutral grassland Semi-improved acid grassland Marshy grassland Wet dwarf shrub heath Running water Dense/continuous ephemeral/short perennial Acid dry dwarf shrub heath Standing water			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 300m). Waterbodies are present within 60m but these are man-made features associated with the nearby aggregate works, remnant of quarrying/extraction activities. 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the grassland road verge. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent mosaic of heath habitats which could qualify as a priority habitat. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

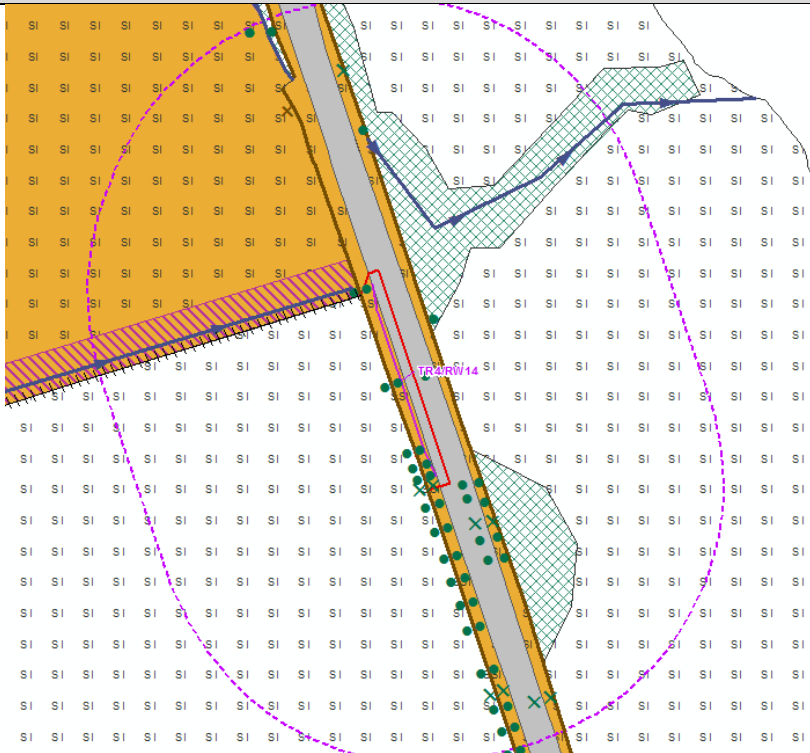
Works ID	TR4/RW19	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	5km north of site	Bonstone Brook Pastures	1.5km north west of site	Curlew	Approx 1.5km south
Field Head Meadow SSSI	4.8km north east of site	Waddington Fell and Browsholme Moor	70m south of the site	Green Hair Streak	Within 1km tetrad containing the site
Langcliff Cross Meadow SSSI	4.1km north east of site	Bradford Fell, Easington Fell & Harrop Fell	200m north of the site	Speckled Wood	Within 1km tetrad containing the site
North Penine Dale Meadows SAC	4.9km north west of the site			Brown Hare	Approx 100m north
				West European Hedgehog	Approx 100m north
				Roe Deer	Approx 50m east
				Autumn Gentian	Approx 300m north
				Reflexed Sat-Marsh Grass	Approx 100m east
				Snowdrop	Approx 100m south
				Cowberry	Approx 50m east
Ponds present within 500m (mapping review only)		Desktop constraints			
5 ponds in total, located approx. 300m (south), 350m (south) and 350m (south west), 450m (south), 475m (south) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Marshy grassland Scattered scrub Scattered bracken Running water	Continuous bracken Acid dry dwarf shrub heath Dry ditch Scattered bracken Scattered scrub Scattered broadleaved trees Dense/continuous ephemeral/short perennial Other habitat Standing water Wet dwarf shrub heath Wall Running water				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 300m). Waterbodies are present within 150m but these are man-made features associated with the nearby aggregate works, remnant of quarrying/extraction activities. 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI/marshy grassland road verge. No significant impacts anticipated. It is assumed the adjacent fence and watercourse will remain in-situ, thus protecting the adjacent habitats. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). Waddington Fell and Browsholme Moor BHS lies approx. 70m south of the site on the opposite side of the road. 		

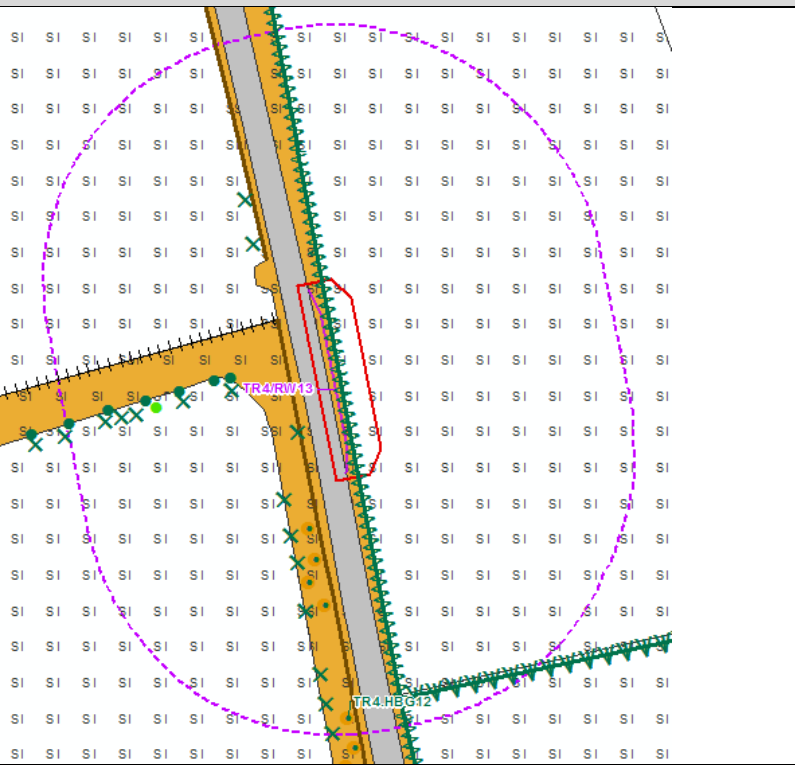

Works ID	TR4/RW18	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Langcliff Cross Meadow SSSI	4.3km north east of the site	Bradford Fell, Easington Fell & Harrop Fell	300m east of the site	Speckled Wood	Within 1km tetrad containing the site
Cross Hill Quarry LNR	4.7km south east of the site	Waddington Fell and Browsholme Moor	Adjacent to the site	Green Hairstreak	Within 1km tetrad containing the site
		Feazer Wood	1.6km south east of the site	Broom Moth	Approx 400m north
		Drakehouse Wood	1.9km south east of the site	Roe Deer	Approx 50m east
				Brown Hare	Approx 200m north
				European Hedgehog	Approx 50m east
				Snowdrop	Approx 400m south
				Cowberry	Approx 50m east
Ponds present within 500m (mapping review only)		Desktop constraints			
5 ponds in total, located approx. 300m (north), 350m (north), 400m (north) and 450m (north west), 500m (north west) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Wet heath/acid grassland mosaic Dry stone wall	Wet heath/acid grassland mosaic Acid dry dwarf shrub heath Wall Scattered scrub Semi-improved neutral grassland Running water Wet dwarf shrub heath Marshy grassland			TR4.HTN34 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 300m). Waterbodies are present within 100m but these are man-made features associated with the nearby aggregate works, remnant of quarrying/extraction activities. 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent Wet heath/acid grassland mosaic which could qualify as a priority habitat. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). Waddington Fell and Browsholme Moor BHS lies adjacent to the site on the opposite side of the road. 		

Works ID	TR4/RW17	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Langcliff Cross Meadow SSSI	4.4km north east of the site	Bradford Fell, Easington Fell & Harrop Fell	300m east of the site	Speckled Wood	Approx 200m north
Cross Hill Quarry LNR	4.6km south east of the site	Waddington Fell and Browsholme Moor	Adjacent to the site	Green Hairstreak	Approx 200m north
		Feazer Wood	1.5km south east of the site	Broom Moth	Approx 500m north
		Drakehouse Wood	1.8km south east of the site	Roe Deer	Approx 50m east
				Brown Hare	Approx 300m north
				European Hedgehog	Approx 300m south
				Snowdrop	Approx 200m south
				Cowberry	Approx 50m east
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds in total, located approx. 400m (north), 450m (north) and 500m (north) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Wall Wet dwarf shrub heath Scattered scrub	Semi-improved neutral grassland Wet dwarf shrub heath Scattered scrub Wall Running water Wet heath/acid grassland mosaic Scattered coniferous tree Semi-improved acid grassland Bare ground			TR4.HTN35 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c. 400m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge. However the verge of the road appears to be part of Waddington Fell and Browsholme Moor BHS. In its current location there will be loss of habitats associated with a BHS. Consideration should be given to moving works outside this designation (opposite side of the road). Any impacts to locally designated sites will require consultation with the LPA. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

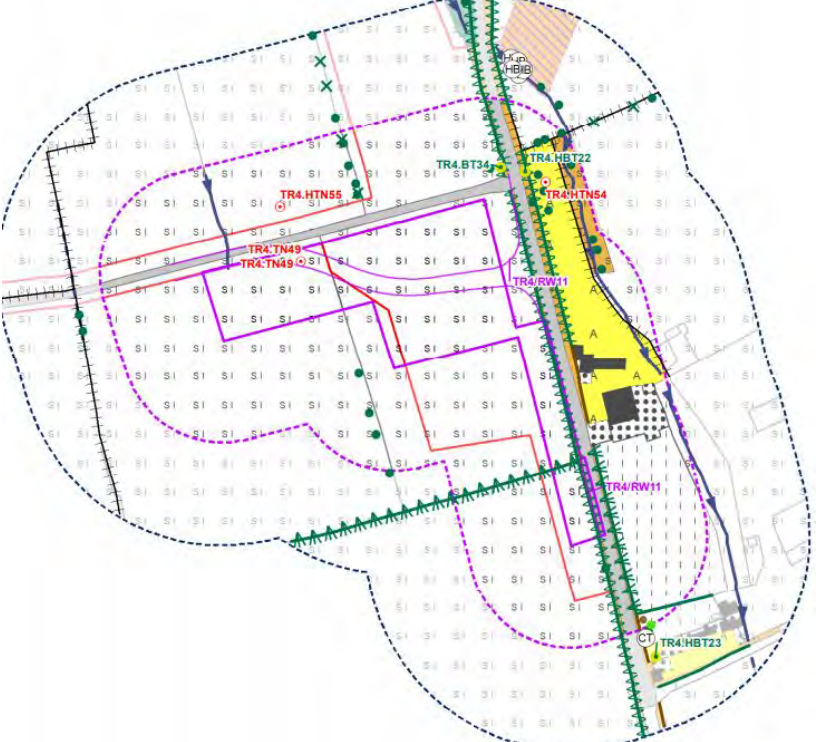

Works ID	TR4/RW16	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Langcliff Cross Meadow SSSI	4.8km north east of the site	Bradford Fell, Easington Fell & Harrop Fell	600m north east of the site	Curlew	Approx 800m south
Cross Hill Quarry LNR	4.4km south east of the site	Waddington Fell and Browsholme Moor	400m north of the site	Speckled Wood	Approx 500m north
Coplow Quarry SSSI	4.8km south east of the site	Feazer Wood	1.5km south east of the site	Green Hairstreak	Approx 500m north
		Drakehouse Wood	1.7km south east of the site	Roe Deer	Approx 50m east
		Hospital Wood	1.9km south of the site	Brown Hare	Approx 300m south
				European Hedgehog	Approx 300m south
				Stoat	Approx 250m south west
				Snowdrop	Within 1000m tetrad containing the site
				Cowberry	Approx 50m east
				Southern Marsh Orchid	Approx 800m south east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
	Wet dwarf shrub heath Wall Scattered coniferous trees Running water Fence Wet heath/acid grassland mosaic Scattered scrub				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent habitats have ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). Waddington Fell and Browsholme Moor BHS lies adjacent to the site on the opposite side of the road. 		

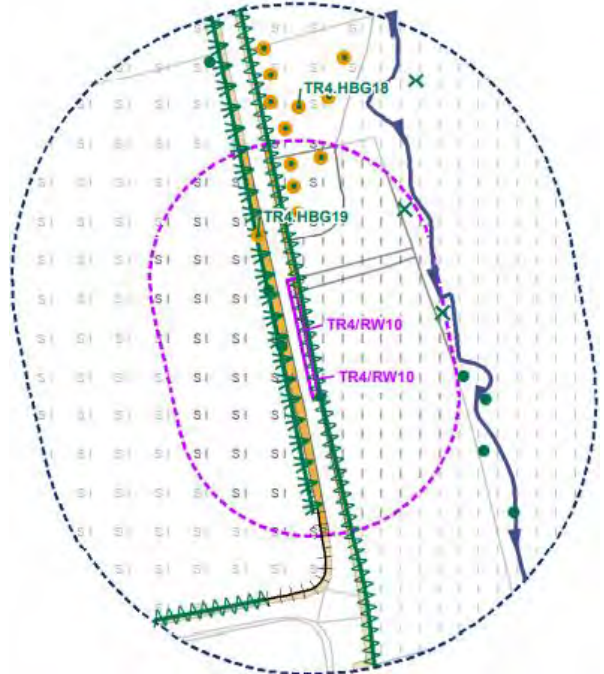

Works ID	TR4/RW15	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	5km south east of the site	Bradford Fell, Easington Fell & Harrop Fell	1.8km north of the site	Curlew	Approx 100m south
Coplow Quarry SSSI	4.8km south east of the site	Waddington Fell and Browsholme Moor	1.3km north of the site	Speckled Wood	Approx 500m south east
Cross Hill Quarry LNR	4.4km south east of the site	Feazer Wood	800km south east of the site	Comma	Approx 500m south east
Salthill Quarry LNR	5km south east of the site	Drakehouse Wood	1.5km east of the site	Green Hairstreak	Approx 700m west
		Hospital Wood	1.5km south of the site	Small Heath	Approx 700m west
		Bradup Wood North	1.8km west of the site	Roe Deer	Within 1000m tetrad containing the site
				Brown Hare	Approx 50m south
				European Hedgehog	Approx 50m south
				Stoat	Approx 50m south
				Snowdrop	Within 1000m tetrad containing the site
				Cowberry	Approx 50m east
				Southern Marsh orchid	Approx 600m south east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Dense/continuous scrub Scattered scrub Dry stone wall	Semi-improved neutral grassland Scattered scrub Dense/continuous scrub Marshy grassland Running water Poor semi-improved grassland Scattered coniferous trees Dry stone wall			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The scrub habitats within the site and adjacent habitats have nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

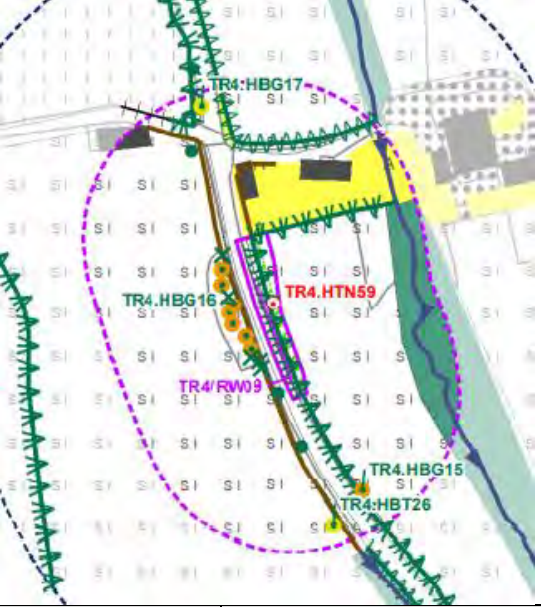


Works ID	TR4/RW14	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	4.7km south east of the site	Bradup Wood North	1.9km south west of the site	Curlew	Adjacent to site
Coplow Quarry SSSI	4.5km south east of the site	Waddington Fell and Browsholme Moor	1.6km north of the site	Speckled Wood	Approx 500m south east
Cross Hill Quarry LNR	4.1km south east of the site	Feazer Wood	500m south east of the site	Comma	Approx 500m south east
Salthill Quarry LNR	4.8km south east of the site	Drakehouse Wood	1.5km east of the site	Green Hairstreak	Approx 700m west
		Hospital Wood	1.2km south of the site	Small Heath	Approx 700m west
				Roe Deer	Within 1000m tetrad containing the site
				Brown Hare	Approx 10m south
				European Hedgehog	Approx 10m south
				Stoat	Approx 10m south
				Snowdrop	Approx 50m west
				Cowberry	Within 1000m tetrad containing the site
				Southern Marsh orchid	Approx 300m south east
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Scattered broadleaved trees Scattered scrub Dry stone wall	Poor semi-improved grassland Scattered broadleaved trees Dense/continuous scrub Semi-improved neutral grassland Marshy grassland Dry stone wall			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The tree and scrub habitats within the site and adjacent habitats have nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the SI grassland road verge and associated trees/scrub. No significant impacts anticipated. It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		

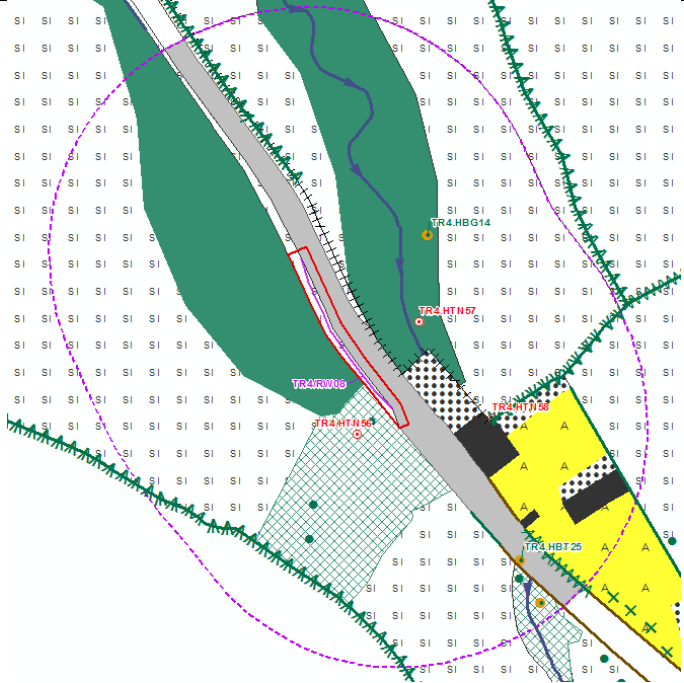


Works ID	TR3/RW13	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	4.3km south east of the site	Bradup Wood North	1.9km west of the site	Hospital Wood	800m south of the site
Coplow Quarry SSSI	4.1km south east of the site	Waddington Fell and Browsholme Moor	1.9km north of the site	Ancient Woodland Habitat	Within 500m from site
Cross Hill Quarry LNR	3.7km south east of the site	Feazer Wood	100m east of the site		
Salthill Quarry LNR	4.4km south east of the site	Drakehouse Wood	1.3km east of the site		
Historic Species Records					
Curlew	Approx 350m north	Roe Deer	Within 1000m tetrad containing the site	Cowberry	Within 1000m tetrad containing the site
Speckled Wood	Approx 500m east	Brown Hare	Within 1000m tetrad containing the site	Southern Marsh orchid	Approx 300m east
Comma	Approx 500m east	European Hedgehog	Within 1000m tetrad containing the site	Welsh Poppy	Approx 800m south
Green Hairstreak	Approx 1km west	Stoat	Within 1000m tetrad containing the site		
Small Heath	Approx 1km west	Snowdrop	Approx 50m west		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Native species-rich intact hedge	Semi-improved neutral grassland Native species-rich intact hedge Poor semi-improved grassland Scattered scrub Scattered broadleaved trees Native species-rich intact hedge and trees Wall				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> A number of trees with bat roosting potential are present in the locality are located sufficient distance from the works to assume no impacts to these trees will occur (TR4.HBG12). The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Loss of a small area of adjacent semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. Works should avoid the nesting bird season or be subject to nesting bird checks. 		

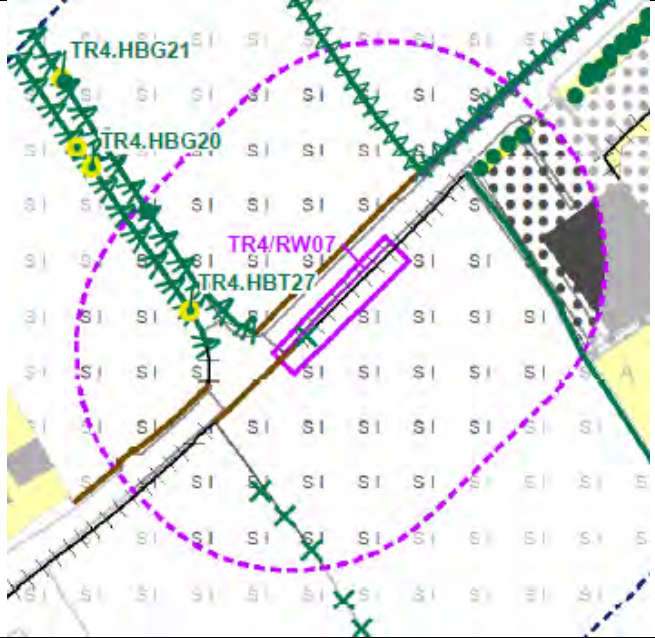

Works ID	TR3/RW12	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	4.1km south east of the site	Bradup Wood North	2km west of the site	Ancient Woodland Habitat	Within 500m from site
Coplow Quarry SSSI	3.9km south east of the site	Feazer Wood	150m north east of the site		
Cross Hill Quarry LNR	3.5km south east of the site	Drakehouse Wood	1.2km east of the site		
Salthill Quarry LNR	4.1km south east of the site	Hospital Wood	500m south east of the site		
Historic Species Records					
Curlew	Approx 700m north	Speckled Wood	Approx 700m north east	European Hedgehog	Within 1000m tetrad containing the site
Barn Owl	Approx 1km south	Roe Deer	Within 1000m tetrad containing the site	Stoat	Within 1000m tetrad containing the site
Comma	Approx 700m north east	Brown Hare	Within 1000m tetrad containing the site	Snowdrop	Approx 450m north west
Welsh Poppy	Approx 500m south	Southern Marsh orchid	Approx 600m east	Cowberry	Approx 400m north
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Native species-rich intact hedge Hardstanding Scattered broadleaved trees	Poor semi-improved grassland Native species-rich intact hedge Hardstanding Scattered broad-leaved trees Semi-improved neutral grassland Running water Wall Semi-natural broad-leaved woodland				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> One tree within the site has low potential to support roosting bats (TR4.HBT20). Three other trees in the local area have low potential to support roosting bats (TR4.HBT19, TR4.HBG13, and TR4.HBT21), but are located sufficient distance from the works to assume no impacts to these trees will occur. The adjacent woodland at TR4.HTN49 provides suitable habitat for nesting birds, roosting/foraging/commuting bats, small mammals, large mammals and amphibians. The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Loss of a small area of adjacent semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. Works should avoid the nesting bird season or be subject to nesting bird checks. The location of the current proposals will result in the loss of a tree with low potential to support roosting bats (TR4.HBT20). Consideration should be given to moving the works further south to avoid loss of this tree. If removal of this tree is still required to facilitate works, or works are required to other trees with roosting potential, further surveys will be required in relation to roosting bats before works can commence. 		

