

## **Appendix B7: Ecology Assessment -Off-site Highways**

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**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section**

**Supplementary Environmental Information**

**Appendix B7: Ecology Assessment - Off-Site Highways Works**

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## Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

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# **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 Bowland Supplementary Environmental Information (SEI) report. Further SEI ecology information can be found in the following documents:
  - SEI technical appendix B5, Ecology Bowland
  - SEI technical appendix B6, Ecology Ribble Crossing
  - Bowland HRA addendum
  - Bowland SSSI addendum
  - Bowland BNG On-Site Habitat Compensation revised report
  - Bowland BNG Off-Site Habitat Compensation revised report.
- 3) This report assesses the transport routes of TR3 and TR4 associated with the Proposed Bowland Section. This SEI technical appendix B7 provides information to be read in conjunction with the Environmental Statement (ES) and associated planning application for the Bowland Section of the Haweswater Aqueduct Resilience Programme (HARP), which were submitted to Ribble Valley Borough Council and Lancaster City 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 relates to:
  - Provision of technical reports not included June 2021 submission
  - Removal of off-site highways works TR4.RW1 through to TR4.RW7 and TR3.PP04, TR3.PP06 and TR3.RW06 from the planning application
  - Addition of off-site highways works to access the Lower Houses Compound
  - Review of environmental data not available at submission of the ES in June 2021
  - Review of consultation responses.

## **1.2 Provision of Technical Reports**

- 4) 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 – TR4 Ecology Data Summaries
  - B7 Annex 2: Off-Site Highways Works – TR4 Target Note Report
  - B7 Annex 3: Off-Site Highways Works – TR4 Hedgerows Report
  - B7 Annex 4: Off-Site Highways Works – TR4 Bat Tree Report
  - B7 Annex 5: Off-Site Highways Works – TR3 Ecology Data Summaries
  - B7 Annex 6: Off-Site Highways Works – TR3 Target Note Report
  - B7 Annex 7: Off-Site Highways Works – TR3 Hedgerows Report
  - B7 Annex 8: Off-Site Highways Works – TR3 Bat Tree Report

### 1.3 Removal of Off-Site Highways Works

- 5) Proposed TR3 off-site highways works passing places TR3.PP04 and TR3.PP06 and road widening TR3.RW06 are no longer required and have been removed from the planning application. Although it should be noted, due to timing of document production, they still appear in the ecology plans, technical reports provided in B7 Annexes 5 to 8. As confirmed via the planning drawings listed below, planning permission is not being sought for these locations.
- RW04 – is not now included on Planning drawing: LCC-BO-APP-004-12\_02 (Rev 1)
  - PP04 – is not now included on Planning drawing: LCC-BO-APP-004-12\_05 (Rev 1)
  - PP06 – is not now included on Planning drawing: LCC-BO-APP-004-12\_04 (Rev 1)
- 6) Proposed TR4 off-site highways works road widenings TR4.RW1 through to TR4.RW7 are no longer required and have been removed from the planning application. Although it should be noted, due to timing of document production, they still appear in the ecology technical reports provided in B7 Annexes 1-4.
- 7) Table 1 provides a summary of the key ecological features associated with these ten locations.