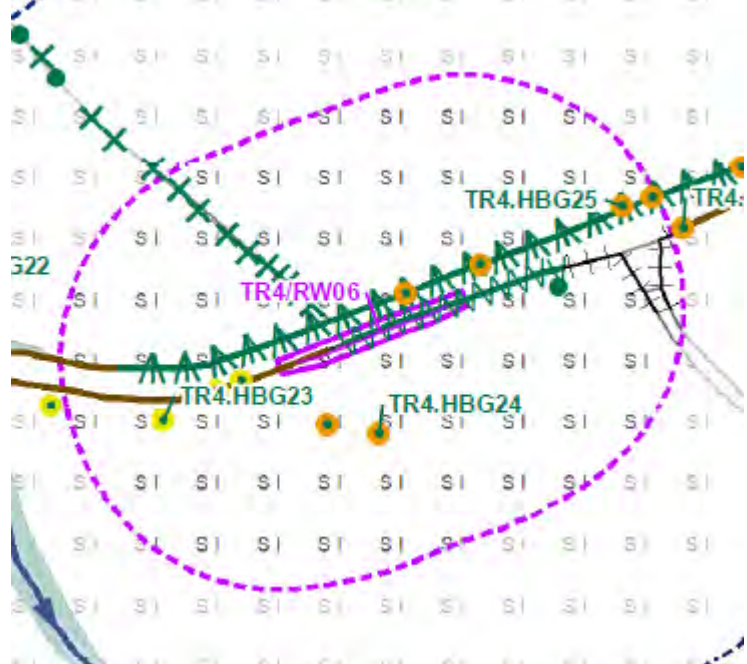


Works ID	TR3/RW11	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	3.9km south east of the site	Bradup Wood North	2km west of the site	Ancient Woodland Habitat	Within 500m from site
Coplow Quarry SSSI	3.5km south east of the site	Feazer Wood	150m north east of the site		
Clitheroe Knoll Reefs SSSI	4.9km south east of the site	Drakehouse Wood	1.2km east of the site		
Cross Hill Quarry LNR	3km south east of the site	Hospital Wood	500m south east of the site		
Salthill Quarry LNR	3.9km south east of the site	Waddington Brick Works Old Working	1.9km south east of site		
Historic Species Records					
Curlew	Approx 1km north	Speckled Wood	Approx 700m north east	Stoat	Within 1km tetrad containing site
Barn Owl	Approx 700m south	Roe Deer	Within 1km tetrad containing site	Snowdrop	Within 1km tetrad containing site
Comma	Approx 700m north east	Brown Hare	Within 1km tetrad containing site	Southern Marsh orchid	Approx 800m north east
Welsh Poppy	Within 1km tetrad containing site	European Hedgehog	Within 1km tetrad containing site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Poor semi-improved grassland Species-rich intact hedgerow Species-rich intact hedgerow Species-rich hedge and trees Running water	Poor semi-improved grassland Species-rich intact hedgerow Hardstanding Species-rich hedge and trees Running water Scattered broadleaved trees Amenity grassland Building Semi-improved neutral grassland Bare ground Fence			<p>TR4.HTN54</p> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Two trees adjacent to the site have low potential to support roosting bats (TR4.HBT22, TR4.BT34). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal. The hedgerow has nesting bird potential. The SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately c. 170 m of species-rich intact hedgerow and associated verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Loss of a small area of adjacent semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. Works should avoid the nesting bird season or be subject to nesting bird checks. Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. 		




Works ID	TR3/RW10	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km				Non Statutory Designated Wildlife Sites within 2km	
Salthill and Bellman Park Quarry SSSI	3.5km south east of the site	Hodder River Section	5km south west of the site	Feazer Wood	450m north east of the site
Coplow Quarry SSSI	3.1km south east of the site	Cross Hill Quarry LNR	2.6km south east of the site	Drakehouse Wood	1.7km east of the site
Clitheroe Knoll Reefs SSSI	4.5km south east of the site	Salthill Quarry LNR	3.5km south east of the site	Hospital Wood	500m east of the site
				Waddington Brick Works Old Working	1.7km south east of site
				Ancient Woodland Habitat	Within 500m from site
Historic Species Records					
Barn Owl	Approx 700m south	European Hedgehog	Within 1000m tetrad containing the site	Tutsan	Approx 800m south
Comma	Approx 700m north east	Stoat	Within 1000m tetrad containing the site	Petty Spurge	Approx 800m south
Speckled Wood	Approx 700m north east	Snowdrop	Within 1000m tetrad containing the site	Columbine	Approx 800m south
Roe Deer	Within 1000m tetrad containing the site	Southern Marsh orchid	Approx 800m north east		
Brown Hare	Within 1000m tetrad containing the site	Welsh Poppy	Within 1000m tetrad containing the site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Species-rich intact hedgerow	Improved grassland Species-rich intact hedgerow Semi-improved neutral grassland Scattered broadleaved trees Species-rich hedge and trees Poor semi-improved grassland			TR4.HBG19 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Group of trees approx. 20m from the site have moderate potential to support roosting bats (TR4.HBG19). This tree will not be removed to facilitate works but there is a risk overhanging branches may require removal. The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge, therefore it is assumed the adjacent hedgerow will not be impacted by the proposals. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields). Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. 		

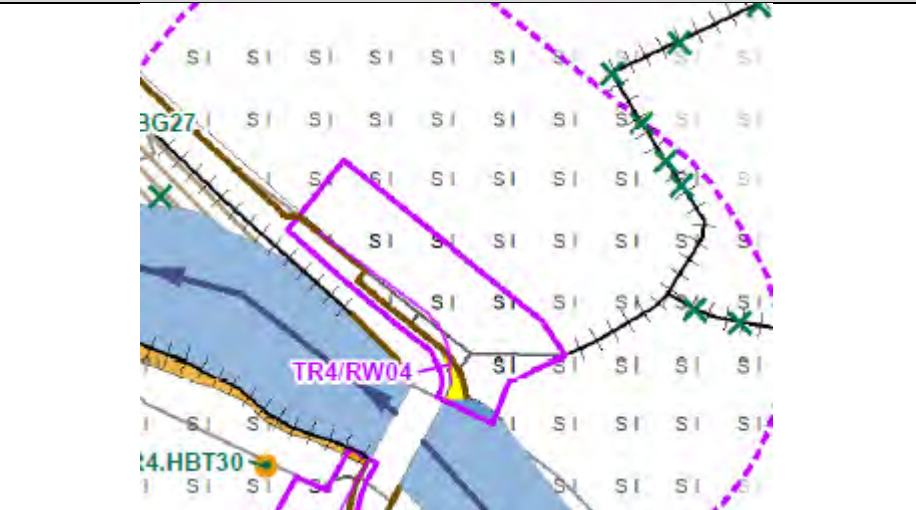
Works ID	TR4/RW09	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km			Non Statutory Designated Wildlife Sites within 2km		
Salthill and Bellman Park Quarry SSSI	3.1km south east of the site	Salthill Quarry LNR	3.1km south east of the site	Feazer Wood	950m north east of the site
Coplow Quarry SSSI	2.5km south east of the site			Drakehouse Wood	1.7km north east of the site
Clitheroe Knoll Reefs SSSI	3.9km south east of the site			Hospital Wood	200m north east of the site
Hodder River Section	4.6km south west of the site			Waddington Brick Works Old Working	1.3km south east of site
Cross Hill Quarry LNR	2.1km south east of the site			Ancient Woodland Habitat	Within 500m of the site
Historic Species Records					
Roe Deer	Within 1000m tetrad containing the site	Snowdrop	Within 1000m tetrad containing the site	Bullhead	Approx 700m south east
Brown Hare	Within 1000m tetrad containing the site	Welsh Poppy	Within 1000m tetrad containing the site	Common Frog	Approx 800m south
European Hedgehog	Within 1000m tetrad containing the site	Tutsan	Approx 200m south	Brown/Sea Trout	Approx 700m south east
Stoat	Within 1000m tetrad containing the site	Petty Spurge	Approx 200m south		
Common Pipistrelle	Approx 700m south east	Columbine	Approx 200m south		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Species-rich intact hedge and trees Plantation coniferous woodland Scattered broadleaved trees	Native species-rich intact hedge and trees Poor semi-improved grassland Scattered broadleaved trees Dense/continuous scrub Semi-natural broadleaved woodland Amenity grassland Buildings Dry stone wall			<p>TR4.HBG16</p> 	<p>TR4.HBN59</p> 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Several trees adjacent to the site have moderate potential to support roosting bats (TR4.HBG16, TR4.HBG15, TR4.HBG14). Two other trees adjacent to the site have moderate potential to support roosting bats (TR4.HBG17, TR4.HBT26). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal. The woodland at TR4.HBN59 has potential for nesting birds and foraging and commuting habitat for bats. The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 60 m of species-rich intact hedgerow and trees as well as associated SI verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Works should avoid the nesting bird season or be subject to nesting bird checks. Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. 		

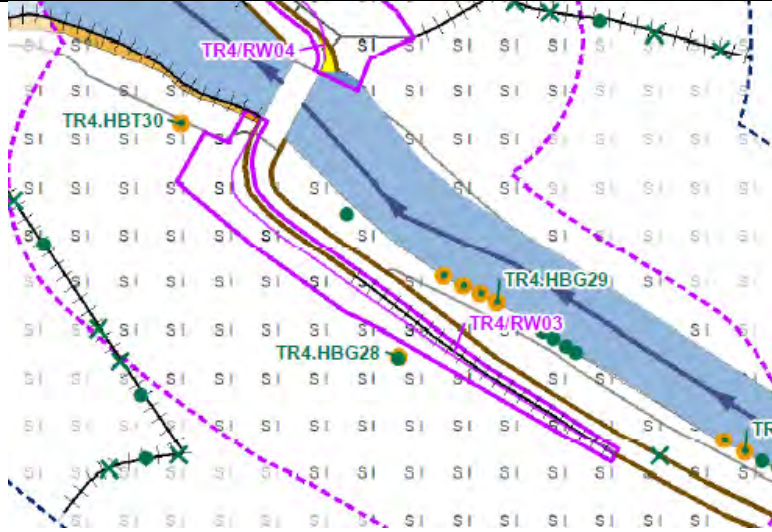


Works ID	TR4/RW08	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km				Non Statutory Designated Wildlife Sites within 2km	
Salthill and Bellman Park Quarry SSSI	3.1km south east of the site	Salthill Quarry LNR	3.1km south east of the site	Feazer Wood	950m north east of the site
Coplow Quarry SSSI	2.5km south east of the site			Drakehouse Wood	1.7km north east of the site
Clitheroe Knoll Reefs SSSI	3.9km south east of the site			Hospital Wood	200m north east of the site
Hodder River Section	4.6km south west of the site			Waddington Brick Works Old Working	1.3km south east of site
Cross Hill Quarry LNR	2.1km south east of the site			Ancient Woodland Habitat	Within 500m of the site
Historic Species Records					
Roe Deer	Within 1000m tetrad containing the site	Snowdrop	Within 1000m tetrad containing the site	Bullhead	Approx 700m south east
Brown Hare	Within 1000m tetrad containing the site	Welsh Poppy	Within 1000m tetrad containing the site	Common Frog	Approx 800m south
European Hedgehog	Within 1000m tetrad containing the site	Tutsan	Approx 200m south	Brown/Sea Trout	Approx 700m south east
Stoat	Within 1000m tetrad containing the site	Petty Spurge	Approx 200m south		
Common Pipistrelle	Approx 700m south east	Columbine	Approx 200m south		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan	Site Photos		
Poor semi-improved grassland Semi-natural broad-leaved woodland Dense/continuous scrub	Poor semi-improved grassland Scattered broadleaved trees Dense/continuous scrub Semi-natural broadleaved woodland Running water Amenity grassland Buildings Dry stone wall		 		
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Brash pile adjacent to scrub and scattered trees. This habitat is a suitable refuge for amphibians as well as having potential for nesting birds and small mammals (including hedgehog) (TR4.HTN56). The adjacent woodland has potential for large mammals (including badger setts), nesting birds, roosting, commuting and foraging bats, small mammals and terrestrial habitats for amphibians (TR4.HTN57). Variegated yellow archangel within the understory of the woodland. This is listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (TR4.HTN58). The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge, therefore it is assumed the adjacent woodland and scrub will not be impacted by the proposals. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent habitats). Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. 		

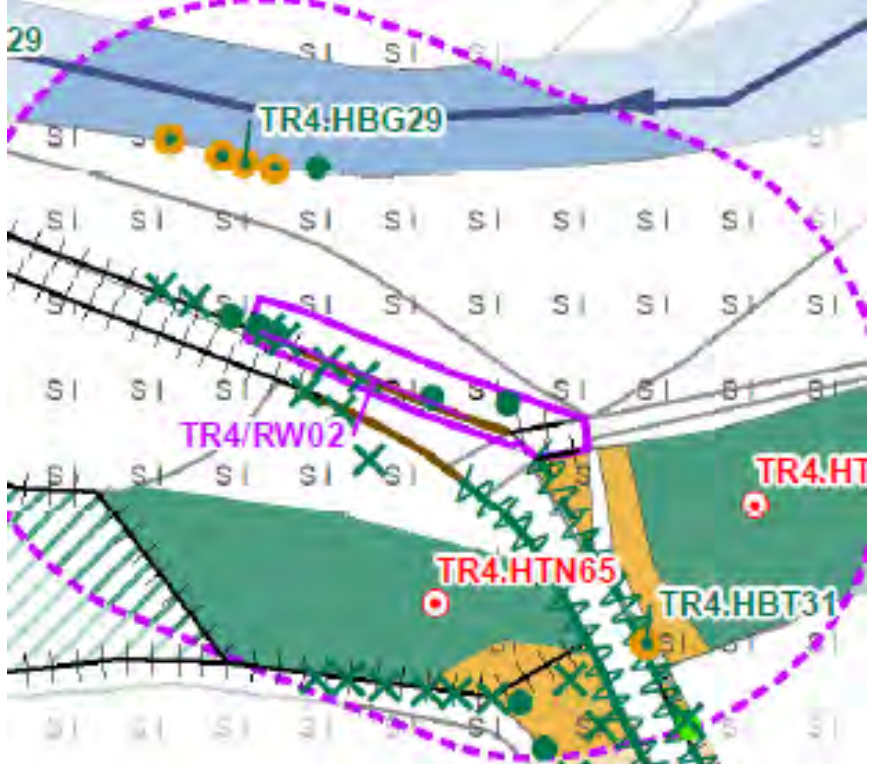


Works ID	TR4/RW07	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW03 Biological Heritage Site	2km north west of site	74SE02 Biological Heritage Site	1.4km south east of site
Coplow Quarry SSSI	1.1km south of site	74SW02 Biological Heritage Site	1.9km west of site	74SW06 Biological Heritage Site	1.0km south of site
Clitheroe Knoll Reefs SSSI	2.5km south east of site	74SW04 Biological Heritage Site	1.0km south west of site	74NW05 Biological Heritage Site	600m west of site
Cross Hill Quarry LNR	1.1km south of site	74NE01 Biological Heritage Site	700m north east of site	Ancient woodland	700m north west of site
Salthill Quarry LNR	2.1km south of site	74SE12 Biological Heritage Site	1.7km east of site		
Little Mearley Clough SSSI	4.4km south east of site	74SE03 Biological Heritage Site	1.7km south east of site		
Historic Species Records					
Common toad	Within 1km tetrad containing the site	Japanese knotweed	Within 1km tetrad containing the site	Green Figwort	Within 1km tetrad containing the site
Black-headed Gull	Within 1km tetrad containing the site	Snowdrop	Within 1km tetrad containing the site	Montbretia	Within 1km tetrad containing the site
Curlew	Within 1km tetrad containing the site	Yellow archangel	Within 1km tetrad containing the site	Petty Spurge	Within 1km tetrad containing the site
Soft Shield-fern	Within 1km tetrad containing the site	Pipistrelle species	Within 1km tetrad containing the site	Rhododendron ponticum	Within 1km tetrad containing the site
Pipistrelle	Within 1km tetrad containing the site	Soprano pipistrelle	Within 1km tetrad containing the site	Sand Leek	Within 1km tetrad containing the site
West European hedgehog	500m south west of site	Brown hare	Within 1km tetrad containing the site	Snowdrop	Within 1km tetrad containing the site
Pipistrelle species	500m south west of site	Brown hare	Within 2km tetrad containing the site	Tutsan	Within 1km tetrad containing the site
Bluebell	Within 1km tetrad containing the site	Cotoneaster	Within 1km tetrad containing the site	Snowdrop	Within 2km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Scattered scrub Dry stone wall	Poor semi-improved grassland Scattered scrub Native species-rich intact hedgerow Native species-rich intact hedge and trees Scattered broadleaved trees			TR4.HBT27 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> One tree in the local area has low potential to support roosting bats (TR4.HBT27), but is located sufficient distance from the works to assume no impacts to these trees will occur. The scrub and adjacent SI grassland have nesting bird potential. The limited mix of habitats on and adjacent to the site could support a range of limited foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge with a small loss of scrub and SI field. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields). 		




Works ID	TR4/RW06	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW05 Biological Heritage Site	1.2km north west of site	74SE02 Biological Heritage Site	1.7km south of site
Coplow Quarry SSSI	1.6km south west of site	74NE01 Biological Heritage Site	100m north of site	74SW06 Biological Heritage Site	1.6km south west of site
Clitheroe Knoll Reefs SSSI	1.9km south east of site	74NE14 Biological Heritage Site	2.0km north of site	74SW04 Biological Heritage Site	1.7km south west of site
Cross Hill Quarry LNR	1.6km south west of site	74SE12 Biological Heritage Site	900m south east of site	Ancient woodland	800m west of site
Salthill Quarry LNR	2.1km south of site	74SE10 Biological Heritage Site	1.8km south east of site	Deciduous woodland	Adjacent to site
Little Mearley Clough SSSI	4.3km south east of site	74SE03 Biological Heritage Site	1.5km south of site		
Historic Species Records					
Greylag Goose	100m west of site	Brown/Sea Trout	Within 100m tetrad containing the site	Indian Balsam	Within 1km tetrad containing the site
Atlantic Salmon	100m west of site	Bullhead	Within 100m tetrad containing the site	West European hedgehog	Within 1km tetrad containing the site
Brown/Sea Trout	100m west of site	Indian Balsam	100m west of site	Brown hare	Within 1km tetrad containing the site
Ringlet	100m west of site	Mountain Everlasting	Within 1km tetrad containing the site	Snowdrop	Within 2km tetrad containing the site
Curlew	Within 1km tetrad containing the site	Bluebell	Within 1km tetrad containing the site	Brown hare	Within 2km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Native species-rich intact hedgerow Poor semi-improved grassland Dry stone wall	Native species-rich intact hedgerow Poor semi-improved grassland Scattered broad-leaved trees Scattered scrub Native species-rich intact hedge and trees Dry stone wall			<p>TR4.HBG23</p> 	<p>TR4.HBG25</p> 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Multiple trees adjacent to the site have moderate potential to support roosting bats (TR4.HBG25, TR4.HBG24). Multiple trees adjacent to the site have low potential to support roosting bats (TR4.HBG23). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal. The hedgerow, wall and adjacent SI grassland have nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 30 m of species-rich intact hedgerow and associated verge habitat. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. Loss of a small area of adjacent semi-improved grassland is unlikely to have a significant adverse effect but there could be disturbance to ground nesting species using the wider field. Works should avoid the nesting bird season or be subject to nesting bird checks. 		

Works ID	TR4/RW05	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	2.2km south of site	74NW05 Biological Heritage Site	1.8km west of site	Wall	Within 1km tetrad containing the site
Coplow Quarry SSSI	2.1km south west of site	74NE01 Biological Heritage Site	600m west of site	Indian balsam	Within 1km tetrad containing the site
Clitheroe Knoll Reefs SSSI	1.5km south east of site	74NE14 Biological Heritage Site	1.8km north of site	Snowdrop	Within 1km tetrad containing the site
Cross Hill Quarry LNR	2.1km south west of site	74SE12 Biological Heritage Site	500m south east of site	Snowdrop	Within 1km tetrad containing the site
Salthill Quarry LNR	2.2km south of site	74SE10 Biological Heritage Site	1.4km south east of site	Snowdrop	Within 2km tetrad containing the site
Little Mearley Clough SSSI	4.1km south east of site	74NE03 Biological Heritage Site	1.5km south of site	West European Hedgehog	Within 1km tetrad containing the site
		74SE06 Biological Heritage Site	1.8km south east of site	Pipistrelle	Within 1km tetrad containing the site
		Ancient woodland	1.1km north west of site	Brown hare	Within 1km tetrad containing the site
				West European Hedgehog	Within 1km tetrad containing the site
				Brown hare	Within 1km tetrad containing the site
				Brown hare	Within 2km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Dry stone wall	Amenity grassland Poor semi-improved grassland Scattered scrub Buildings Bare ground Dry stone wall			<p>TR4.HTN61</p> 	<p>TR4.HBG26</p> 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The SI grassland has nesting bird potential. The limited mix of habitats on and adjacent to the site could support a range of limited foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the road verge with a small loss of connected SI field. Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields). 		

Works ID	TR4/RW04	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW05 Biological Heritage Site	1.9km west of site	Swallow	Within 1km tetrad containing the site
Coplow Quarry SSSI	1.9km south west of site	74NE01 Biological Heritage Site	700m west of site	Bluebell	Within 1km tetrad containing the site
Clitheroe Knoll Reefs SSSI	1.3km south east of site	74NE03 Biological Heritage Site	1.2km east of site	Lesser Meadow-rue	Within 1km tetrad containing the site
Cross Hill Quarry LNR	1.9km south west of site	74SE10 Biological Heritage Site	1.2 south east of site	Tutsan	Within 1km tetrad containing the site
Salthill Quarry LNR	2.1km south of site	74SE12 Biological Heritage Site	300m south east of site	Yellow Archangel	Within 1km tetrad containing the site
Little Mearley Clough SSSI	3.9km south east of site	74SE06 Biological Heritage Site	1.8km south west of site	Indian Balsam	Within 1km tetrad containing the site
		74SE04 Biological Heritage Site	1.8km south of site	Snowdrop	Within 1km tetrad containing the site
		74SE03 Biological Heritage Site	1.5km south of site	Pipistrelle	Within 1km tetrad containing the site
		Ancient woodland	1.1km north west of site	West European Hedgehog	Within 1km tetrad containing the site
		River Ribble from London Road Bridge Preston, in West, to County Boundary, in East BHS	Adjacent to the site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Amenity grassland Poor semi-improved grassland Dry stone wall	Amenity grassland Poor semi-improved grassland Scattered scrub Running water Dry stone wall			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The dry stone wall, adjacent fields and River Ribble are likely to support nesting birds. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates, and amphibians). The River Ribble lies immediately to the south of the works. The watercourse could be suitable to support commuting and foraging otter and water vole, as well as water vole burrows, however no impacts to bankside habitat are anticipated. This section of watercourse does not provide enough cover to support otter holts. There will be no direct impacts associated with these species. 			<ul style="list-style-type: none"> Habitats will not be reinstated on completion of the works Works appear to be limited to an area of SI grassland habitats and dry stone wall. Works should avoid the nesting bird season or be subject to nesting bird checks (including wall, adjacent fields and river). River Ribble from London Road Bridge Preston, in West, to County Boundary, in East BHS encompasses the River Ribble and lies adjacent to the site (south) 		

Works ID	TR4/RW03	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW05 Biological Heritage Site	1.9km west of site	Swallow	Within 1km tetrad containing the site
Coplow Quarry SSSI	1.9km south west of site	74NE01 Biological Heritage Site	700m west of site	Bluebell	Within 1km tetrad containing the site
Clitheroe Knoll Reefs SSSI	1.3km south east of site	74NE03 Biological Heritage Site	1.2km east of site	Lesser Meadow-rue	Within 1km tetrad containing the site
Cross Hill Quarry LNR	1.9km south west of site	74SE10 Biological Heritage Site	1.2 south east of site	Tutsan	Within 1km tetrad containing the site
Salthill Quarry LNR	2.1km south of site	74SE12 Biological Heritage Site	300m south east of site	Yellow Archangel	Within 1km tetrad containing the site
Little Mearley Clough SSSI	3.9km south east of site	74SE06 Biological Heritage Site	1.8km south west of site	Indian Balsam	Within 1km tetrad containing the site
		74SE04 Biological Heritage Site	1.8km south of site	Snowdrop	Within 1km tetrad containing the site
		74SE03 Biological Heritage Site	1.5km south of site	Pipistrelle	Within 1km tetrad containing the site
		Ancient woodland	1.1km north west of site	West European Hedgehog	Within 1km tetrad containing the site
		River Ribble from London Road Bridge Preston, in West, to County Boundary, in East BHS	Adjacent to the site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland	Semi-improved neutral grassland Poor semi-improved grassland Scattered scrub Scattered broadleaved trees Running water			<p>TR4.HBT30</p>  <p>TR4.HBG28</p> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> Two trees adjacent to the site have moderate potential to support roosting bats (TR4.HBG28, TR4.HBT30). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal. Four trees in proximity to the site adjacent to the river have moderate potential to support roosting bats (TR4.HBG29). These trees appear to be located a sufficient distance from the works to assume no impacts to these trees will occur. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates, and amphibians). The River Ribble lies immediately to the north of the works. The watercourse could be suitable to support commuting and foraging otter and water vole, as well as water vole burrows, however no impacts to bankside habitat are anticipated. This section of watercourse does not provide enough cover to support otter holts. There will be no direct impacts associated with these species. 			<ul style="list-style-type: none"> Habitats will not be reinstated on completion of the works Works appear to be limited to an area of SI grassland habitat. Works should avoid the nesting bird season or be subject to nesting bird checks (including wall, adjacent fields and river). Works should avoid any impacts to trees with bat potential in proximity of the site. If any branch removal is required to facilitate works, further surveys will be required in relation to roosting bats before works can commence. River Ribble from London Road Bridge Preston, in West, to County Boundary, in East BHS encompasses the River Ribble and lies adjacent to the site (north) 		

Works ID	TR4/RW02	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	1.9km south of site	74NE01 Biological Heritage Site	1.0km north west of site	Swallow	Within 1km tetrad containing the site
Coplow Quarry SSSI	1.9km south west of site	74NE03 Biological Heritage Site	1.8km north east of site	Bluebell	Within 1km tetrad containing the site
Clitheroe Knoll Reefs SSSI	1.0km east of site	74SE10 Biological Heritage Site	1.0km south east of site	Lesser Meadow-rue	Within 1km tetrad containing the site
Cross Hill Quarry LNR	1.9km south west of site	74SE12 Biological Heritage Site	Adjacent to site	Tutsan	Within 1km tetrad containing the site
Salthill Quarry LNR	1.9km south of site	74SE06 Biological Heritage Site	1.3km south east of site	Yellow Archangel	Within 1km tetrad containing the site
Little Mearley Clough SSSI	3.6km south east of site	74SE04 Biological Heritage Site	1.7km south of site	Indian Balsam	Within 1km tetrad containing the site
		74SE03 Biological Heritage Site	1.2km south of site	Snowdrop	Within 1km tetrad containing the site
		74SE02 Biological Heritage Site	1.7km south west of site	Pipistrelle	Within 1km tetrad containing the site
		74SE09 Biological Heritage Site	2.0km south of site	West European Hedgehog	Within 1km tetrad containing the site
		74SE08 Biological Heritage Site	1.8km south east of site	Brown hare	Within 1km tetrad containing the site
		Ancient woodland	1.5km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Semi-improved neutral grassland Scattered broad leaved trees Scattered scrub Native species-rich defunct hedge Native species-rich intact hedge Dry stone wall	Semi-improved neutral grassland Scattered scrub Poor semi-improved grassland Native species-rich defunct hedge Native species-rich intact hedge Dry stone wall			 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The trees, hedgerow, scrub and adjacent SI grassland have nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Current proposals will require removal of approximately 20 m of species-rich defunct hedgerow and associated verge/field habitat. Scattered trees and scrub will also be removed. Hedgerow could be classed as important under the Hedgerow Regulations 1997. Mitigation for hedgerow loss will be required which needs agreeing with the LPA, either as part of the reinstatement proposals or improvement of adjacent areas of hedgerow. In its current location there will be a small loss of habitats associated with Bean Hill Wood and Grassland BHS. Consideration should be given to moving works outside this designation (further north). Any impacts to locally designated sites will require consultation with the LPA. Potential loss of priority habitat – further survey in the appropriate season is recommended. Mitigation for priority habitat loss will be required which needs agreeing with the LPA. Works should avoid the nesting bird season or be subject to nesting bird checks. 		

Works ID	TR4/RW01	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km				Non Statutory Designated Wildlife Sites within 2km	
Salthill and Bellman Park Quarry SSSI	3.1km south east of the site	Hodder River Section	4.6km south west of the site	Feazer Wood	950m north east of the site
Coplow Quarry SSSI	2.5km south east of the site	Cross Hill Quarry LNR	2.1km south east of the site	Drakehouse Wood	1.7km north east of the site
Clitheroe Knoll Reefs SSSI	3.9km south east of the site	Salthill Quarry LNR	3.1km south east of the site	Hospital Wood	200m north east of the site
				Waddington Brick Works Old Working	1.3km south east of site
				Ancient Woodland Habitat	Within 500m of the site
Historic Species Records					
Roe Deer	Within 1000m tetrad containing the site	Common Pipistrelle	Approx 700m south east	Petty Spurge	Approx 200m south
Brown Hare	Within 1000m tetrad containing the site	Snowdrop	Within 1000m tetrad containing the site	Columbine	Approx 200m south
European Hedgehog	Within 1000m tetrad containing the site	Welsh Poppy	Within 1000m tetrad containing the site	Bullhead	Approx 700m south east
Stoat	Within 1000m tetrad containing the site	Tutsan	Approx 200m south	Common Frog	Approx 800m south
Brown/Sea Trout	Approx 700m south east				
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds present		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Amenity grassland Semi-improved neutral grassland	Amenity grassland Semi-improved neutral grassland Poor semi-improved grassland Scattered scrub Semi-natural broadleaved woodland Species-rich intact hedgerow Bare ground Buildings			 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> The adjacent woodland has nesting bird potential. The mix of habitats on and adjacent to the site could support a range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, invertebrates). Amphibians are unlikely to be present due to lack of potential breeding ponds (> 500m). 			<ul style="list-style-type: none"> Habitats will be not reinstated on completion of the works. Works appear to be limited to the amenity and SI grassland road verge. No significant impacts anticipated. Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields). 		



**Haweswater Aqueduct Resilience Programme -
Proposed Marl Hill Section
Supplementary Environmental Information**

Appendix B7: Annex 2

Off-Site Highways Works – Target Note Report

January 2022



Proposed Marl Hill Section

Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

Project No: B27070CT
Document Title: Proposed Marl Hill Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 2: Off-Site Highways Works – Target Note Report
Document ID: RVBC-MH_SEI-Appendix B7 Annex 2
Revision: 0
Date: January 2022
Client Name: United Utilities
Author: Bowland Ecology Limited

Bowland Ecology Limited
Unit 8, Second Floor
Holmes Mill
Clitheroe
BB7 1EB
Tel: 01200 446 777
E-mail: info@bowlandecology.co.uk

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR4 Highways Target Note Report DRAFT TR4 Highways Target Note Report V1	Date:	Draft: 10/02/2021 V1: 26/03/2021
2 Project Drawings			
Phase 1 Habitat Survey TR4 Highways Proposed Marl Hill Section		BOW167_HARP_9.5_PH1_TR4_HIGHWAYS	
3 Ecology Surveys			
Surveyors:	Fiona Shuttle BSc Catrin Scott MRes, BSc Lucy Pocock BSc Helena Davies BSc Sophie King BSc Eve Loxham MBIolSci (Hons) Alice Helyar PhD, MSc, BSc (Hons), MCIEEM		
Survey date(s):	08/12/2020, 09/12/2020, 10/12/2020, 14/12/2020, 15/12/2020, 16/12/2020, 13/01/2021, 15/01/2021, 19/01/2021, 05/03/2021, 24/03/2021 Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between July 2019 and May 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; Crosher <i>et al.</i> 2019).		
Weather Conditions:	08/12/2020 – Cloud cover (8/8), Wind Beaufort F5 SE, 8 °C, raining 09/12/2020 – Cloud cover (5/8), Wind Beaufort F3 W, 7 °C, no precipitation 10/12/2020 – Cloud cover (8/8), Wind Beaufort F4 SSE, 6 °C, no precipitation 14/12/2020 – Cloud cover (8/8), Wind Beaufort F4 SW, 8 °C, raining 15/12/2020 – Cloud cover (3/8), Wind Beaufort F4 S, 9 °C, no precipitation 16/12/2020 – Cloud cover (5/8), Wind Beaufort F5 S, 9 °C, light rain 13/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NW, 3 °C, moderate rain. 15/01/2021 – Cloud cover (1/8), Beaufort Wind F1 NW, 0 °C, no precipitation 19/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NE, 8 °C, heavy rain 05/03/2021 – Cloud cover (6/8), Beaufort Wind F2 N, 5 °C, dry. 24/03/2021 – Cloud cover (4/8), Beaufort Wind F1-3 N, 9 °C, dry.		

	For weather conditions relating to the Extended Phase 1 Habitat Surveys undertaken in 2019-2020, refer to "TR4 Ecology Survey Data Report: Target Note Report V2" (Bowland Ecology, 2020).
Limitations to the survey:	<p>Access was not granted to certain sections of the survey area (no known land ID number). These are indicated on the associated plans.</p> <p>The survey was carried out from December 2020 to March 2021. 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>Hedgerows and watercourses at the edges of the survey were viewed from a single elevation due to access restrictions.</p>

4 Target notes




TR4.TN15	
----------	---




Approximately five scrapes within semi-improved neutral grassland, which have been purposefully excavated for lapwing (*Vanellus vanellus*) breeding. The scrapes are shallow (approx. 20 to 40cm) and periodically dry throughout the summer. Water enters the scrapes from the adjacent access road, filling the eastern pool first, then soaking westwards. There is some flow between the scrapes and an oily film on the water surface. The land occupier confirms common toad (*Bufo bufo*) and common frog (*Rana temporaria*) are frequently observed along the roadside. Plant species present include brooklime (*Veronica beccabunga*), floating sweet grass (*Glyceria fluitans*), soft rush (*Juncus effusus*), water mint (*Mentha aquatica*), lesser spearwort (*Ranunculus flammula*), water starwort species (*Callitriche* sp.), bulbous rush (*Juncus bulbosus*), jointed rush (*Juncus articulatus*) and horsetail species (*Equisetum* sp.).




Habitat Condition (provisional): Good (Score 3)




TR4.TN16	
----------	--

A traditional hay meadow which has been restored. The meadow is cut once per year, after 15th July, with no fertiliser added and it is lightly sheep grazed. Species include yellow rattle (*Rhinanthus minor*), common mouse ear (*Cerastium fontanum*), creeping thistle (*Cirsium arvense*), bird's-foot trefoil (*Lotus corniculatus*), meadow buttercup (*Ranunculus acris*), common sorrel (*Rumex acetosa*), eyebright species (*Euphrasia* sp.), ribwort plantain (*Plantago lanceolata*), sweet vernal grass (*Anthoxanthum odoratum*), meadow foxtail (*Alopecurus pratensis*), Yorkshire fog (*Holcus lanatus*), crested dog's-tail (*Cynosurus cristatus*), common yellow sedge (*Carex demissa*), meadow vetchling (*Lathyrus pratensis*), common bent (*Agrostis capillaris*), Timothy (*Phleum pratense*), creeping bent (*Agrostis stolonifera*), meadow grass species (*Poa* sp.), meadowsweet (*Filipendula ulmaris*), horsetail species, heath bedstraw (*Galium saxatile*), lesser stitchwort (*Stellaria graminea*), marsh thistle (*Cirsium palustre*), lesser celandine (*Ranunculus ficaria*), autumn hawkbit (*Scorzoneroide*

<p><i>autumnalis</i>) and sneezewort (<i>Achillea ptarmica</i>). Potential for ground nesting birds, and small mammals at the edges which are left uncut.</p> <p>Habitat Condition (provisional): Good (Score 3)</p>	
<p>TR4.TN49</p>	
<p>Large pile of spoil and manure which is adjacent to the access track and is leeching pollutants into the surrounding grassland.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	
<p>TR4.TN50</p>	
<p>Dry dwarf shrub heath surrounding ponds (TR4.P16 and TR4.P17) and is the dominant habitat in the area. The area is unmanaged (the heather is not burnt or maintained), and on relatively flat ground surrounding the ponds, although it slopes upwards to the west, and downwards to the east. Dominant species is ling (<i>Calluna vulgaris</i>), with abundant bilberry (<i>Vaccinium myrtillus</i>), and a carpet of mosses (rarely <i>Sphagnum</i>s), several sedge species, mat grass (<i>Nardus stricta</i>), crowberry (<i>Empetrum nigrum</i>), willowherb species (<i>Epilobium</i> sp.), foxglove (<i>Digitalis purpurea</i>), broadleaved dock (<i>Rumex obtusifolius</i>), bracken (<i>Pteridium aquilinum</i>), some immature self-seeded rowan (<i>Sorbus aucuparia</i>) and willow (<i>Salix</i> sp.), red fescue (<i>Festuca rubra</i>), heath woodrush (<i>Luzula multiflora</i>) and wavy hair grass (<i>Deschampsia flexuosa</i>). The heather shrub is mature and all of a similar age. Potential for nesting birds, foraging bats, small mammals, amphibians, reptiles and otter (<i>Lutra lutra</i>) lay-up sites. An abundance of predated common frogs and toads were note at the water edge and hundreds of tadpoles are present within the ponds.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
<p>TR4.TN51</p>	

<p>Unmanaged habitat mosaic including semi-improved grassland, marshy grassland and scattered dry dwarf shrub heath. Dominant species include soft rush, foxglove, Yorkshire fog with additional male fern (<i>Dryopteris filix-mas</i>), hard fern (<i>Blechnum spicant</i>), red fescue, marsh thistle, ling, <i>Polytrichum</i> mosses, heath woodrush, heath bedstraw and compact rush (<i>Juncus conglomeratus</i>). Potential habitat for nesting birds, small mammals, foraging bats, amphibians, reptiles and otter lay-up sites.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR4.TN52	
<p>Unmanaged, dense and continuous bracken which extends down the slope (facing south-east). Potential for nesting birds, small mammals, amphibians, reptiles and otter lay-up sites. There are scattered willow scrub trees within the bracken along with grass species and scattered heather.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR4.TN53	
<p>Rhododendron (<i>Rhododendron ponticum</i>) (Schedule 9 Wildlife and Countryside Act 1981, as amended) shrub at the pond edge.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR4.TN59	
<p>Large rock pile at the side of an access trackway which provides suitable refugia for reptiles.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required)</p>	

TR4.TN66		
<p>Mature willow scrub with a ground layer of dry dwarf shrub heath and scattered soft rush. Potential for small mammals, nesting birds, foraging bats, amphibians and reptiles.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>		
TR4.TN69		
<p>Ephemeral / short perennial vegetated pathway with spoil bunds either side. The track appears unused but once provided access around the site. Species include common daisy (<i>Bellis perennis</i>), ling, willow scrub, wavy hair grass, ribwort plantain, brooklime, broadleaved dock, bird's-foot trefoil, marsh thistle, soft rush, sweet vernal grass, common ragwort (<i>Jacobaea vulgaris</i>), lady's mantle (<i>Alchemilla vulgaris</i>), crowberry, square stalked St. John's wort (<i>Hypericum tetrapterum</i>), creeping cinquefoil (<i>Potentilla reptans</i>), silverweed (<i>Argentina anserina</i>), soft rush and yarrow (<i>Achillea millefolium</i>). This habitat is suitable for nesting birds, small mammals, invertebrates and foraging bats.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>		
TR4.TN70		
<p>Small area of flush surrounding a slow through flow of water between TR4.P16 and TR4.P17. The habitat is dominated by soft rush with scattered <i>Sphagnum</i> mosses, hemp agrimony (<i>Eupatorium cannabinum</i>) and bulrush (<i>Typha latifolia</i>). Suitable for reptiles, amphibians and nesting birds. Further south of the flush there is a lack of <i>Sphagnum</i>s and the habitat grades into marshy grassland.</p> <p>Habitat Condition (provisional): Good (Score 3)</p>		

<p>TR4.TN71</p>	
<p>Ephemeral / short perennial vegetation surrounding lagoon. Sections of the habitat are located on steep west facing slopes, with patches of bare earth. Species include common daisy, common sedge (<i>Carex nigra</i>), marsh thistle, soft rush, willow, ling, sheep's fescue (<i>Festuca ovina</i>), common mouse ear, common ragwort, rosebay willowherb (<i>Chamerion angustifolium</i>) and bird's foot trefoil. Vegetation is short and transitions at the lagoon edge to marshy grassland. Suitable for ground nesting birds, reptiles and invertebrates.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
<p>TR4.TN72</p>	
<p>Mixed plantation woodland on an eastern facing slope at the edge of the boundary. Canopy species include rowan, larch (<i>Larix decidua</i>) and alder (<i>Alnus glutinosa</i>). The trees have been planted over dry dwarf shrub heath, dominated by ling. Suitable for nesting birds, small mammals, reptiles, foraging bats and terrestrial amphibian habitat.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
<p>TR4.TN73</p>	
<p>Herb-rich semi-improved neutral grassland verge at the entrance to the quarry with some acidic indicator species. Some areas are recently disturbed as evidenced by locally dominant patches of common nettle (<i>Urtica dioica</i>). Species include Yorkshire fog, meadow vetchling, creeping thistle, common nettle, red fescue, cuckoo flower (<i>Cardamine pratensis</i>), creeping buttercup (<i>Ranunculus repens</i>), marsh thistle, dandelion sp. (<i>Taraxacum</i> agg.), common sorrel, ribwort plantain, heath bedstraw, field woodrush (<i>Luzula campestris</i>), common mouse ear and common ragwort. Evidence of use by rabbits (<i>Oryctolagus cuniculus</i>) is present. An orchid species was also identified on the northern verge, close to the access track. Suitable habitat for nesting birds and small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	

Target notes from TR4 Highways Surveys 2020-2021

TR4.HTN1



Semi-improved neutral grassland road verge. This is the dominant habitat lining the road throughout TR4, and is approximately 0.5 m - 2 m wide. Mostly infrequently managed, with a sward height approximately 0.5 m. Located adjacent to hedgerows, dry stone walls and wire fences. Mostly species-rich, including: Yorkshire fog, fescue species (*Festuca* sp.), cock's foot grass (*Dactylis glomerata*), tufted hair grass (*Deschampsia cespitosa*), common sorrel (*Rumex acetosa*), several umbellifer species (likely wild carrot (*Daucus carota*)), cow parsley (*Anthriscus sylvestris*), wild angelica (*Angelica sylvestris*), common sow thistle (*Sonchus oleraceus*), ground ivy (*Glechoma hederacea*), common mallow (*Malva sylvestris*), lady's mantle (*Alchemilla vulgaris*), dogs mercury (*Mercurialis perennis*), cinquefoil species (*Poentilla* sp.), vetch species (*Vicia* sp.), greater plantain (*Plantago major*), ribwort plantain, herb Robert (*Geranium robertianum*), wood avens (*Geum urbanum*), lesser celandine, barren strawberry (*Waldsteinia fragarioides*), creeping buttercup, bittercress species (*Cardamine* sp.), garlic mustard (*Alliaria petiolata*), coltsfoot (*Tussilao farfara*), common ragwort, spear thistle (*Cirsium vulgare*), white clover (*Trifolium repens*), variegated yellow archangel (*Lamiastrum galeobdolon*), primrose (*Primula vulgaris*), creeping thistle, crosswort (*Cruciata laevipes*), common nettle (*Urtica dioica*), sedge species (*Carex* sp.), soft rush, meadowsweet, common mouse ear, male fern and broadbuckler fern (*Dryopteris dilatata*). Moss species include: springy turf moss (*Rhytidiadelphus squarrosus*), feather moss species (*Ptilium* sp.).

Tall ruderal vegetation is also abundant within the verge adjacent to the layby at TN1, comprising great willowherb (*Epilobium hirsutum*), broadleaved dock, common hogweed (*Heracleum sphondylium*), creeping thistle, common knapweed (*Centaurea nigra*), dog rose (*Rosa canina*) and common nettle. Towards the northern end of the survey area at TN1, the verge on both sides of the road is steep and mown to under 10 cm.

Variegated yellow archangel is listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

The verges provide suitable habitat for small mammals, nesting birds, amphibians, reptiles as well as foraging and commuting habitat for bats.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN2



A narrow strip of relic semi-natural deciduous woodland. Located between grazed species-poor semi-improved fields with WC39 cutting through the centre. The canopy comprises mature and semi mature alder, oak species (*Quercus* sp.), sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*). Species recorded in the understory include holly (*Ilex europaeus*) and hawthorn (*Crataegus monogyna*). The ground flora is limited to grazed grassland species, which has a sward height of less than 10 cm. Common nettle was also recorded in the ground flora. Signs of management comprise a large brash pile within the woodland. The canopy is fairly open, when in full leaf the woodland will have a canopy cover of approximately 40%. Occasional brash piles and leaf litter are present.

The habitat provide opportunities for nesting birds and commuting and foraging bats. Brash piles provide habitat for small mammals including hedgehog (*Erinaceus europaeus*), as well as providing terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN3



Semi-improved neutral grassland road verges on steep banks which are approximately 2 m tall on both sides of road. Recently mown and cuttings piled up on verge. Species present include those recorded in TR4.HTN1.



The verge provides suitable habitat for small mammals, nesting birds, amphibians, reptiles as well as foraging and commuting habitat for bats.


Habitat condition (provisional): Moderate (Score 2)



TR4.HTN4




Mixed woodland (~15% conifer species). The woodland is semi-natural in character with mostly semi-mature species. The age of the canopy is uniform in structure. Canopy species include ash, sycamore, horse chestnut (*Aesculus hippocastanum*), oak species, lime species (*Tilia x europaea*), larch and other conifer species. Saplings of varying maturity including coniferous and broadleaved species are present in the understory. The understory includes holly, hawthorn, conifer saplings, ash saplings and sycamore saplings. Species recorded in the ground flora include harts tongue fern (*Asplenium scolopendrium*), common polypody fern (*Polypodium vulgare*), tufted hairgrass, broadbuckler fern, creeping buttercup, common nettle, wood avens and moss species. There is abundant leaf litter, brash and deadwood, including standing and fallen deadwood, some of which is the result of management (chainsaw cuts in logs are evident). A dry

<p>stone wall surrounds the wood and there is a watercourse running through the centre (TR4.HWC3).</p> <p>The woodland provides suitable habitat for small mammals (including hedgehog), large mammals (including badger (<i>Meles meles</i>)), nesting birds, terrestrial habitat for amphibians and also foraging, commuting and roosting habitat for bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN5</p>	
<p>Snowberry (<i>Symphoricarpos albus laevigatus</i>) present within a residential ornamental hedge. The hedge is approximately 8 m in length and therefore not subject to a full hedgerow regulations assessment. It comprises predominantly beech (<i>Fagus sylvatica</i>), with ivy (<i>Hedera helix</i>) and locally dominant areas of snowberry. The snowberry has extended from the residential garden and spread along the roadside.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN6</p>	
<p>Collapsed stone wall next to the road and on a bank of semi-improved neutral grassland, adjacent and within the wall are tree stumps. The fallen wall has good moss coverage and has likely been historically present for a long time. The wall provides good potential habitat for reptiles, amphibians and small mammals, as well as invertebrates due to the presence of tree stumps.</p> <p>Habitat condition (provisional): N/A (assessment not applicable)</p>	

TR4.HTN7		
<p>Area of semi-natural broadleaved woodland located within a valley with central watercourse TR4.HWC28. The woodland is surrounded by grazed species-poor semi-improved grassland. Canopy species include alder, sycamore and ash. Understory species include hawthorn, hazel (<i>Corylus avellana</i>) and holly. The ground flora is grazed species-poor semi-improved grassland with occasional soft rush. Trees and shrubs are mature and semi mature. There are large brash piles, dead wood and farm litter present. There are no signs of management and little evidence of regeneration. The canopy is open, when at full leaf the canopy will provide approximately 40% cover.</p> <p>The woodland provides suitable habitat for small mammals (including hedgehog), nesting habitat for a range of bird species, terrestrial habitat for amphibians and also foraging and commuting habitat for bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>		
TR4.HTN8		
<p>Three areas of brash piles suitable for a range of faunal species. One large brash pile is approximately 2 m high (appears to be recent hedgerow trimmings) and is present within the eastern species-poor semi-improved grassland field slightly behind the hedgerow (TR4.HH3). In the north-eastern corner of this field is a hard standing area with several other brash and rubble piles, along with deadwood.</p> <p>Brash and rubble piles are suitable for small mammals, including hedgehog, amphibians, reptiles and nesting birds.</p> <p>Habitat condition (provisional): N/A (assessment not applicable)</p>		
TR4.HTN9		

<p>Group of eight mature and semi-mature sycamore trees located on a dismantled dry stone wall, on a slight raised bank. Ground flora is grazed species-poor semi-improved grassland and tall ruderals. Dead wood and brash piles are present. No sapling trees or understory are present.</p> <p>The trees provide suitable habitat for nesting birds, commuting and foraging bats. The dead wood and brash piles are suitable for small mammals including hedgehog.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN10	
<p>Deadwood and brash pile on the western road verge. Tall ruderal vegetation is growing within it, dominated by rosebay willowherb and common nettle, with other species present including common hogweed, cow parsley and creeping thistle. This area provides opportunities for small mammals including hedgehog, amphibians, nesting birds and reptiles.</p> <p>Habitat condition (provisional): N/A (assessment not applicable)</p>	
TR4.HTN11	
<p>Strip of semi-natural broadleaved woodland lining the road, and situated opposite a large patch of woodland at TR4.HTN4. A dry stone wall lines the woodland feature, and there is an abundance of moss present on and at the foot of this. The woodland is semi-mature with some good bat potential roosting features present within the trees (TR4.HBG7). The wood lacks an understory and is quite open under the canopy. The woodland strip is narrow so light can penetrate easily through woodland edge. Some saplings are present indicating regeneration, and there is no management evident. Canopy species include sycamore, sessile oak (<i>Quercus petraea</i>), ash, horse chestnut, sweet chestnut (<i>Castanea sativa</i>) and beech. Ground flora comprises tufted hair grass (dominant species), with frequent creeping buttercup and feather moss, and an even mixture of occasional barren strawberry, broadbuckler fern, male fern and <i>Polytrichum commune</i>.</p> <p>The woodland provides suitable habitat for small mammals, large mammals (including badger), nesting birds, amphibians and roosting/foraging/commuting bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

TR4.HTN12	
-----------	--



Marshy grassland lines a single track road, east of the main road (also a public footpath). The marshy grassland is particularly concentrated on the banks of a small ditch/brook running alongside the southern verge (TR4.HWC1). Further east along the road, the marshy grassland verges widen, particularly on the northern verge, which is also a raised bank. To the south-east, in a species-poor semi-improved grassland field, is a flush that runs down the hill in the field and into the brook (TR4.HWC1), this is filled with soft/compact rush. The species in marshy grassland habitat comprise soft rush, compact rush, tufted hair grass, crested dog's tail, Yorkshire fog, meadow grass sp. (*Poa* sp.), perennial rye grass (*Lolium perenne*), white clover, moss species, spear thistle, creeping buttercup and bittercress species. Small mammal runs are present within the grassland. The area also provides suitable habitat for nesting birds, terrestrial habitat for amphibians and foraging habitat for bats.



Habitat condition (provisional): Moderate (Score 2)



TR4.HTN13	
-----------	--


Spoil and rubble piles on a grassy mound running along a small track which appear well established with abundant moss coverage. The spoil and rubble is suitable for reptiles, amphibians and nesting birds.



Habitat condition (provisional): N/A (assessment not applicable)



<p>TR4.HTN14</p>	
<p>Small area of broadleaved plantation woodland within private property, situated behind a stone wall and adjacent to scattered semi-mature ash trees on the road verge. All trees within the woodland are young to semi-mature in age. Canopy species comprise beech, alder, fir species (<i>Abies</i> sp.) and ash. Understory species include laurel (<i>Laurus nobilis</i>) and hawthorn. Ground flora species recorded include those described in TR4.HTN11. Shade is approximately 90%, no signs of management present. Sapling presence indicates natural regeneration.</p> <p>The woodland provides suitable habitat for small mammals, large mammals (including badger), amphibians, nesting birds and foraging / roosting / commuting bats.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN15</p>	
<p>Semi-natural broadleaved woodland comprised of mature trees. Canopy species include beech, alder, ash and chestnut species. A stream is present within the woodland (TR4.HWC2). The woodland lacks management evidence and the ground flora is as described in TR4.HTN11. There are saplings present and the coverage of shade is high (approximately 90%). Sapling presence indicates natural regeneration.</p> <p>The woodland provides suitable habitat for small mammals, large mammals (including badger), amphibians, nesting birds and foraging / roosting / commuting bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	




<p>TR4.HTN16</p>	
<p>This area of the roadside verge is dominated by reed canary grass (<i>Phalaris arundinacea</i>) and common nettle on the eastern verge.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN17</p>	
<p>Area of field used for clay pigeon shooting which includes an open area of grassland on a sloping hill and several small buildings (huts). The grassland surrounding the shooting area is shorter than the majority of the surrounding grassland. Grazing sheep are also present in the surrounding area.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN18</p>	



<p>Marshy grassland dominated by soft rush with hard rush (<i>Juncus inflexus</i>) and compact rush. Frequent <i>Polytrichum</i> moss, feather moss, occasional <i>Sphagnum</i> moss species, spear thistle and marsh bedstraw (<i>Galium palustre</i>) are present. Rare broadbuckler fern and male fern. The area holds standing water and is boggy.</p> <p>This area of marshy grassland is suitable for amphibians, nesting birds and small mammals.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN19	
<p>Semi-improved acid grassland on a south facing bank within the moorland. The slope is approximately 45 degree. The area is lightly sheep grazed with small tussocks which have potential for reptiles. Dominated by rough meadowgrass (<i>Poa trivialis</i>) and mat grass with frequent purple moor grass (<i>Molinia caerulea</i>), low lying bilberry (<i>Vaccinium myrtillus</i>) (up to 2 cm tall) and heath bedstraw . There is occasional heath rush (<i>Juncus squarrosus</i>), crowberry (<i>Empetrum nigrum</i>), lichens, feather moss, <i>Polytrichum</i> moss, and rarely <i>Sphagnum</i> moss, marsh cinquefoil (<i>Comarum palustre</i>) and wavy hairgrass (<i>Deschampsia flexuosa</i>).</p> <p>This area has potential for reptiles, small mammals, amphibians and nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN20	
<p>Species-poor semi-improved grassland directly adjacent to the road and approximately 1.5 m wide. The grassland is a shorter sward height (less than 2 cm) than surrounding habitats and on flat ground adjacent to the road. Species recorded include meadow grass species, common daisy, clover species, dandelion species (<i>Taraxacum officinale</i> agg.), spear thistle and creeping buttercup present along the flattened roadside. Exposed rocks and a small exposed bare earth / peat overhang is also present within the surrounding acid grassland.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	



TR4.HTN21	
<p>A mosaic of marshy grassland and semi-improved acid grassland. The area is mostly dry with some small boggy areas which hold water. Marshy grassland areas are dominated by soft rush, with species listed in TR4.HTN18 less frequently occurring, with additional foxglove , bittercress and willowherb species (<i>Epilobium</i> sp.). The acid grassland species comprise those listed in TR4.HTN19.</p> <p>This area is suitable for nesting birds, amphibians, small mammals and reptiles.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN22	
<p>Continuous bracken with occasional foxglove, frequent feather moss, occasional heath bedstraw and <i>Polytrichum</i> moss. This habitat is on steep sided bank, approximately 45 to 80 degrees.</p> <p>This area provides suitable habitat for small mammals, reptiles, nesting birds and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN23	No photo
<p>Scattered bracken over an acid grassland and marshy grassland mosaic, located on steep bank south of stream (TR4.HWC4). The slope is approximately 70 to 80 degree. the dominant species is bracken with abundant mosses, frequent foxglove and frequent soft rush. This area was surveyed from the northern side of the watercourse.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



<p>TR4.HTN24</p>	
<p>Small areas of exposed rock with ling growing out of the tops along with fern species. The exposed rock are very steep, up to 10 m in height and north-facing.</p> <p>The exposed rocks are suitable for basking reptiles, although low suitability due to their direction.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN25</p>	
<p>Wet dwarf shrub heath with ling dominant over 50%. Species recorded include sheep's fescue abundant, purple moor grass, feathermoss, <i>Polytrichum</i> moss abundant, frequent crowberry, cross leaved heath (<i>Erica tetralix</i>), <i>Sphagnum</i> mosses, occasional bilberry, cranberry (<i>Vaccinium oxycoccos</i>), tormentil (<i>Potentilla erecta</i>) and sedge species. Rare broadbuckler fern, golden scaled male fern (<i>Dryopteris affinis</i>), bog rosemary (<i>Andromeda polifolia</i>) and bog asphodel (<i>Narthecium ossifragum</i>). The area is unmanaged other than light sheep grazing. The shrubs are up to 60 cm tall and tussocky. At the edge of the habitat acid grassland and marshy grassland are present. There are lots of small mammal tracks and runs, and a field vole (<i>Microtus agrestis</i>) was identified.</p> <p>This habitat is suitable for reptiles, small mammals, nesting birds and amphibians.</p>	



TR4.HTN26	
<p>Marshy grassland and acid grassland mosaic verge along both sides of road. The banks are north facing on both sides of road. The south bank is approximately 1.5 m high and 10 m high on the north of road. The verges are damp with abundant mosses, bittercress and lichens present. Abundant grasses and rushes with small tussocks. The area is unmanaged except for sheep grazing.</p> <p>This habitat is suitable for nesting birds, small mammals, amphibians and reptiles.</p>	
TR4.HTN27	
<p>Steep north-east facing bank adjacent to road, characterised as semi-improved acid grassland and grazed by sheep. The bank is on a 45 degree slope and transitions into a mosaic of acid grassland, wet dwarf shrub heath and marshy grassland towards the east.</p> <p>This area is suitable for reptiles, amphibians, small mammals and nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN28	No photo
<p>Small pools of stagnant water located within dry dwarf shrub heath. The pools are approximately 4 m x 2 m. The substrate is peat and rocks are present within. Potential for breeding amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



<p>TR4.HTN29</p>	
<p>Old quarry workings, ground depressions and spoil mounds which are now vegetated with dry dwarf shrub heath and acid grassland. Some rubble piles still present which are partly moss covered. This area provides a sheltered refuge from the exposed moorland. They provide suitable habitat for reptiles, common amphibians and nesting birds. There are areas of bare rock exposed in places, up to 10 m tall rock face. The surrounding habitats include acid grassland, marshy grassland, and heathland on banks 45 degree slope.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	
<p>TR4.HTN30</p>	
<p>Dry heath/acid grassland mosaic, covering a steep sided watercourse valley which is approximately 15 m tall. Ling is present as immature and mature shrubs. The acid grassland component is composed of wavy hairgrass, mat grass, springy turf moss, bilberry, heath bedstraw, hard fern, foxglove, soft rush, sedge sp. and health rush. The valley is lightly sheep grazed, but is otherwise unmanaged.</p> <p>The area provides suitable habitat for reptiles, amphibians, small mammals and ground nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN31</p>	



<p>Wet heath / acid grassland mosaic, located on an east facing, gently sloping hillside. Species recorded include ling, hare's tail cottongrass (<i>Eriophorum vaginatum</i>), bilberry, <i>Hypnum jutlandicum</i>, <i>Polytrichum</i> sp., waved silk moss (<i>Plagiothecium undulatum</i>), <i>Sphagnum compactum</i> and <i>S.capillifolium</i>, cranberry, crowberry and cowberry (<i>Vaccinium vitis-idaea</i>). The area is lightly grazed by sheep and game birds (pheasant (<i>Phasianus colchicus</i>) and red grouse (<i>Lagopus lagopus</i>)) are also present. The heather is mature shrubs.</p> <p>The habitat is suitable for nesting birds, reptiles, amphibians and small mammals. Also a suitable area for foraging bats and foraging birds of prey.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN32	
<p>Marshy grassland located on an east facing, gently sloping hillside. The area is dominated by soft rush, with marsh thistle, marsh willowherb, bittercress sp., <i>Sphagnum fallax</i> occasionally present, <i>Polytrichum</i> sp., Yorkshire fog, <i>Rhytidiadelphus squarrosus</i>, heath bedstraw, hard rush and tufted hairgrass.</p> <p>The habitat is suitable for nesting birds, amphibians, reptiles and small mammals.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN33	
<p>Dry heath and acid grassland mosaic dominates the verge, species comprising those listed in TR4.HTN19 with additional ling and bilberry frequent. The verge is approximately 3 m wide. There are a few young hawthorn shrubs and the verge is tussocky. Further north and south, part of the verge is marshy grassland dominated and up to 1.5m wide.</p> <p>The verge is suitable for amphibians, reptiles, small mammals and nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	




<p>TR4.HTN34</p>	
<p>Mosaic of dry heath, wet heath and marshy grassland, located on a gentle south-facing slope. Dry heath comprised of ling, cowberry and a layer of mosses including <i>Hypnum jutlandicum</i>. Overall in the dry heath area, the ericoid shrubs are over mature with some areas showing signs of burning. Wet heath is comprised of ling, common cotton grass (<i>Eriophorum angustifolium</i>), <i>Hypnum jutlandicum</i>, cranberry, heath rush, hare's tail cottongrass, <i>Polytrichum</i>, <i>Sphagnum palustre</i>, hard fern and sedge species. There are some areas of exposed peat due to damage or disturbance of unknown source. Marshy grassland areas are dominated by soft rush, with <i>Hypnum jutlandicum</i>, <i>Polytrichum</i> sp., <i>Sphagnum fallax</i>, health bedstraw, liverwort species, bracken, foxglove, and common polypody fern.</p> <p>The area provides suitable habitat for nesting birds, foraging bats, small mammals, amphibians and reptiles.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN35</p>	
<p>Semi-improved acid grassland roadside verge on a bank next to a drystone wall with some areas of scattered bracken, marshy grassland and heathland. Species present are similar to those listed in TR4.HTN1, however, on the western side of the road, scattered bracken, bilberry, heather and soft rush are also occasionally present. The verge is approximately 0.5 – 3 m wide, height approximately road level to 2 m high. The verge on the eastern side of the road is much narrower, up to 0.5 m wide.</p> <p>The habitat is suitable for nesting birds, amphibians, reptiles and small mammals.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



TR4.HTN36	
<p>Small coniferous plantation comprised of young to semi-mature Scot's pine (<i>Pinus sylvestris</i>) and spruce (<i>Pinus sp.</i>), with occasional mature trees. Approximately 90% canopy cover. The ground flora is sparse and predominantly covered by pine needles. There are frequent mosses and short grasses, frequent foxglove and occasional soft rush. There are several standing deadwood trees, accounting for less than 10% and an abundance of deadwood on the woodland floor. No signs of management. There are no signs of sapling or regeneration within the wooded, open understorey. Negligible bat potential.</p> <p>The woodland has potential for nesting birds, foraging and commuting bats, small mammals, large mammals and amphibians.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN37	No photo.
<p>Dry stone wall that has collapsed in places, leaving rubble piles along semi-improved acid grassland field boundary.</p> <p>Potential habitat for reptiles, nesting birds and small mammals.</p> <p>Habitat condition (provisional): Not applicable</p>	
TR4.HTN38	
<p>Row of young recently planting cypress trees (<i>Cupressus sp.</i>) within marshy grassland field. The area has limited ecological value but is suitable for nesting birds.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR4.HTN39</p>	
<p>Marshy grassland interspersed with small areas of semi-improved acid grassland. Marshy grassland is dominated by soft rush with springy turf moss, tufted hairgrass, marsh thistle, bittercress sp. heath bedstraw, willowherb sp., compact rush, buttercup sp. and common sorrel. The acid grassland is composed of sheep's fescue, tufted hairgrass, Yorkshire fog, sedge sp. and has a layer of moss dominating beneath the grasses. The field slopes gently towards the south, and steeply to the east, towards TR4.HWC20. The field is lightly sheep grazed. There is also scattered gorse (<i>Ulex europeaus</i>) and hawthorn scrub.</p> <p>The area provides habitat for nesting birds, amphibians, reptiles and small mammals.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN40</p>	
<p>Marshy grassland within a small depression at the base of a sloping field. Soft rush dominates the sward with occasional foxglove, mat grass and bracken. A layer of moss is present beneath the rushes and includes <i>Hypnum jutlandicum</i>, <i>Polytrichum</i> sp. and rare <i>Sphagnum fallax</i>.</p> <p>The area is suitable for nesting birds, amphibians, reptiles and small mammals as well as foraging bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	




<p>TR4.HTN41</p>	
<p>Roadside verge which is classified as semi-improved acid grassland and comprises wavy hair grass, mat grass, meadow grass species, cock's foot, Yorkshire fog, mosses, rushes, scattered bracken, raspberry (<i>Rubus idaeus</i>), hawthorn, ericoid species, and fern species. A small watercourse (TR4.HWC11) is present approximately 1m from the road within the grassland habitats. Further north the verge becomes narrower and flat, with willowherb species also present.</p> <p>The verge provides habitat for nesting birds, small mammals and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN42</p>	
<p>Semi-improved acid grassland dominated verge on bank, with collapsing drystone wall halfway up the bank. Species recorded are largely acid-grassland indicators with some neutral herbs. Species include bracken, red campion (<i>Silene dioica</i>), common hogweed, cock's foot grass, tufted hair grass, mat grass, meadowsweet, creeping buttercup, cow parsley, dandelion sp., hard fern, common ragwort, willowherb species, sow thistle (<i>Sonchus</i> sp.), soft rush, common nettle, bilberry, ling, red stemmed feather moss (<i>Pleurozium schreberi</i>), springy turf moss and heath bedstraw. The bank is east facing.</p> <p>This area is suitable for nesting birds, small mammals, reptiles and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN43</p>	<p>No photo.</p>
<p>Habitat surrounding TR4.HWC15 includes dense hawthorn and gorse scrub along with semi-mature trees. The scrub lines the watercourse in a steep channel. Areas dominated by soft rush and semi-improved acid grassland are present where scrub is absent.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



<p>TR4.HTN44</p>	
<p>Species-poor semi-improved grassland field with occasional soft rush scattered within. The edge of the field next to the road is on an east facing bank, approximately 2 m wide and is unmanaged, with scattered rushes, tussocks of grass and scrub. The roadside verge adjacent to this field is quite species-rich and includes yarrow, common nettle, cow parsley, bramble (<i>Rubus fruticosus</i> agg.), cock's foot grass, lesser celandine, creeping thistle, dandelion species, cleavers (<i>Galium aparine</i>), herb Robert and common sorrel.</p> <p>This area is suitable for ground nesting birds. The rougher habitat edges are suitable for small mammals and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN45</p>	
<p>Small area of species-poor semi-improved grassland along the banks of a stream (TR4.HWC13). The sward is a short height and there are frequent stands of soft rush. Scattered trees and scrub are present. The trees are immature and have guards present. Some areas of the bank are bramble dominated with occasional gorse and foxglove. On the western side of the stream are broadleaved trees including beech and willow, along with shrubs including laurel.</p> <p>This area is suitable for nesting birds and small mammals.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	




<p>TR4.HTN46</p>	
<p>Cotoneaster species (<i>Cotoneaster</i> sp.) present at the entrance to the horse paddock measuring approximately 5 m in total length. Several cotoneaster species are listed as invasive on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN47</p>	
<p>Pile of wood/chopped logs at the edge of semi-improved grassland field, partially grown over by grasses.</p> <p>This area is suitable for nesting birds, small mammals and amphibians.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	
<p>TR4.HTN48</p>	

<p>Large pile of wood within a yard of abandoned farm building.</p> <p>This area is suitable refugia for nesting birds, small mammals and amphibians.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	
<p>TR4.HTN49</p>	
<p>Broadleaved semi-natural woodland between the road and a sheep-grazed field. A watercourse (TR4.HWC17) flows within the woodland. The trees are semi-mature to mature trees and include the species beech, oak species, alder, conifer species, Scot's pine, sycamore, sweet chestnut, and silver birch (<i>Betula pendula</i>). There is some scattered standing deadwood. There is an understory of hazel saplings and holly. There are also piles of fallen deadwood. In general the understory is sparse with some minor tree regeneration. The canopy is 80% covered. The ground flora is dominated by ivy, with wood avens, mosses, herb Robert, cock's foot grasses, willowherb species, tufted hair grass, rose species (<i>Rosa</i> sp.), frequent bramble and ferns. There are no signs of management. The composition is approximately 70% mature and 30% semi mature trees.</p> <p>The woodland provides suitable habitat for nesting birds, roosting/foraging/commuting bats, small mammals, large mammals and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN50</p>	
<p>Mammal burrow adjacent to TR4.HWC9, located atop the western bank within an area of collapsed bank. The entrance is approximately 20 cm wide and 30 cm deep and the internal tunnel continues to be approximately this size. No evidence of a particular species but potentially suitable for use by otter as aholt.</p> <p>Habitat condition (provisional): N/A (not applicable)</p>	



<p>TR4.HTN51</p>	
<p>Storage of hay bales and compost heaps in small area of bare ground surrounded by an approximately 1 m wide strip of tall ruderal vegetation dominated by common nettle and rosebay willowherb.</p> <p>This area is suitable for amphibian refuge.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN52</p>	
<p>Area in front of a barn and wooden/stone outhouse. The area is approximately 10 m x 7 m, and is filled with brash piles. There is also tall ruderal vegetation comprising common nettle, common hogweed and greater burdock (<i>Arctium lappa</i>) grown through the brash. Close to the barn, bramble and tree saplings locally dominate forming an area of scrub approximately 5m x 2m. There is a large tree stump south of outhouse which provides good opportunities for invertebrates. The area is separated from the road by dry stone wall.</p> <p>This provides suitable habitat for small mammals (including hedgehog), amphibians, reptiles, nesting birds and foraging bats.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	


<p>TR4.HTN53</p>	
<p>Patches of Himalayan balsam (<i>Impatiens glandulifera</i>) between and adjacent to roadside hedgerows, including a dense stand to the south of hedgerow TR4.HH14 and on the northern bank of watercourse TR4.HWC18. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN54</p>	
<p>Residential garden with an orchard of apple trees (<i>Malus</i> sp.). There are scattered trees lining a small stream (TR4.HWC18) within the garden. The surrounding area is classified as amenity grassland. There is a small section of fallen drystone wall to the north of the garden boundary, with stacked paving flags leaning against it.</p> <p>The garden provides habitat for nesting birds, small mammals, foraging bat habitat and terrestrial habitat for common amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN55</p>	

<p>Group of mature and semi-mature ash, beech and sycamore trees as a small woodland block, which are enclosed by a fallen down dry stone wall on an earth mound. The ground flora comprises grazed species-poor semi-improved grassland and moss-covered stones. Assessed as a relic of semi-natural deciduous woodland. No shrub layer present.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN56	
<p>Brash pile adjacent to scrub and scattered trees. This habitat is a suitable refuge for amphibians as well as having potential for nesting birds and small mammals (including hedgehog).</p> <p>Habitat condition (provisional): N/A (assessment not applicable)</p>	
TR4.HTN57	
<p>Semi-natural broadleaved woodland located on both sides of the road. The canopy is composed of ash, oak species, beech, alder and birch species (<i>Betula</i> sp.). There is an understorey of snowberry, holly, hawthorn and rose species. The ground flora consists of creeping buttercup, variegated yellow archangel (a Schedule 9 species of the Wildlife and Countryside Act 1981 (as amended)), wood avens, pendulous sedge (<i>Carex pendula</i>), lords-and-ladies (<i>Arum maculatum</i>), ivy, bramble, dog's mercury (<i>Mercurialis perennis</i>), hart's tongue fern and common polypody fern. The trees are mature and semi mature, with immature saplings also present in the understorey. Some of the more mature trees have ivy cladding. There is evidence of previous management due to the presence of felled deadwood on the ground. Some dead limbs are also present on trees, along with fallen deadwood. A stream (TR4.HWC19) runs through the woodland and the woodland slopes fairly steeply towards the watercourse, creating a small valley.</p> <p>The woodland has potential for large mammals (including badger setts), nesting birds, roosting, commuting and foraging bats, small mammals and terrestrial habitats for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN58	No photo.
<p>Variegated yellow archangel within the understorey of the woodland. This is listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR4.HTN59</p>	
<p>Coniferous plantation woodland with a dense canopy. There is no understorey or ground flora layer and there is also an absence of deadwood.</p> <p>The woodland has potential for nesting birds and foraging and commuting habitat for bats.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN60</p>	
<p>Narrow strip of semi-natural broadleaved woodland which encompasses TR4.HWC22. The canopy is composed of alder, ash, horse chestnut and beech. Trees are all mature and semi mature and there is an understorey of holly and immature beech. The ground flora includes tufted hairgrass, fern species and bramble. Tree sapling regrowth is present, along with standing and fallen deadwood.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HTN61</p>	

<p>Narrow strip of semi-natural broadleaved woodland which encompasses TR4.HWC23. The canopy is composed of oak species, ash, conifer spies and willow. Trees are all mature and semi mature, some of which are clad with ivy. There is an understorey of willow and holly. The ground flora includes ivy with bare earth/leaf litter also present. Succession is evident due to presence of young tree saplings. Standing and fallen deadwood are also present. The woodland sits within a small valley, with the watercourse running through the centre. Old bird nests were noted.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN62	No photo.
<p>Semi-natural broadleaved woodland located within a residential garden. The canopy includes beech and there is an understory of holly, laurel and rhododendron. Some of the mature tree branches overhang the road. The woodland is on a steep bank sloping down to the road. The ground flora includes amenity grassland with scattered daffodils and lords-and-ladies. Rhododendron is an invasive species listed on Schedule 9 Wildlife and Countryside Act 1981 (as amended).</p> <p>This area provides habitat for nesting birds, foraging and commuting bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN63	
<p>Group of approximately ten scattered silver birch and sycamore trees within a residential garden. The trees are all mature and semi-mature and there is no understorey layer. The ground flora comprises amenity grassland present beneath, along with Grindleton brook TR4.HWC23.</p> <p>The trees have potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN64	

<p>Semi-natural broadleaved woodland with a canopy of semi-mature ash, oak species and mature blackthorn (<i>Prunus spinosa</i>). Some of the trees are clad with ivy. There is no understorey layer. The ground flora is composed of grazed species-poor semi-improved grassland. The woodland lacks standing or fallen deadwood and there is no succession evident. The woodland is located on a northern facing slope.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN65	
<p>Semi-natural broadleaved woodland with a canopy of mature sycamore. The canopy is quite open with gaps between mature trees. The understorey includes hawthorn and the ground flora is grazed species-poor semi-improved grassland. The canopy and understorey have an open structure with lots of internal light. There are some small narrow pieces of fallen and standing deadwood. The woodland is situated on a north-eastern facing slope.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN66	No photo.
<p>Adjacent to TR4.HTN65 is an area of densely planted semi-mature broadleaved woodland. There are signs of management including tree removal. There is scatter understorey layer of scrub and the ground flora comprises grassland species.</p> <p>The area provides suitable habitat for nesting birds, commuting and foraging bats, small mammals, amphibians and large mammals (including badger).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN67	

<p>Narrow strip of semi-natural broadleaved woodland which sits behind hedgerow TR4.HH31. The canopy consists of semi-mature silver birch, beech, sycamore and mature hawthorn and is dense. The understorey includes beech saplings, hawthorn, rose species and willow. Leaf litter covers the majority of the ground, however, ivy, bramble, wood avens, dog's mercury and lesser celandine were also noted. There is some fallen narrow pieces of deadwood present, however standing deadwood is absent.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN68	
<p>Semi-natural broadleaved woodland located along the eastern bank of TR4.HWC25. The canopy consists of willow, sycamore and ash. The trees are all semi mature and immature, some of which are clad with ivy. There is an understorey of immature willow and hawthorn. The ground flora is dominated by dense ivy. The woodland is located on a stone bank which borders the watercourse. There is some standing and fallen deadwood present, as well as some narrow pieces of fallen deadwood which appear to have been carried downstream by the watercourse. Old disused bird nests were noted.</p> <p>The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN69	

Large area of standing water which is surrounded by semi-natural broadleaved woodland. The standing water has no associated aquatic vegetation. There were no waterfowl present at time of survey, however it is suitable for those species. The water appears to be moderately turbid, although the survey was undertaken during heavy rain. Fish are possibly present within the waterbody. It is shaded by approximately 5%. The water quality was assessed to be moderate and the surrounding terrestrial habitat good, in line with Habitat Suitability Index (HSI) assessment. Waterbodies have potential to support breeding amphibians (including great crested newts (*Triturus cristatus*)), as well as being important habitats for a range of other fauna including foraging bats, small mammals, nesting birds and large mammals.

TR4.HTN70



Semi-natural broadleaved woodland which surrounds TR4.HTN69. There is a canopy of willow, oak, hazel and ash. Semi mature and immature trees were noted, some of which appear to have been previously coppiced, and some of which are clad with ivy. The understorey includes hawthorn, snowberry, dogwood (*Cornus sanguinea*), rose species and bramble. The ground flora consists of dense ivy. The canopy and understorey are both dense and a lack of deadwood was noted.

The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.



Habitat condition (provisional): Moderate (Score 2)

TR4.HTN71









Narrow strip of semi-natural broadleaved woodland located adjacent to the road. The canopy consists of sycamore and ash. Mature and semi mature trees noted, some of which are clad with ivy. The understorey consists of hawthorn and immature sycamore. The ground flora is dense ivy, with moss species, fern species and yarrow. There are numerous narrow pieces of fallen deadwood on the ground which are covered by moss and ivy. There is no standing deadwood.




The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.



Habitat condition (provisional): Moderate (Score 2)	
TR4.HTN72	
<p>Semi-natural broadleaved woodland with a canopy of semi-mature ash and sycamore. The understorey consists of hawthorn and immature oak and ash. The ground flora includes dense ivy, with wood avens, rose, bramble, creeping cinquefoil and cock's foot grass. There are some narrow pieces of fallen deadwood present and no standing deadwood. The woodland slopes downwards towards the south-west and towards TR4.HWC26.</p> <p>The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN73	
<p>Semi-natural broadleaved woodland with a canopy of willow, ash and sycamore. The trees are mostly immature with scattered mature trees, these are clad with ivy. The understorey consists of privet (<i>Ligustrum vulgare</i>), elm species (<i>Ulmus</i> sp.), ash saplings, beech saplings and hawthorn. The ground flora is mostly covered with leaf litter, also present are ivy and bramble. No deadwood noted. The woodland is situated on a steep bank or bund. Multiple mammal paths are identified in the ground flora. The woodland joins on to a railway to the west and steeply slopes at this edge. A layer of dust is present on the ground flora from roadside pollution.</p> <p>The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR4.HTN74</p>	
<p>Narrow strip of planted trees which runs parallel to the road. The canopy is composed of semi-mature beech and the understorey layer is absent. The ground flora is composed of dense ivy and leaf litter. There is no deadwood present.</p> <p>The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN75</p>	
<p>Semi-natural broadleaved woodland with a canopy dominated by willow. Additional canopy species include ash, sycamore and beech. The trees are all semi-mature and immature adjacent to the road, and further away from the road the trees are semi-mature to mature. Some trees are clad with ivy. The understorey is composed of immature willow, hawthorn and beech saplings. The ground flora is dominated by ivy, with common knapweed, bramble and umbellifer species also present. The canopy and understorey are both dense. No deadwood was noted. Old birds' nests were identified.</p> <p>The woodland provides suitable habitat for nesting birds, large mammals, small mammals, commuting/foraging/roosting bats and terrestrial habitat for amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



TR4.HTN76	
<p>Area of Himalayan balsam at the edge of the woodland which extends out into the field by approximately 40 m by 4 m. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN77	
<p>Himalayan balsam dominated the roadside verge in this area for approximately 40 -50 m in length. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN78	No photo.
<p>Himalayan balsam stand within field adjacent to trees and scrub along a field boundary. The area is approximately 5 m by 3 m. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN79	
<p>Dry heath acid grassland mosaic within an area of undulating ground which generally slopes towards the south. Dominated by mature ling with bilberry, <i>Hypnum jutlandicum</i>, springy turf moss, hard fern, soft rush, purple moor grass, foxglove, bracken, compact rush, tufted hair grass, cock's foot, tormentil and scattered birch and hawthorn scrub. The area grades into continuous bracken at the break of the slope towards the west.</p> <p>Suitable for nesting birds, reptiles, amphibians, small mammals.</p>	



Habitat condition (provisional): Moderate (Score 2)	
TR4.HTN80	
<p>Area of dense gorse scrub which is adjacent to a dry stone wall. There is scattered bramble between the gorse. Towards the west is a sheep-grazed species-poor semi-improved grassland field.</p> <p>The scrub is suitable for small mammals, foraging and commuting bats and nesting birds.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN81	
<p>The verge habitats at this location is damp and there is a very small area of flowing water which eventually becomes indistinct further downstream in the verge. Species recorded include common sorrel, mat grass, meadowsweet, lesser celandine, common hogweed, common nettle, broadleaved dock, cock's foot, cleavers, Yorkshire fog and bracken.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN82	
<p>Immature Himalayan balsam seedlings within TR4.HH22. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HTN83	No photo.

<p>Area of flush and wet heath / acid grassland mosaic on the eastern side of TR4.HWC9. This area has a carpet of <i>Sphagnum</i> mosses beneath ling and soft rush. Species recorded include <i>Polytrichum commune</i>, cranberry, cowberry, crowberry, <i>Sphagnum palustre</i>, <i>Sphagnum capillifolium</i>, <i>Sphagnum fallax</i>, heath bedstraw, bilberry and cross leaved heath.</p> <p>The area is suitable for reptiles, amphibians, nesting birds and foraging bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN84	
<p>Small triangle of semi-natural broadleaved woodland with a small watercourse running through (TR4.HWC18). Canopy species are mature and include alder, ash and beech. There is an understory layer of rowan, holly and alder. Ground flora is ivy dominated with some bramble, cow parsley, honeysuckle (<i>Lonicera periclymenum</i>), pendulous sedge, dog's mercury and meadow grass. Steeply slopes down to the watercourse. The woodland joins into a larger area of woodland to the north beyond a wooden fence. Some immature Himalayan balsam seedlings are present. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN85	
<p>Piles of brash and deadwood from previously fallen tree. This creates good habitat for small mammals (including hedgehog), amphibians and nesting birds.</p> <p>Habitat condition (provisional): N/A (not applicable)</p>	
TR4.HTN86	

<p>Himalayan balsam seedlings alongside the riverbank close to the road bridge. Approximate area is 1 m by 3 m. There are no signs of the plant there from the previous year (i.e. no dead stems) which possibly indicates it was either grazed or has spread along the riverbanks. Himalayan balsam is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HTN87</p>	
<p>An area of mire and flush between two watercourses (TR4.HWC5 and TR4.HWC6). The mire is dominated by a continuous layer of hare's tail cotton grass and common cottongrass, over a thick carpet of <i>Sphagnum</i> mosses, including <i>S.fallax</i>, <i>S.palustre</i> and <i>S.papilosum</i>. The flush is a dense sward of soft rush with a dense carpet of <i>Sphagnum</i> mosses beneath (same species). Additional moss species present within the flush area include <i>Hypnum jutlandicum</i> and <i>Polytrichum commune</i>. This area is sensitive to pollution and provides habitat for amphibians, reptiles, small mammals, nesting birds and foraging bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>Watercourses</p>	
<p>TR4.WC4</p>	
<p>A slow flowing drainage ditch with shallow earth banks. The channel is approximately 1 m wide with a few centimetres of water at time of survey. The channel is well vegetated with brooklime and the margins are vegetated with silverweed (<i>Potentilla anserina</i>), bittercress, water mint, compact rush and soft rush. The earth banks are rush dominated with water mint, heath bedstraw, tufted hair grass and Yorkshire fog. There is negligible protected species potential because the ditch is very shallow, not densely vegetated and there is no connectivity to other watercourses.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	

<p>TR4.WC21</p>	
<p>Narrow, fast flowing stream, with flows north to south and culverted underneath the access track. The stream sinks to beneath the ground south of the access track. The width is approximately 0.3 m and depth 0.2 m. The substrate is earth with pebbles and boulders. The banks are steep and dominated by dense rush growth.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.WC22</p>	
<p>Very slow flowing outfall from pond which flows approximately south-west between two small hillocks. The channel is indistinct and dry in places. The depth is up to 4 cm. The channel is fringed by soft rush with shade provided by willow scrub. Negligible protected species potential but suitable for amphibians in stagnant areas.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.WC23</p>	
<p>A very narrow overflow channel running between ponds/lagoons. Vertical earth banks are up to 30 cm tall and the channel is approximately 10 cm wide. In some areas the channel is indistinguishable beneath the rushes / flush. Fringed by soft rush and continuous bracken in the wider area. Negligible protected species potential.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

<p>TR4.HWC1</p>	
<p>Narrow ditch containing a small stream within a marshy grassland strip along the edge of a semi-improved grassland field. The flow is slow and stagnant in places and the watercourse flows roughly east to west. The channel width ranges from 0.5 -0.1 m, and the bank width is approximately 1 m. The substrate is mostly bare earth with scattered stones. The embankment is steep on the southern side and more gradual to the north. The bankside vegetation is characterised as marshy grassland, with the species outlined in TR4.HTN12. Emergent in-channel vegetation includes brooklime , willowherb and bittercress species. The watercourse has negligible potential for protected species. It culverts beneath the track and road in several locations. The channel is heavily choked with vegetation and narrow in places.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HWC2</p>	
<p>Small stream flowing east to west within a broadleaved woodland. The watercourse emerges from a culverted pipe in the woodland and culverts again under the main road and opposite field. The watercourse reappears downstream to the west within a semi-improved grassland field (renamed TR4.HWC30 here). The flow is slow and the banks are flat, enabling water to overflow which has created boggy ground within the woodland. There is some fallen deadwood in the stream. The embankment flora is broadleaved woodland with ground flora including creeping buttercup, common nettle, fern species and is largely dominated by leaf litter. The channel substrate is bare earth. The watercourse has negligible protected species potential. The channel width is approximately 0.4 m at the widest point. The watercourse has the potential to overflow in places with flat banks. Sections of the banks are steeper although overall are gradually sloped.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR3.HWC3</p>	
<p>Small watercourse flowing within mixed woodland. The channel is cut deeply into the ground and is 100 % shaded by woodland. the channel is 1 m wide, with a variable water depth of less than 20 cm. There is a moderate flow, from south-east to north west. the substrate is earth with stones, cobbles and boulders. The banks are earth and stone with exposed tree roots. Marginal vegetation includes tufted hair grass, common nettle and mosses. There is abundant leaf litter, brash piles and dead wood. Potential for forging otter and holts in dead wood. Watercourse source within the woodland is from a culvert.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC4</p>	
<p>Fast-flowing stream through scattered bracken and acid grassland in a steep sided valley gorge. The watercourse is 1.5 m wide, approximately 30 cm deep, with deeper pools in sections. The banks of the stream are dominated by bracken with areas of mature dry heath, acid grassland, soft rush, fern species, bittercress species and mosses on the banks directly adjacent. The substrate is rocky and the stream bed is stepped, flowing over exposed bedrock. There are overhanging exposed peat banks which are undercut, and sections which are boulder/pebble dominated. The channel is shaded due to the overhanging sections of the bank and the steep valley the watercourse is within. The water appeared to be clear. There is negligible potential for protected species.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

<p>TR4.HWC5</p>	
<p>Fast-flowing small stream through moorland, passing close to the road. The watercourse is approximately 10 cm wide and 10 cm deep. The water appeared to carry some substrate and had a high peat content (discoloured). Rushes overhanging the watercourse and it is approximately 40% shaded. This watercourse is adjacent to a small area of fen and flush (TR4.HTN87). The substrate is bare peat / earth with grasses and rushes on the banks and within the channel. The embankments are steep to the south and dominated by acid grassland. The watercourse has negligible potential for protected species. A small tributary feeds into this watercourse from the south from a culvert under the road.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC6</p>	
<p>Moderately flowing stream through moorland which flows into TR4.HWC5. The watercourse is situated within a deep ditch with acid grassland, marshy grassland and scattered heath on the banks. Sections of the banks are collapsed and undercut with exposed peat overhanging. Rushes are present within the channel and on the embankments. The watercourse has negligible potential for protected species.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

TR4.HWC7	
----------	--



A small stream which flows from a spring adjacent to the road and is a tributary to TR4.HWC9. It is fed by TR4.HWC8 upstream. The watercourse has a slow flow through heath, acid grassland, bracken and marshy grassland to the east. It is shallow; being a maximum of 2 cm deep. The channel is 30 cm wide. The banks are indistinct and the flow disperses within the rushes occasionally. There is an oily layer on the surface of the channel and the water is tinted orange. The substrate is bare earth and peat with grasses within the channel and marshy grassland on the banks. Negligible potential for protected species.



Habitat condition (provisional): Poor (Score 1)



TR4.HWC8	
----------	--


A shallow and narrow stream / seepage running parallel to the road within a road verge. The watercourse is 20 cm at the widest, 2 cm deep and has a stone and sand substrate. The banks are characterised as acid grassland with some heath and occasional rushes. The watercourse has no emergent vegetation. There are overhanging grasses and rushes. The watercourse has a slow flow and negligible potential for protected species. Sections of the watercourse are dry or polluted from road run-off.

Habitat condition (provisional): Poor (Score 1)

<p>TR4.HWC9</p>	
<p>Moderate to fast flowing stream through a steep sided gully which is dominated by heathland and acid grassland. The channel flows roughly north the south. At the northern end of the survey area, the watercourse has steep-sided banks which are approximately 2 m tall and are near vertical. Some banks have collapsed resulting in some shallower areas of the banks. The channel is approximately 30 cm wide and ranges from 5 cm to 20 cm deep, with some deeper pooling in parts. The channel bed is composed of boulders and gravel. Through the central area of the watercourse within the survey area, the stream has a moderate to fast flow through a steep-sided gully. The habitat within the gully is dry heath and acid grassland mosaic. There is a band of soft rush bordering the channel. The stream bed is stepped in places and pools in places. Towards the southern end of the watercourse within the survey area, the channel is approximately 50 cm wide and ranges from 10 cm to 30 cm deep. There are small cascades in places within the channel. The banks are steep earth and range from 0.5 m to 5 m deep. There is in general a lack of aquatic vegetation with a scattering of mosses and liverworts on exposed boulders. The watercourse is suitable for commuting otter.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC10</p>	
<p>Tributary stream to TR4.HWC9. A small stream flowing from beneath the road and through semi-improved acid grassland towards TR4.HWC9. The watercourse has an indistinct channel and flows over the grassland before flowing down a short and steep rocky valley where it joins TR4.WC9. The channel consists of sand, gravel and boulders. The banks range from very shallow to approximately 0.5 m tall and vertical. The watercourse is approximately 2 cm to 10 cm deep and width approximately 15 cm with some wider pools in places. The watercourse has negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR4.HWC11</p>		
<p>This watercourse is similar to TR4.HWC8 and is a small, narrow stream / seepage adjacent to the road. The embankments are dominated by grassland, with rushes (including soft rush and jointed rush). The watercourse is up to 1 cm deep and 20 cm wide. The substrate is bare earth and sections of the watercourse are choked with mud. There are emergent mosses within the channel as well as grasses and rushes. There is negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>		
<p>TR4.HWC12</p>		
<p>A field drain adjacent to a horse paddock. The watercourse has a slow flow, is approximately 2 cm deep and 15 cm wide. There are bare earth banks which are vegetated with soft rush and grasses. The substrate is bare earth and there is no emergent vegetation. The watercourse flows from west to east until it meets the road verge. Here it splits and part is culverted under road and joins TR4.HWC13. There is negligible potential for protected species.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>		

<p>TR4.HWC13</p>	
<p>Stream flowing parallel to the road, situated within dense scrub, then emerging into a marshy grassland field further south. There is a moderate flow and the channel is approximately 50 cm wide and 5 cm deep. The substrate is stones. The embankments are steep and heavily vegetated. Species include foxglove, gorse, bramble, bracken, fern species and hawthorn scrub. Tree saplings are also present on the banks and overhanging the stream. Sections of the banks are shallow and grassy and other sections are steep but with bare patches of ground and mosses. Further south the watercourse is culverted through a marshy grassland field, and here there are gorse, young trees and saplings on the bank. Continuing further south the watercourse has steep banks and the stream flows through a steep valley. A small tributary (not separately described) flows into the main stream, coming from under the road. The tributary is approximately 20 cm wide, 2-3 cm deep with no obvious banks present and a bare earth and gravel substrate. Here there is overhanging marshy grassland, submerged grasses and gorse scrub.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC14</p>	
<p>Stream flowing adjacent to the road in a steep sided gully. Towards the south of the survey area the watercourse is culverted beneath the road. The watercourse has a moderate flow and is approximately 0.5 m wide and up to 10 cm deep. The banks are steep and heavily vegetated with an abundance of overhanging vegetation. The watercourse is hidden beneath dense vegetation in places. There is approximately 3 m of vegetated banks on both sides of the watercourse. Species include bramble, gorse, bracken, umbellifer species, willowherb, common nettle, common hogweed, umbellifers and tree saplings. The substrate is sand, pebble and bare earth. In channel vegetation includes marsh pennywort (<i>Hydrocotyle vulgaris</i>). There is negligible potential for protected species.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

TR4.HWC15	
-----------	--



Stream flowing through a marshy grassland strip at the edge of a field which culverts beneath the road further downstream, before emerging within dense scrub. The watercourse has a slow flow which is stagnant in places. It is approximately 0.5 m wide and 2 cm deep. There are shallow grassland-dominated banks which are approximately 60 cm tall. Soft rush immediately surrounds the banks. The channel has a bare earth, muddy substrate. The channel flows through a winding gully in between semi-improved fields. Young tree saplings, gorse, bramble, tall ruderals, marshy grassland and dense scrub (including dog rose) are present on the banks. There is negligible potential for protected species.


Habitat condition (provisional): Moderate (Score 2)



TR4.HWC16	
-----------	--



This stream emerges from a culvert from a semi-improved grassland field and culverts beneath the road. There is only a small section visible above the ground. The channel is 15 to 30 cm wide and 2 cm deep. The substrate is bare earth and muddy. The banks are up to 30 cm tall and dominated by grasses. Tall ruderals also present on banks as well as willowherb species, umbellifer species, and bramble. The watercourse has a slow flow with occasional submerged grasses within the channel. There is negligible potential for protected species.



Habitat condition (provisional): Poor (Score 1)


<p>TR4.HWC17</p>		
<p>Stream running through broadleaved woodland (TR4.HTN49). The substrate is stone and sand and the watercourse has a slow to moderate flow. The banks are flat in sections and up to 2 m deep in other sections. There are some overhanging tree roots within the channel. The adjacent woodland ground flora is dominated by leaf litter with bittercress species and speedwell (<i>Veronica</i> sp.) noted along with overhanging ferns and trees. The channel is up to 1 m wide and approximately 3 cm deep. The watercourse has negligible protected species potential. Himalayan balsam is present within this woodland, this is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>		
<p>TR4.HWC18</p>		
<p>A slow flowing watercourse which flows roughly west to east. The channel is approximately 1 m channel wide. The bank width is approximately 2 m. The banks are shallow slopes of bare earth. The watercourse channel substrate is cobbles and bare ground. At the upstream end, the watercourse travels within a small area of broadleaved semi-natural woodland before culverting beneath the road. Further downstream, the bankside vegetation is characterised as species-poor semi-improved grassland with scattered soft rush and compact rush. There is a small patch of Himalayan balsam with common nettle and common hogweed near to the access gate. Scattered mature and semi mature trees are present along the bank. Himalayan balsam is listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The watercourse flows through species-poor semi-improved sheep grazed land. There is negligible potential for protected species.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>		

<p>TR4.HWC19</p>	
<p>Narrow stream which is a continuation of TR4.HWC18, flowing roughly from north to south. The watercourse ranges from approximately 1 - 1.5m wide and 5 – 10 cm deep. The watercourse has a substrate of rock, pebbles, gravel and silt. There is a moderate flow although the survey was undertaken during rainfall. The banks are bare earth and consist of near vertical to near horizontal slopes along the length. The watercourse is approximately 30 cm deep. There is no aquatic vegetation recorded. The bankside vegetation includes soft rush, lesser celandine, hawthorn and bramble. There is potential for commuting otter but otherwise negligible protected species potential. The watercourse flows through species-poor semi-improved grassland, woodland and scrub habitats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC20</p>	
<p>This watercourse flows parallel to the road for a short section and is culverted beneath the road before joining with TR4.HWC19 downstream. The channel is shaded by scrub and trees. The watercourse is approximately 0.5 m wide and of an unknown depth. There are steep bare earth banks and the channel is approximately 0.3 m deep. There is negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

<p>TR4.HWC21</p>	
<p>Small stream running parallel to the road. The watercourse is approximately 10 cm deep, 20 cm wide, with a slow to moderate flow. The substrate is silt and stone. The watercourse roughly runs from northeast to southwest and is culverted at the southwestern end. There is no aquatic vegetation and the majority of the channel is shaded by TR4.HH25. The banks are bare earth and are approximately 5 cm tall and horizontal. There is negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
<p>TR4.HWC22</p>	
<p>West Clough Brook, flows roughly from north to south. It is approximately 3 - 4 m wide and ranges from 20 to 40 cm deep. The watercourse flows on a bed of natural stone, pebbles, shingles, and has a moderate to fast flow. There are earth and natural stone banks, ranging from 0.25 to 5 m deep. The banks are near vertical in some areas and shallow in others. There is potential for commuting otter and crayfish, and negligible potential for other protected species due to the fast flow. The banks are vegetated with fern species, ivy, moss species and bramble. There is no aquatic vegetation.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

<p>TR4.HWC23</p>	
<p>Grindleton Brook flows roughly from north to south and is surrounded by broadleaved woodland to the north of the road. The brook is culverted beneath the road and to the south of the road, emerges south of houses. It is a tributary of the River Ribble (TR4.HWC24)/ The watercourse is approximately 2 - 4 m wide, 10 - 30 cm deep with a moderate flow. The watercourse has a bed of rock and shingles. The banks are bare earth and are approximately 3 m deep and a 45 degree slope. There is no aquatic vegetation. TR4.HTN61 describes the surrounding vegetation. The watercourse has commuting otter potential along with crayfish and salmonid fish potential.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC24</p>	
<p>River Ribble. This watercourse flows roughly from east to west within the survey area and is approximately 15 m wide and 2 m deep. There is a moderate flow, water fairly turbid water at the time of survey (possibly due to recent rain). The watercourse has a bed of rock and shingle. There are earth banks, ranging from approximately 0.5 to 1.5 m deep, averaging 45 degree slope. The banks are reinforced with stone and bags of stone in places. In channel vegetation includes reed canary grass but there are otherwise no other aquatic vegetation. The bankside vegetation includes willowherb, reed canary grass, short, grazed grassland, willow scrub and some scattered trees. Otter are known to be present along the River Ribble in this area, and therefore the habitat is suitable for otter commuting, however there are but no suitable lay-up sites within survey area. The river also has potential for white-clawed crayfish (<i>Austropotamobius pallipes</i>), salmonid fish and is also associated with a variety of nesting birds. The River Ribble is also known to support a population of signal crayfish (<i>Pacifastacus leniusculus</i>) which are listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

<p>TR4.HWC25</p>	
<p>Watercourse flowing roughly from south to north located to the east of residential houses. The watercourse ranges from approximately 2 m to 10 m wide, with vegetated islands present within the channel. The vegetated islands include the species iris, pendulous sedge, buddleia, reed canary grass, common hogweed and broadleaved dock. The channel is mostly man made, with stone brick banks which reach approximately 3 m high. Small areas of the bank are composed of natural stone and earth, here the bank is shallower (approximately 45 degree slope). The watercourse bed was not visible due to highly turbid water and recent heavy rain immediately before and during survey. A weir is present within the survey area. A woodland (TR4.HTN68) is present on the eastern bank and the remaining banks are unvegetated or clad with ivy. This watercourse is a tributary to the River Ribble (TR4.HWC24). There is potential for commuting otter, crayfish and salmonid fish.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC26</p>	
<p>A narrow stream which flows through an area of broadleaved woodland, roughly from southeast to northwest. The watercourse is approximately 0.75 m wide of an unknown depth with a moderate flow. There is no aquatic vegetation. The channel is culverted at the south-eastern end. The channel is heavily shaded by the surrounding woodland. There are shallow earth banks which are approximately 20 cm deep. TR4.HTN72 contains a description of the surrounding vegetation. There is negligible protected species potential.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
<p>TR4.HWC27</p>	<p>No photo.</p>
<p>Wet ditch along a hedgerow (TR4.HH8). Channel is 0.5 m wide and less than 10 cm deep. The ditch becomes dry close to the road (western section of the ditch). The banks are earth and pebbles and the substrate is earth. The southern bank features the hedge in a raised bund, the northern bank is more gently sloped. Aquatic and marginal vegetation includes brooklime, soft rush and grass species; Yorkshire fog and cock's foot. Negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

TR4.HWC28	No photo.
<p>Narrow stream, approximately 1.5 m wide and less than 15 cm deep, with a meandering channel. The water is fast flowing, with direction of flow from south to north. The substrate is earth with boulders, gravel and pebbles. There are small areas of exposed gravel banking. The banks are earth and boulders with trees and exposed tree roots present. A small inflowing tributary was recorded. Potential for otter and crayfish. Negligible water vole (<i>Arvicola amphibius</i>) potential.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HWC29	No photo.
<p>Small watercourse which is a tributary to TR4.HWC28 and joins together further downstream. The watercourse channel is less than 0.5 m wide and less than 15cm deep. The water has a slow flow and flows from west to east, meeting TR4.HWC28 at its eastern end and springing from below ground at the western end. The substrate is earth with gravel and pebbles present. The banks are earth and deeply cut, with boulders, stones and the exposed roots of trees present. The banks feature a narrow strip of relic semi-natural deciduous woodland (see TR4.HTN2). Alder, oak, ash, holly and hawthorn were recorded along the banks. Marginal vegetation is limited to grazed species-poor semi-improved grassland and common nettle. No aquatic vegetation was recorded. The stream becomes dry to the west. The stream was assessed as providing negligible potential for crayfish, water vole and otter.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HWC30	No photo.
<p>Narrow watercourse, with a channel approximately 30 cm wide and water depth of less than 10 cm deep. The flow rate is moderate and the channel travels from south to north. The watercourse is set in a deeply cut channel, surrounded by grazed, rough semi-improved grassland. The substrate is earth with cobbles and stones. The banks are earth. Marginal vegetation includes rush and grass species. Light cattle poaching is present in the channel. The watercourse springs from below ground at its most southern point, in a field. Potential for foraging otter, the watercourse is likely too shallow for crayfish and unsuitable for water vole.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HWC31	No photo.
<p>A ditch which runs alongside the farm access track then takes a sharp turn to run northwards through a grazed field. The channel varies in width but is typically around 0.5 m wide and 20 cm deep. There is no flow and the water was frozen at the time of survey. The substrate is earth with stones and pebbles present. The banks are earth and sloped at a gentle gradient of approximately 45° and are heavily cattle poached. There is no submerged aquatic vegetation, and marginal vegetation is dominated by long and short grasses, with rush species and brooklime also recorded. The ditch feeds into man made scrapes. The ditch is culverted beneath the road and there are short, culverted sections in the ditch. it terminates to the north, where there is an outflow pipe. There is negligible potential for water vole, otter and crayfish.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HWC32	

Very short section of watercourse flowing emerging in an area of soft rush in a corner of land close to the road. This watercourse is likely fed by TR4.WC22 underground. The channel is approximately 1 m wide and pooling and is approximately 10 cm deep. The channel flows roughly eastwards where it becomes indistinct within the rushes and is choked with *Sphagnum* mosses, *Polytrichum* moss and scattered hare's tail cottongrass. There are sections of exposed peat visible. There is negligible potential for protected species.

Habitat condition (provisional): Moderate (Score 2)

References

Bowland Ecology. (2020). *TR4 Ecology Survey Data Report: Target Note Report V2*.

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.

Crosher, I., Gold, S., Heaver, M., Heydon, M., Moore, L., Panks, S., Scott, S., Stone, D. & White, N. (2019). *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019)*. Natural England.

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)*.



**Haweswater Aqueduct Resilience Programme -
Proposed Marl Hill Section
Supplementary Environmental Information**

Appendix B7: Annex 3

Off-Site Highways Works – Hedgerows Report

January 2022



Water for the North West

Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

Project No: B27070CT
Document Title: Proposed Marl Hill Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 3: Off-Site Highways Works – Hedgerows Report
Document ID: RVBC-MH_SEI-Appendix B7 Annex 3
Revision: 0
Date: January 2022
Client Name: United Utilities
Author: Bowland Ecology Limited

Bowland Ecology Limited
Unit 8, Second Floor
Holmes Mill
Clitheroe
BB7 1EB
Tel: 01200 446 777
E-mail: info@bowlandecology.co.uk


Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, <i>Ecologist</i> Catrin Scott, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR4 Highways Hedgerow Survey Report DRAFT TR4 Highways Hedgerow Survey Report V1	Date:	DRAFT: 10/02/2021 V1: 26/03/2021
2 Project Drawings			
TR4 Highways Hedgerow Plans Proposed Marl Hill Section		BOW167_HARP_9.5_HEDGEROWS_TR4_HIG HWAYS	
3 Ecology Surveys			
Surveyors:	Fiona Shuttle BSc Catrin Scott MRes, BSc Lucy Pocock BSc Helena Davies BSc Sophie King BSc Eve Loxham MBiolSci (Hons)		
Survey date:	08/12/2020, 09/12/2020, 10/12/2020, 14/12/2020, 15/12/2020, 16/12/2020, 13/01/2021, 15/01/2021, 19/01/2021, 05/03/2021, 24/03/2021 Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between July 2019 and May 2020.		
Survey Method:	Hedgerows were assessed in accordance with The Hedgerow Regulations 1997. This report details all hedgerows currently identified in the TR4 Highways survey area, all of which have been subject to full assessment against the Hedgerow Regulations 1997.		
Weather Conditions:	08/12/2020 – Cloud cover (8/8), Beaufort Wind F5 SE, 8 °C, raining 09/12/2020 – Cloud cover (5/8), Beaufort Wind F3 W, 7 °C, no precipitation 10/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SSE, 6 °C, no precipitation 14/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SW, 8 °C, raining 15/12/2020 – Cloud cover (3/8), Beaufort Wind F4 S, 9 °C, no precipitation 16/12/2020 – Cloud cover (5/8), Beaufort Wind F5 S, 9 °C, light rain 13/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NW, 3 °C, moderate rain. 15/01/2021 – Cloud cover (1/8), Beaufort Wind F1 NW, 0 °C, no precipitation 19/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NE, 8 °C, heavy rain 05/03/2021 – Cloud cover (6/8), Beaufort Wind F2 N, 5 °C, dry. 24/03/2021 – Cloud cover (4/8), Beaufort Wind F1-3 N, 9 °C, dry. For weather conditions relating to the Extended Phase 1 Habitat Surveys undertaken in 2019-2020, refer to “TR4 Ecology Survey Data Report: Hedgerow Report V2” (Bowland Ecology, 2020).		

Limitations to the survey:	<p>The survey season for hedgerows is from April to October, with June and July being the most suitable months. Surveys undertaken outside the optimal survey season may be limited by a reduced view of ground floral species and may require re-visiting within the optimal survey season to further establish their importance. If a hedgerow does not classify as important but is likely to classify as important with the inclusion of additional Schedule 2 ground flora species, this is noted in the description.</p> <p>Hedgerows at the survey boundary were viewed from one elevation due to lack of access to the other side.</p>
----------------------------	--


4 Survey Results

TR4.HH1	
---------	---

This roadside hedge is approximately 65 m in length, 1.2 m tall and 0.6 m wide. There are no associated gaps, mature trees or ditches. The dominant woody species is hawthorn (*Crataegus monogyna*), with additional ash (*Fraxinus excelsior*), blackthorn (*Prunus spinosa*) and rose species (*Rosa* sp.; total four woody species). Schedule 2 ground flora species recorded include lady fern (*Athyrium filix-femina*), dog's mercury (*Mercurialis perennis*) and barren strawberry (*Potentilla sterilis*). Additional ground flora species recorded include crosswort (*Cruciata laevipes*), cinquefoil (*Potentilla simplex*), thistle species (*Cirsium* sp), ground ivy (*Glechoma hederacea*) and honeysuckle (*Lonicera periclymenum*). The hedgerow is neatly managed and there is evidence of previous laying. The hedgerow is supported by a bank or wall along at least half of the length. There is a parallel hedgerow within 15 m (TR4.HH2).

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH2	
---------	--

This roadside hedgerow is approximately 400 m long, 1.5 to 2 m tall and 0.5 to 1m wide. There are three associated gaps which account for 5% of the length of the hedgerow. There are eight associated mature trees and there is no associated ditch. The dominant woody species is hawthorn, with additional blackthorn and rose species (total three woody species). Schedule 2 ground flora recorded include lady fern, broad buckler fern (*Dryopteris dilata*), herb Robert (*Geranium robertianum*) and dog's mercury. Additional ground flora recorded includes ivy (*Hedera helix*), lesser celandine (*Ranunculus ficaria*), vetch species (*Vicia* sp.), common nettle (*Urtica dioica*), Yorkshire fog (*Holcus lanatus*), common burdock (*Arctium lappa*), cow parsley (*Anthriscus sylvestris*) and cleavers (*Galium aparine*). The hedgerow is lichen-rich and there is evidence of previous laying. There are two parallel hedgerows within 15 m (TR4.HH1 and TR4.HH3) and it has one connecting hedgerow (TR4.HH12).

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH3



This hedgerow is approximately 120 m long, 1 m tall and 0.5 m wide. There is one associated mature tree. Associated gaps account for 5% of the total length and there is no associated ditch. The dominant species is hawthorn with additional blackthorn and rose species. Schedule 2 groundflora recorded include male fern (*Dryopteris filix-mas*) and dog's mercury. Additional ground flora species include; ribwort plantain (*Plantago lanceolata*), greater plantain (*Plantago major*), ivy, cow parsley, vetch species, common nettle, feather moss species (*Ptilium* spp.), stitchwort species (*Stellaria* sp.) and creeping buttercup (*Ranunculus repens*). A parallel hedgerow is present within 15 m (TR4.HH2). This hedgerow does not connect to other hedgerows.

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH4



This hedgerow is approximately 100 m in length, 1.5 m tall and 0.5-1 m wide. There are three associated gaps accounting for approximately 10% of the hedgerow length. There are three associated mature trees and no associated ditch. The dominant woody species is hawthorn with additional hazel (*Corylus avellana*), ash, blackthorn, rose species and sycamore (*Acer pseudoplatanus*; total five woody species not including sycamore). Schedule 2 ground flora recorded include male fern, wild strawberry (*Fragaria vesca*), herb Robert and dog's mercury. Additional ground flora includes ground ivy, cleavers, cow parsley, feather moss, germander speedwell (*Veronica chamaedrys*), ivy, vetch species and red campion (*Silene dioica*). A parallel hedgerow is present within 15 m (TR4.HH5) and there is one other connecting hedgerow (TR4.HH6).

No Wildlife & Countryside Act protected species have been identified to be present.


This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH5	
---------	---

This hedgerow is approximately 25 m long (within the survey boundary), 1.5 to 2 m tall and 0.6 m wide. There are three gaps which account for approximately 15% of the hedgerow length. There are four associated mature trees and no ditch. The dominant species is hazel with additional hawthorn, ash and rose (total four woody species). Schedule 2 ground flora recorded include male fern, sweet woodruff (*Galium odoratum*), herb Robert and dog's mercury. Additional groundflora includes ground ivy, creeping buttercup, vetch species, Yorkshire fog and broadleaved dock (*Rumex obtusifolius*). A parallel hedgerow is present within 15 m (TR4.HH4).

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH6	
---------	--

This hedgerow is approximately 60 m long, 1.5 to 2 m tall and 0.5 m wide. There are three associated gaps accounting for approximately 15% of the length of the hedgerow. There are no associated mature trees or ditch. The dominant woody species is hawthorn with additional blackthorn (total two woody species). Schedule 2 ground flora were not recorded. Additional ground flora species include meadow grass species (*Poa* sp.), perennial rye grass (*Lolium perenne*) and common nettle. There are no connection points or other parallel hedgerows.

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.



TR4.HH7	
---------	--



This hedgerow is approximately 490 m in length, 1.5 to 2 m tall and 1 m wide. There are 13 associated mature trees and no associated gaps or ditches. The dominant woody species is hawthorn with additional alder (*Alnus glutinosa*), hazel, ash, blackthorn, rose species and sycamore (total six woody species excluding sycamore). Schedule 2 ground flora recorded include male fern, wood avens (*Geum urbanum*) and dog's mercury. Additional ground flora includes common hogweed (*Heracleum sphondylium*), lesser celandine, common sorrel (*Rumex acetosa*), dog rose (*Rosa canina*), cow parsley, meadowsweet (*Filipendula ulmaris*), crosswort, feather moss, germander speedwell, ground ivy, Yorkshire fog, red campion, colt's foot (*Tuffilago farfara*), lady's mantle (*Alchemilla vulgaris*), ribwort plantain, creeping thistle (*Cirsium arvense*), common knapweed (*Centaurea nigra*) and silverweed (*Argentina anserina*). There is a parallel hedgerow within 15 m (TR4.HH9 and TR4.HH10) and this hedgerow connects to one other (TR4.HH8). A rabbit (*Oryctolagus cuniculus*) burrow was noted within the hedgerow.



No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH8	
---------	--

<p>This hedgerow is approximately 45 m long, 4-5 m tall and 3 m wide. There are no associated gaps and there are three associated mature trees. A ditch is present on the northern elevation (TR4.HWC27). The dominant species is hawthorn with additional alder noted (total two woody species). Schedule 2 ground flora species present include lady fern. Additional ground flora species include creeping buttercup, soft rush, common nettle and brooklime (<i>Veronica beccabunga</i>). There is one connecting hedgerow (TR4.HH7).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.HH9</p>	
<p>This hedgerow is approximately 200 m long, 1.5-2 m tall and 1 m wide. There are eight associated gaps which account for 25% of the hedgerow length. There are three mature associated trees and no ditch. The dominant woody species is hawthorn with additional alder, hazel, ash and blackthorn (total five woody species). Schedule 2 ground flora recorded include dog's mercury and wood avens. Additional ground flora includes common sorrel. There is a parallel hedgerow within 15 m (TR4.HH7) and an additional hedgerow is directly connected (TR4.HH10).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.HH10</p>	
<p>This hedgerow is approximately 250 m long, 1 to 1.5 m tall and 1 m wide. There are no associated gaps, trees or ditches. The dominant woody species is hawthorn with additional ash and blackthorn (total three woody species). Schedule 2 ground flora recorded include broad buckler fern, male fern, sweet woodruff, wood avens and dog's mercury. Additional ground flora includes feather moss species, bramble (<i>Rubus fruticosus agg.</i>), common nettle, creeping thistle, red campion, crosswort, black knapweed, common daisy (<i>Bellis perennis</i>), ground ivy, ivy, lesser celandine, coltsfoot, and spear thistle (<i>Cirsium vulgare</i>).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR4.HH11	
<p>This hedgerow is approximately 80 m long, 1.5 m tall and 1 m wide. There are no associated gaps or ditches. There is one associated mature tree. The dominant woody species is hawthorn, with additional beech (<i>Fagus sylvatica</i>), ash, holly, blackthorn, pedunculate oak (<i>Quercus robur</i>), rose species and sycamore (total woody species excluding sycamore is seven). Schedule 2 ground flora species include lady fern and dog's mercury. Additional ground flora species include common nettle, creeping buttercup, meadowsweet, cow parsley and ivy. There is a parallel hedgerow within 15 m and there are two connecting hedgerows. An disused birds nest was observed within the hedgerow.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH12	
<p>This hedgerow is approximately 80 m long, 1.5 m tall and 0.5 – 1 m wide. There are no associated gaps, mature trees or ditches. The dominant woody species is hawthorn with additional hazel, blackthorn and rose species (total woody species is four). Schedule 2 ground flora species include broadbuckler fern and dog's mercury. Additional ground flora species include ivy, creeping buttercup and meadowsweet. There is a parallel hedgerow within 15 m and there is a connection to one other hedgerow.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH13	No photo.
<p>This hedgerow is approximately 300 m long, 1.6 m tall and 1.5 m wide. There are two gaps which account for approximately 5% of the hedgerow length and there are 13 associated mature trees. There is no associated ditch. The dominant woody species is hawthorn with additional alder, hazel, ash, holly, rose and sycamore (total woody species excluding sycamore is six). Schedule 2 ground flora recorded include male fern and dog's mercury. Additional ground flora species include reed canary grass (<i>Phalaris arundinacea</i>), ivy, vetch species, common hogweed and cow parsley. The hedgerow connects to one other hedgerow and a woodland.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR4.HH14	
<p>This hedgerow is approximately 490 m in length, 4 m tall and 2 to 3 m wide. Gaps account for approximately 8% of the hedgerow length and there are seven associated mature trees. There is no associated ditch. The dominant woody species is hawthorn with additional alder, silver birch (<i>Betula pendula</i>), hazel, beech, ash, holly, crab apple (<i>Malus sylvestris</i>), blackthorn, rose species, elm species (<i>Ulmus</i> sp.), guelder rose (<i>Viburnum opulus</i>), sycamore and sessile oak (<i>Quercus petraea</i>) (total woody species excluding sycamore is thirteen). Schedule 2 groundflora species recorded include male fern, herb Robert, wood avens and dog's mercury. Additional groundflora species includes bramble, feather moss, creeping buttercup, common hogweed, Yorkshire fog, coltsfoot, red campion, bracken (<i>Pteridium aquilinum</i>), yarrow (<i>Achillea millefolium</i>), reed canary grass and Himalayan balsam (<i>Impatiens glandulifera</i>). Himalayan balsam is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Signs of small mammal holes were identified beneath large oak trees. There is a parallel hedgerow within 15 m and there is a connection to two other hedgerows (not surveyed).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH15	No photo.
<p>This hedgerow is approximately 80 m in length, 2 m tall and 1 m wide. There are no associated gaps, mature trees or ditches. There is no dominant woody species; hawthorn and blackthorn are both abundant. Additional woody species include hazel, beech and rose species (total six woody species). Schedule 2 ground flora include harts tongue fern (<i>Phyllitis scolopendrium</i>), herb Robert and dog's mercury. Additional ground flora species include snowberry (<i>Symphoricarpos albus</i>), oxeye daisy (<i>Leucanthemum vulgare</i>) and honeysuckle. There is a wall beneath the hedge and in these locations the groundflora is absent. There are guards present around some of the trees suggesting it is a young hedgerow, therefore less than 30 years in age or infill planting has been undertaken to fill in the gaps within the hedgerow. The hedgerow connects to one other hedgerow and is parallel to another within 15 m.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH16	

This hedgerow is approximately 320 m in length, 1 to 2 m tall and 1 to 2 m wide. Gaps account for approximately 2% of the hedgerow length and there are two associated mature trees. There is no associated ditch. The dominant woody species is hawthorn with additional hazel, beech, ash, holly, wild privet (*Ligustrum vulgare*), blackthorn, pedunculate oak, rose species, elder (*Sambucus nigra*), elm and sycamore (total eleven woody species excluding sycamore). Schedule 2 ground flora species include broad buckler fern, male fern, sweet woodruff, wood avens, herb Robert, lords-and-ladies (*Arum maculatum*), wild garlic (*Allium ursinum*) and dog's mercury. Additional ground flora species include red campion, snowberry and ground ivy. The is parallel to two other hedgerows (TR4.HH15 and TR4.HH14).

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH17



This hedgerow is approximately 44 m in length, 1 m tall and 0.5 m wide. There are no gaps, associated mature trees or a ditch. The dominant woody species is hawthorn with additional hazel, rose species, sycamore and oak species (total four woody species, excluding sycamore). Schedule 2 ground flora species include lords and ladies, wood avens and dog's mercury. Additional ground flora species include ivy and bramble. This hedgerow connects to a broadleaved woodland and is parallel to one other hedgerow (TR4.HH18). This hedgerow is well established and show signs of being previously laid. The hedgerow is supported by a bank or wall along at least half of its length.

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH18



This hedgerow is approximately 230 m in length, 2.5 m tall and 0.75 m wide. There are no associated gaps or ditches and four associated mature trees. The dominant woody species is hawthorn, additional species include beech, ash and holly (total four woody species). Schedule 2 ground flora species include wood avens and dog's mercury. Additional ground flora species include creeping buttercup, ivy, Yorkshire fog, lesser celandine and common hogweed. This hedgerow connects to a coniferous plantation woodland (TN4.HTN59) and is parallel to one other hedgerow (TN4.HH17). A disused bird nest was observed within the hedgerow.

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH19



This hedgerow is approximately 120 m in length, 1.5 m tall and 1.5 m wide. There are no associated gaps, mature trees or ditches. The dominant woody species is hawthorn, additional species include ash, elder, lime sp. (*Tilia* sp.) and sycamore (total of four woody species excluding sycamore). Schedule 2 ground flora species includes dog's mercury. Additional ground flora species include creeping buttercup, ivy and lesser celandine. This hedgerow connects to a broadleaved woodland and one other hedgerow (TR4.HH21), and is parallel to one other hedgerow (TR4.HH20).

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.


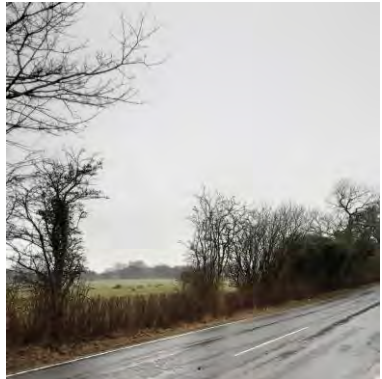
TR4.HH20







This hedgerow is approximately 75 m in length, 2 m tall and 1.5 m wide. There are no associated gaps or ditches and two associated mature trees. The dominant woody species is lime sp., additional species include hawthorn, holly, wild privet, rose sp. and sycamore (total of five woody species excluding sycamore). Schedule 2 ground flora species include lady fern, wood avens and dog's mercury. Additional ground flora species include fern sp., cleavers, ivy, common nettle, hedge mustard (*Sisymbrium officinale*), bramble and cock's foot (*Dactylus glomerata*). This hedgerow connects to a broadleaved woodland and there is a parallel hedgerow within 15 m (TR4.HH19).



No Wildlife & Countryside Act protected species have been identified to be present.




This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.



<p>TR4.HH21</p>	
<p>This Hedgerow is approximately 245 m in length, 1 m tall and 0.5 m wide. Gaps account for approximately 2% of the hedgerow length and there is one associated mature tree. There is no associated ditch. The dominant woody species is hawthorn, additional species include beech, rose sp., elm sp., and lime sp. (total five woody species). Schedule 2 ground flora species include wood avens, dog's mercury and wood anemone (<i>Anemone nemorosa</i>). Additional ground flora species include ivy, tufted hairgrass (<i>Deschampsia cespitosa</i>), yarrow, lesser celandine, common hogweed, bramble and creeping buttercup. The hedgerow connects to one other hedgerow (TR4.HH19) and there is a parallel hedgerow within 15 m (TR4.HH22).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.HH22</p>	
<p>This hedgerow is approximately 185 m in length, 1 to 4 m tall and 1 m wide. There are no associated gaps or ditches and four associated mature trees. The dominant woody species is hawthorn, additional species include ash, holly, rose sp., oak sp., lime sp., and sycamore (total of six woody species excluding sycamore). Schedule 2 ground flora species includes dog's mercury. Additional ground flora species include hedge mustard, ivy, common nettle and bramble. The hedgerow connects to a broadleaved woodland. There are three parallel hedgerows within 15 m (TR4.HH14, TR4.HH15 and TR4.HH21).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR4.HH23	No photo.
<p>This hedgerow is approximately 90 m in length, 1.5 m tall and 1 m wide. There are no associated gaps or ditches and three associated mature trees. The dominant woody species is blackthorn, additional species include hawthorn, ash, rose sp., and elder (total of five woody species). Schedule 2 groundflora species include wood avens and dog's mercury. Additional groundflora species include ivy and creeping buttercup. The hedgerow connects to two other hedgerows and an area of broadleaved woodland and there is a parallel hedgerow within 15 m (TR4.HH24).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH24	
<p>This hedgerow is approximately 100 m in length, 1.5 m tall and 0.75 m wide. There are no associated gaps or ditches and three associated mature trees. There is no dominant woody species; hawthorn and blackthorn are both abundant. Additional woody species include holly, rose sp., elder, elm sp., lime sp. and sycamore (total of seven species excluding sycamore). Schedule 2 ground flora species include lady fern, wood avens and dog's mercury. Additional ground flora species include ivy, bramble and cock's foot. The hedgerow connects to two other hedgerows and there is a parallel hedgerow within 15 m (TR4.HH23). No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH25	
<p>This hedgerow is approximately 82 m in length, 2 m tall and 0.75 m wide. There are no associated gaps or trees. A wet ditch runs along the eastern elevation. The dominant woody species is blackthorn, additional species include hazel, holly, elder and sycamore (total of four species excluding sycamore). Schedule 2 ground flora species include lord-and-ladies, wood avens and dog's mercury. Additional ground flora species include ivy, common nettle and daffodil (<i>Narcissus pseudonarcissus</i>). The hedgerow connects to two other hedgerows.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

<p>TR4.HH26</p>	
<p>This hedgerow is approximately 108 m in length, 0.75 m tall and 1 m wide. There are no associated gaps or ditches and one associated mature tree. The dominant woody species is hawthorn, additional species include hornbeam and lime sp. (total of three species). Schedule 2 ground flora species include primrose (<i>Primula vulgaris</i>) and wood avens. Additional ground flora species include creeping buttercup, ivy and herb Robert. The hedgerow connects to an area of broadleaved woodland.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.HH27</p>	
<p>This hedgerow is approximately 53 m in length, 1.5 m tall and 0.75 m wide. There are no associated gaps, ditches or mature trees. The dominant woody species is blackthorn, additional species include hawthorn, holly, elder and elm sp. (total five species). Schedule 2 ground flora species include wood avens and dog's mercury. Additional ground flora species includes ivy. There is a parallel hedgerow within 15 m (TR4.HH28).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

<p>TR4.HH28</p>	
<p>This hedgerow is approximately 195 m in length, 2 m tall and 0.75 m wide. There are no associated gaps or ditches and seven associated mature trees. The dominant woody species is hawthorn, additional species include beech, ash, blackthorn, elder, elm sp., oak sp. and sycamore (total of seven species excluding sycamore). Schedule 2 ground flora species include lord-and-ladies, wood avens and dog's mercury. Additional ground flora species include ivy and bramble. The hedgerow connects to a broadleaved woodland (TN4.HTN60). There is a parallel hedgerow within 15 m (TR4.HH27).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
<p>TR4.HH29</p>	
<p>This hedgerow is approximately 65 m in length, 2 m tall and 1 m wide. There are no associated gaps, ditches or trees. A wall supports the hedgerow along at least half its length. The dominant woody species is hawthorn, additional species include holly, rose sp., elder, elm sp. and sycamore (total of five species excluding sycamore). Schedule 2 ground flora species includes dog's mercury. Additional ground flora species include ivy, bramble and ground elder (<i>Aegopodium podagraria</i>). The hedgerow connects to a broadleaved woodland (TR4.HTN61) and one other hedgerow.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	

TR4.HH30		
<p>This hedgerow is approximately 102 m in length, 2 m tall and 1.5 m wide. There are no associated gaps or ditches and two associated mature trees. A bank supports the hedgerow along at least half of its length. There is no dominant woody species; hawthorn, blackthorn and sycamore are all frequent. Additional species include ash, rose sp., elder and elm sp. (total of six species excluding sycamore). Schedule 2 ground flora species include lords-and-ladies, wood avens and dog's mercury. Additional ground flora species include ivy and bramble. The hedgerow connects to a broadleaved woodland (TR4.HTN64) and there is a parallel hedgerow within 15 m (TR4.HH31).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>		
TR4.HH31		
<p>This hedgerow is approximately 107 m in length, 5 m tall and 2 m wide. There are no associated gaps, ditches or mature trees. A bank supports the hedgerow along at least half of its length. The dominant woody species is hawthorn, additional species include beech, ash, blackthorn, willow species (<i>Salix</i> sp.), elder, elm sp. and sycamore (total of seven species excluding sycamore). Schedule 2 ground flora species include lady fern, wood avens and dog's mercury. Additional ground flora species include coltsfoot, creeping buttercup, ivy and bramble. The hedgerow connects to two broadleaved woodlands (TR4.HTN65 and TR4.HTN67) and one other hedgerow. There is a parallel hedgerow within 15 m (TR4.HH30).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>		
TR4.HH32		

<p>This hedgerow is approximately 36 m in length, 3 m tall and 1 m wide. Gaps account for approximately 40% of the hedgerow length. There are no associated ditches or mature trees. The dominant woody species is hawthorn, additional species include hazel, ash and blackthorn (total of three species). Schedule 2 ground flora species include harts tongue fern. Additional ground flora species include ivy, bramble and common nettle. The hedgerow connects to a broadleaved woodland (TR4.HTN72) and there is a parallel hedgerow within 15 m (TR4.HH33).</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH33	
<p>This hedgerow is approximately 97 m in length, 1.5 m tall and 1 m wide. There are no associated gaps, ditches or mature trees. The dominant woody species is hawthorn, additional species include ash, blackthorn, rose sp., elder and elm sp. (total of six species). No schedule 2 ground flora species were recorded. Ground flora species include ivy and bramble. The hedgerow connects to a broadleaved woodland (TR4.HTN73) and there is a parallel hedgerow within 15 m (TR4.HH32). The hedgerow is situated at the edge of a broadleaved woodland.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH34	No photo.
<p>This hedgerow is approximately 86 m in length, 1.5 m tall and 1.5 m wide. There are no associated gaps. There are three associated mature trees and a wet ditch on the west and southern elevations. There is no dominant woody species, however, blackthorn is abundant and hawthorn is frequent. Additional woody species include ash and rose species (total of four woody species). No schedule 2 ground flora were recorded. Additional ground flora species recorded include reed canary grass, common nettle, brooklime, white clover and creeping buttercup. The hedgerow connects to one other hedgerow.</p> <p>No Wildlife & Countryside Act protected species have been identified to be present.</p> <p>The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</p>	
TR4.HH35	

This hedgerow is approximately 300 m in length, 2 m tall and 1.5 m wide. There are several gaps amounting to approximately 3% of the hedgerow length. There are 19 associated mature trees and a small section of stream along part of the length (TR4.HWC30). The dominant species are beech and holly, with additional species including alder, hazel, hawthorn, ash and blackthorn (total of seven woody species). No schedule 2 ground flora species were recorded. Additional ground flora species recorded include tufted hair grass, ivy, thistle and fern species. The hedgerow connects to one other hedgerow (TR4.HH13) and connects to a woodland to the north. Overall the hedgerow appears well established although there is some planting to fill in gaps.

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH36



This hedgerow is approximately 144 m in length, 1 m tall and 0.75 m wide. There are three associated gaps accounting for approximately 5% of the total length. There are no associated mature trees or ditches. The dominant woody species is blackthorn with additional hawthorn, beech, ash and holly (total of five woody species). Schedule 2 ground flora recorded include lords-and-ladies, lady fern, wood avens and herb Robert. Additional ground flora recorded includes ivy, common nettle, lesser celandine, snowdrops (*Galanthus nivalis*), tufted hairgrass and Himalayan balsam. Himalayan balsam is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The hedgerow has previously been laid, felled and topped. The hedgerow is along the western boundary of a woodland.

No Wildlife & Countryside Act protected species have been identified to be present.

The hedgerow does not classify under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

TR4.HH37



This hedgerow is approximately 49 m in length, 1 m tall and 2 m wide. There are three associated gaps accounting for approximately 10% of the hedgerow length. There are three associated mature trees and no ditch. The dominant woody species is blackthorn with additional beech, holly, rose species, willow species and elder (total of six woody species). Schedule 2 ground flora species recorded include lady fern, herb Robert and wood avens. Additional ground flora recorded include common nettle, common mouse ear (*Cerastium fontanum*), cow parsley, Yorkshire fog, cleavers, garlic mustard (*Alliaria petiolata*) and ground elder.

No Wildlife & Countryside Act protected species have been identified to be present.

This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.

5 Hedgerow Summary

Of the 37 hedgerows surveyed, a total of 22 are classified as Important under ecological criteria in accordance with The Hedgerow Regulations 1997. These include; TR4.HH1, 4, 5, 7, 11, 12, 13, 14, 16, 17, 18, 20, 22, 23, 24, 25, 28, 29, 30, 31, 33 and 37.

The most frequently recorded dominant woody species is hawthorn, which accounts for 28 hedgerows, followed by blackthorn, hazel, lime species, sycamore, beech and holly. The hedgerows were surveyed out of season for the Schedule 2 ground flora, however, several species were encountered, particularly in surveys undertaken in March, including lady fern, dog's mercury, barren strawberry, broadbuckler fern, herb Robert, male fern, wild strawberry, sweet woodruff, wood avens, harts tongue fern, lords-and-ladies, primrose, wood anemone and wild garlic.

Himalayan balsam, a Schedule 9 listed invasive plant of the Wildlife and Countryside Act 1981 (as amended), was noted within the ground flora of two hedgerows; TR4.HH14 and 36.

The hedgerows provide bird nesting habitat and commuting routes for bats. The base of the hedgerows also provide refuges for small mammals and amphibians.

Hedgerows are listed as a Habitat of Principal Importance under the Natural Environment and Rural Communities Act, 2006.

References

Bowland Ecology. (2020). *TR4 Ecology Survey Data Report: Hedgerow survey report V2*.



**Haweswater Aqueduct Resilience Programme -
Proposed Marl Hill Section
Supplementary Environmental Information**

Appendix B7: Annex 4

Off-Site Highways Works – Bat Tree Report

January 2022



Proposed Marl Hill Section

Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

Project No: B27070CT
Document Title: Proposed Marl Hill Section
Supplementary Environmental Information (SEI)
Appendix B7 Annex 4: Off-Site Highways Works – Bat Tree Report
Document ID: RVBC-MH_SEI-Appendix B7 Annex 4
Revision: 0
Date: January 2022
Client Name: United Utilities
Author: Bowland Ecology Limited

Bowland Ecology Limited
Unit 8, Second Floor
Holmes Mill
Clitheroe
BB7 1EB
Tel: 01200 446 777
E-mail: info@bowlandecology.co.uk

Document history and status


Revision	Date	Description	Author	Checked	Reviewed	Approved

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, <i>Ecologist</i> Catrin Scott, <i>Ecologist</i>	Approved:	Alice Helyar, <i>Principal Ecologist</i>
Report reference:	TR4 Highways Bat Tree Assessment Report DRAFT TR4 Highways Bat Tree Assessment Report V1	Date:	DRAFT: 10/02/2021 V1: 26/03/2021
2 Project Drawings			
Bat Risk Trees and Tree Groups TR4 Highways Proposed Marl Hill Section		BOW167_HARP_9.5_BATS_TR4_HIGHWAYS	
3 Ecology Surveys			
Surveyors:	Fiona Shuttle BSc Catrin Scott MRes, BSc Lucy Pocock BSc Helena Davies BSc Sophie King BSc Eve Loxham MBiolSci (Hons)		
Survey date(s):	08/12/2020, 09/12/2020, 10/12/2020, 14/12/2020, 15/12/2020, 16/12/2020, 13/01/2021, 15/01/2021, 19/01/2021, 05/03/2021, 24/03/2021 Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between July 2019 and May 2020.		
Survey Method:	<p>This report details all trees currently identified in TR4 Highways survey area, all of which have been subject to full assessment in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) (Collins, 2016). A preliminary ground level assessment to identify trees supporting Potential Roosting Features (PRF's) was undertaken during the extended Phase 1 habitat survey. The assessment was aided by close focus binoculars and high-powered torches. All trees were assigned a unique reference number and their locations marked on a plan.</p> <p>Any evidence of bat usage and all PRF's visible from ground level were recorded for future reference, including their approximate height and orientation of access points. Representative photographs were taken and the tree species recorded. Where numerous trees within a group, such as a woodland or tree line were noted to have bat roosting potential, these were assessed as a group.</p> <p>Trees or groups of trees were classified as Low, Moderate or High suitability as bat roosting habitat (groups classified according to the highest potential tree) in accordance with Table 4.1 (Page 35) of The Good Practice Guidelines, summarised as follows:</p> <p>Low – A tree of sufficient size and age to contain PRFs but none seen from the ground, or features seen with only very limited roosting potential.</p> <p>Moderate – A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitats but unlikely to support a roost of high conservation status.</p> <p>High – A tree with one or more PRFs, that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.</p>		




<p>Weather Conditions:</p>	<p>08/12/2020 – Cloud cover (8/8), Beaufort Wind F5 SE, 8 °C, raining 09/12/2020 – Cloud cover (5/8), Beaufort Wind F3 W, 7 °C, no precipitation 10/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SSE, 6 °C, no precipitation 14/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SW, 8 °C, raining 15/12/2020 – Cloud cover (3/8), Beaufort Wind F4 S, 9 °C, no precipitation 16/12/2020 – Cloud cover (5/8), Beaufort Wind F5 S, 9 °C, light rain 13/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NW, 3 °C, moderate rain. 15/01/2021 – Cloud cover (1/8), Beaufort Wind F1 NW, 0 °C, no precipitation 19/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NE, 8 °C, heavy rain 05/03/2021 – Cloud cover (6/8), Beaufort Wind F2 N, 5 °C, dry. 24/03/2021 – Cloud cover (4/8), Beaufort Wind F1-3 N, 9 °C, dry.</p> <p>For weather conditions relating to the Extended Phase 1 Habitat Surveys undertaken in 2019-2020, refer to “TR4 Ecology Survey Data Report: Bat Tree Report V2” (Bowland Ecology, 2020).</p>
<p>Limitations to the survey:</p>	<p>Trees at the boundary of the survey area and adjacent to large watercourses were assessed from one side only due to lack of access on the other. Further surveys may be required to establish the presence of bat roosts.</p>




4 Survey Results




Individual Trees




<p>TR4.BT34</p>	
	<p>NGR: SD 72251 45131 Species: Oak species (<i>Quercus</i> sp.) Categorisation: Low potential</p>




<p>TR4.HBT1</p>	
	<p>NGR: SD 70402 49244 Species: Ash (<i>Fraxinus excelsior</i>) Categorisation: Moderate potential</p>




TR4.HBT2	
	<p>NGR: SD 70337 49394 Species: Ash Categorisation: Low potential</p>
TR4.HBT3	
	<p>NGR: SD 70407 49233 Species: Ash Categorisation: Moderate potential</p>
TR4.HBT4	
	<p>NGR: SD 70352 49531 Species: Sycamore (<i>Acer pseudoplatanus</i>) Categorisation: Low potential</p>

TR4.HBT5	
	<p>NGR: SD 70315 49787</p> <p>Species: Sycamore</p> <p>Categorisation: Low potential</p>
TR4.HBT6	
	<p>NGR: SD 70324 49792</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR4.HBT7	
	<p>NGR: SD 70330 49799</p> <p>Species: Ash</p> <p>Categorisation: Moderate potential</p>



<p>TR4.HBT8</p> 	<p>NGR: SD 70110 50014 Species: Alder (<i>Alnus glutinosa</i>) Categorisation: Moderate potential</p>
<p>TR4.HBT9</p> 	<p>NGR: SD 70060 50097 Species: Beech (<i>Fagus sylvatica</i>) Categorisation: Low potential</p>
<p>TR4.HBT10</p> 	<p>NGR: SD 70004 50143 Species: Ash Categorisation: Moderate potential</p>

<p>TR4.HBT11</p> 	<p>NGR: SD 70071 50058 Species: Ash Categorisation: Moderate potential</p>
<p>TR4.HBT12</p> 	<p>NGR: SD 70202 49669 Species: Ash Categorisation: Low potential</p>
<p>TR4.HBT13</p> 	<p>NGR: SD 70539 48992 Species: Ash Categorisation: Moderate potential</p>

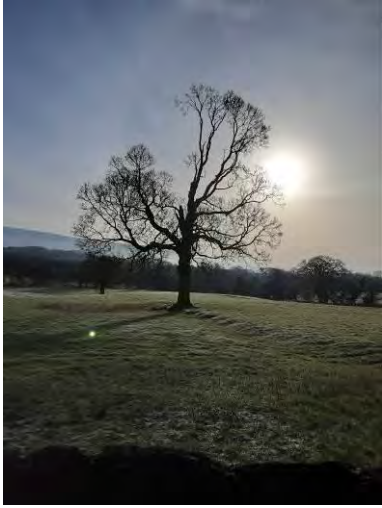


TR4.HBT14	
	<p>NGR: SD 70475 48790 Species: Alder Categorisation: Low potential</p>
TR4.HBT15	
	<p>NGR: SD 70463 48764 Species: Ash Categorisation: Moderate potential</p>
TR4.HBT16	
	<p>NGR: SD 70486 49007 Species: Ash Categorisation: Low potential</p>




TR4.HBT17	
	<p>NGR: SD 72222 45511 Species: Ash Categorisation: Low potential</p>
TR4.HBT18	
	<p>NGR: SD 72235 45535 Species: Oak species Categorisation: Moderate potential</p>
TR4.HBT19	
	<p>NGR: SD 72249 45447 Species: Elm species (<i>Ulmus</i> sp.) Categorisation: Low potential</p>




TR4.HBT20	
	<p>NGR: SD 72256 45405 Species: Ash Categorisation: Low potential</p>
TR4.HBT21	
	<p>NGR: SD 72259 45358 Species: Ash Categorisation: Low potential</p>
TR4.HBT22	
<p>No photo.</p>	<p>NGR: SD 72263 45129 Species: Alder Categorisation: Low potential</p>




TR4.HBT23	
	<p>NGR: SD 72324 44891 Species: Oak species Categorisation: Low potential</p>
TR4.HBT24	
<p>No photo.</p>	<p>NGR: SD 70160 50114 Species: Ash Categorisation: Moderate potential</p>
TR4.HBT25	
	<p>NGR: SD 72576 44083 Species: Sycamore Categorisation: Moderate potential</p>




TR4.HBT26	
	<p>NGR: SD 72447 44254 Species: Oak species Categorisation: Low potential</p>
TR4.HBT27	
	<p>NGR: SD 74682 44706 Species: Oak species Categorisation: Low potential</p>
TR4.HBT28	
	<p>NGR: SD 75557 45003 Species: Sycamore Categorisation: Moderate potential</p>




TR4.HBT29	
	<p>NGR: SD 75591 44982</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR4.HBT30	
	<p>NGR: SD 76056 44928</p> <p>Species: Ash</p> <p>Categorisation: Moderate potential</p>
TR4.HBT31	
	<p>NGR: SD 76464 44705</p> <p>Species: Sycamore</p> <p>Categorisation: Moderate potential</p>




TR4.HBT32	
	<p>NGR: SD 70489 48903</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
Groups	
TR4.HBG1	
	<p>NGR: SD 70407 49158</p> <p>Species: Willow species (<i>Salix</i> sp.), sycamore, holly (<i>Ilex aquifolium</i>), beech, alder, oak species, hawthorn (<i>Crataegus monogyna</i>), pine species (<i>Pinus</i> sp.) and fir species (<i>Abies</i> sp.).</p> <p>Number of trees: over 50</p> <p>Categorisation: Moderate potential</p>
TR4.HBG2	
	<p>NGR: SD 70268 49735</p> <p>Species: Ash and beech</p> <p>Number of trees: 4</p> <p>Categorisation: Low potential</p>

TR4.HBG3	
	<p>NGR: SD 70330 49813</p> <p>Species: Ash</p> <p>Number of trees: 2</p> <p>Categorisation: Moderate potential</p>
TR4.HBG4	
	<p>NGR: SD 70007 50153</p> <p>Species: Ash and beech</p> <p>Number of trees: 7</p> <p>Categorisation: Moderate potential</p>
TR4.HBG5	
	<p>NGR: SD 70262 49712</p> <p>Species: Ash and beech</p> <p>Number of trees: 4</p> <p>Categorisation: High potential</p>



<p>TR4.HBG6</p> 	<p>NGR: SD 70477 49106</p> <p>Species: Ash, sessile oak (<i>Quercus petraea</i>), sycamore and beech</p> <p>Number of trees: over 50</p> <p>Categorisation: High potential</p>
<p>TR4.HBG7</p> 	<p>NGR: SD 70511 48857</p> <p>Species: Beech, alder, ash and chestnut species (<i>Castanea</i> sp.)</p> <p>Number of trees: over 20</p> <p>Categorisation: Moderate potential</p>
<p>TR4.HBG8</p> 	<p>NGR: SD 70490 48982</p> <p>Species: Ash and alder</p> <p>Number of trees: 3</p> <p>Categorisation: Low potential</p>




TR4.HBG9	
	<p>NGR: SD 70489 48945 Species: Alder Number of trees: 4 Categorisation: Moderate potential</p>
TR4.HBG10	
	<p>NGR: SD 70490 48922 Species: Alder Number of trees: 5 Categorisation: Moderate potential</p>
TR4.HBG11	
	<p>NGR: SD 70490 48876 Species: Sycamore Number of trees: 2 Categorisation: Moderate potential</p>

TR4.HBG12	
	<p>NGR: SD 72211 45583</p> <p>Species: Scots pine (<i>Pinus sylvestris</i>), oak species, alder and beech</p> <p>Number of trees: 7</p> <p>Categorisation: Moderate potential</p>
TR4.HBG13	
	<p>NGR: SD 72243 45395</p> <p>Species: Beech, oak species, alder, conifer species, Scots pine, sycamore, sweet chestnut (<i>Castanea sativa</i>) and silver birch (<i>Betula pendula</i>)</p> <p>Number of trees: Approximately 20</p> <p>Categorisation: Low potential</p>
TR4.HBG14	
	<p>NGR: SD 72556 44151</p> <p>Species: Beech, ash, oak species and alder</p> <p>Number of trees: over 50</p> <p>Categorisation: Moderate potential</p>

<p>TR4.HBG15</p> 	<p>NGR: SD 72457 44265 Species: Sycamore and ash Number of trees: 4 Categorisation: Moderate potential</p>
<p>TR4.HBG16</p> 	<p>NGR: SD 72414 44326 Species: Ash, sycamore and alder Number of trees: 8 Categorisation: Moderate potential</p>
<p>TR4.HBG17</p> 	<p>NGR: SD 72399 44394 Species: Sycamore Number of trees: 3 Categorisation: Low potential</p>



TR4.HBG18	
	<p>NGR: SD 72365 44760</p> <p>Species: Oak species, ash and sycamore</p> <p>Number of trees: 20</p> <p>Categorisation: Moderate potential</p>
TR4.HBG19	
	<p>NGR: SD 72348 44725</p> <p>Species: Oak species and ash</p> <p>Number of trees: 4</p> <p>Categorisation: Moderate potential</p>
TR4.HBG20	
	<p>NGR: SD 74657 44742</p> <p>Species: Beech and horse chestnut</p> <p>Number of trees: 2</p> <p>Categorisation: Low potential</p>

TR4.HBG21	
	<p>NGR: SD 74650 44765 Species: Holly Number of trees: 2 Categorisation: Low potential</p>
TR4.HBG22	
<p>No photograph</p>	<p>NGR: SD 75378 44987 Species: Alder, ash and beech Number of trees: over 20 Categorisation: Moderate potential</p>
TR4.HBG23	
	<p>NGR: SD 75437 44958 Species: Beech and elm Number of trees: 4 Categorisation: Low potential</p>



TR4.HBG24	
	<p>NGR: SD 75477 44943 Species: Oak species Number of trees: 2 Categorisation: Moderate potential</p>
TR4.HBG25	
	<p>NGR: SD 75510 44995 Species: Ash Number of trees: 7 Categorisation: Moderate potential</p>
TR4.HBG26	
	<p>NGR: SD 75928 45157 Species: Oak species, ash and willow species Number of trees: over 20 Categorisation: Moderate potential</p>

TR4.HBG27	
	<p>NGR: SD 76021 44999 Species: Ash and oak species Number of trees: 10 Categorisation: Low potential</p>
TR4.HBG28	
	<p>NGR: SD 76134 44866 Species: Sycamore Number of trees: 2 Categorisation: Moderate potential</p>
TR4.HBG29	
	<p>NGR: SD 76186 44867 Species: Willow species and alder Number of trees: 30 Categorisation: Moderate potential</p>

TR4.HBG30	
	<p>NGR: SD 76258 44773 Species: Ash Number of trees: 2 Categorisation: Moderate potential</p>
TR4.HBG31	
	<p>NGR: SD 76437 44650 Species: Oak species Number of trees: 4 Categorisation: Moderate potential</p>
TR4.HBG32	
	<p>NGR: SD 76805 44212 Species: Willow species, sycamore and ash Number of trees: 20 Categorisation: Low potential</p>

TR4.HBG33	
No photo,	<p>NGR: SD 75660 43200</p> <p>Species: Beech</p> <p>Number of trees: 2</p> <p>Categorisation: Moderate potential</p>
TR4.HBG34	
	<p>NGR: SD 75622 43073</p> <p>Species: Ash and beech</p> <p>Number of trees: 30</p> <p>Categorisation: Moderate potential</p>
TR4.HBG35	
No photo.	<p>NGR: SD 70238 49934</p> <p>Species: Ash and sycamore</p> <p>Number of trees: 4</p> <p>Categorisation: Low potential</p>
TR4.HBG36	
	<p>NGR: SD 70225 49739</p> <p>Species: Ash, sycamore and beech</p> <p>Number of trees: Approximately 20</p> <p>Categorisation: Low potential</p>

TR4.HBG37	
	<p>NGR: SD 70362 49707</p> <p>Species: Ash, sycamore and alder</p> <p>Number of trees: 20</p> <p>Categorisation: Moderate potential</p>
TR4.HBG38	
	<p>NGR: SD 70316 49398</p> <p>Species: Alder and ash</p> <p>Number of trees: 3</p> <p>Categorisation: Moderate potential</p>
TR4.HBG39	
<p>No photo.</p>	<p>NGR: SD 70425 49382</p> <p>Species: Sycamore, ash, oak species and alder</p> <p>Number of trees: 20</p> <p>Categorisation: Moderate potential</p>
TR4.HBG40	
<p>No photo.</p>	<p>NGR: SD 70372 49083</p> <p>Species: Ash and alder</p> <p>Number of trees: 19</p> <p>Categorisation: Moderate potential</p>

TR4.HBG41	
	<p>NGR: SD 72159 45399</p> <p>Species: Alder, ash and oak species</p> <p>Number of trees: 7</p> <p>Categorisation: Moderate potential</p>
TR4.HBG42	
<p>No photo.</p>	<p>NGR: SD 72191 44998</p> <p>Species: Ash and alder</p> <p>Number of trees: 4</p> <p>Categorisation: Moderate potential</p>
TR4.HBG43	
	<p>NGR: SD 72280 45147</p> <p>Species: Ash and beech</p> <p>Number of trees: 3</p> <p>Categorisation: Moderate potential</p>
TR4.HBG44	
<p>No photo.</p>	<p>NGR: SD 72331 45172</p> <p>Species: Ash and alder</p> <p>Number of trees: 3</p> <p>Categorisation: Moderate potential</p>

TR4.HBG45	
	<p>NGR: SD 72427 44656</p> <p>Species: Alder</p> <p>Number of trees: 5</p> <p>Categorisation: Low potential</p>
TR4.HBG46	
	<p>NGR: SD 76200 44963</p> <p>Species: Ash and alder</p> <p>Number of trees: 6</p> <p>Categorisation: Moderate potential</p>
TR4.HBG47	
	<p>NGR: SD 76397 44714</p> <p>Species: Sycamore, willow, alder and ash</p> <p>Number of trees: 20</p> <p>Categorisation: Moderate potential</p>

References

Bowland Ecology. (2020). *TR4 Ecology Survey Data Report: Bat tree assessment report V2*.

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