**Table 1: Review of Ecology Features no longer impacted due to removal of off-site highways works areas**

Works Area ID	Designations Near By	Habitats within RLB	Potential for Protected Species (licensable works)
TR3.RW04	<ul style="list-style-type: none"> <li>▪ Tatham Park Wood BHS, 250m east (opposite side of road)</li> <li>▪ Far Mealbank Pasture BHS, 500m southeast (opposite side of road)</li> </ul>	<ul style="list-style-type: none"> <li>▪ c150 m stretch of native species-rich hedgerow</li> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>
TR3.PP04	<ul style="list-style-type: none"> <li>▪ Bank Wood and Hunt's Gill Wood BHS within 110m – Impacts can be avoided with best practice measures.</li> <li>▪ Pike Gill Wood (incl. Willock Close Wood and High Grasses Wood), 120m southwest – Impacts on BHS GWDTE highly unlikely.</li> <li>▪ Alcocks Farm Grassland, 220m southwest (opposite side of road)</li> <li>▪ Powley Wood (incl. Beck Gill Wood, Scroggy Wood, Audland Close, Stubb Wood and Tenter Hill Wood), 250m north</li> <li>▪ Roeburndale Woods SSSI, 420m southwest – no impacts predicted.</li> </ul>	<ul style="list-style-type: none"> <li>▪ c40 m stretch of native species-rich hedgerow</li> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ One tree with moderate potential to support roosting bats</li> </ul>
TR3.PP06	<ul style="list-style-type: none"> <li>▪ Bank Wood and Hunt's Gill Wood BHS within 80m – Impacts can be avoided with best practice measures.</li> <li>▪ Alcocks Farm Grassland, 120m southwest (opposite side of road)</li> <li>▪ Pike Gill Wood (incl. Willock Close Wood and High Grasses Wood), 150m southeast – Impacts on BHS GWDTE highly unlikely.</li> <li>▪ Powley Wood (incl. Beck Gill Wood, Scroggy Wood, Audland Close, Stubb</li> </ul>	<ul style="list-style-type: none"> <li>▪ area of amenity grassland</li> <li>▪ area of bare ground</li> </ul>	<ul style="list-style-type: none"> <li>▪ The adjacent stone barn has potential for barn owl and bat roosting</li> </ul>

Works Area ID	Designations Near By	Habitats within RLB	Potential for Protected Species (licensable works)
	Wood and Tenter Hill Wood), 230m northeast <ul style="list-style-type: none"> <li>▪ Roeburndale Woods SSSI, 380m south – no impacts predicted.</li> <li>▪ Stables Bank BHS, 400m northwest</li> <li>▪ River Roeburn BHS, 450m west</li> <li>▪ Quarry Wood (incl. Hoskin's Wood, Mill Wood and Spout Brow Wood) BHS, 470m west</li> </ul>		
TR4.RW01	<ul style="list-style-type: none"> <li>▪ Bellman Farm Marsh within 40m on opposite side of road – potential for impacts on GWDTE.</li> <li>▪ Coplow Quarry and Pilico Road Grasslands 160m northwest on opposite side of roundabout – no impacts predicted.</li> <li>▪ Salthill Quarry LNR/BHS 375m south</li> <li>▪ Bellman Park Quarry 500m southeast</li> </ul>	<ul style="list-style-type: none"> <li>▪ Semi-improved neutral grassland</li> <li>▪ Poor semi-improved grassland</li> <li>▪ Amenity grassland</li> </ul>	
TR4.RW02	<ul style="list-style-type: none"> <li>▪ Bean Hill Woodland and Grassland BHS, adjacent – impacts can be avoided with best practice measures.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor semi-improved grassland</li> <li>▪ c20m species-rich defunct hedgerow</li> <li>▪ Scattered scrub</li> <li>▪ Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for impacts on otters, white clawed crayfish and salmonids</li> </ul>
TR4.RW03	<ul style="list-style-type: none"> <li>▪ River Ribble BHS, adjacent – impacts can be avoided with best practice measures.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for impacts on otters, white clawed crayfish and salmonids</li> <li>▪ Two trees with moderate bat potential adjacent to works</li> </ul>
TR4.RW04	<ul style="list-style-type: none"> <li>▪ River Ribble, adjacent – impacts can be avoided with best practice measures.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor semi-improved grassland</li> <li>▪ Amenity grassland</li> <li>▪ Bare ground</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for impacts on otters, white clawed crayfish and salmonids</li> </ul>
TR4.RW05	<ul style="list-style-type: none"> <li>▪ None with 500m</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>
TR4.RW06	<ul style="list-style-type: none"> <li>▪ West Clough Wood, 200m northwest on opposite side of road</li> </ul>	<ul style="list-style-type: none"> <li>▪ c30m of native species-rich hedgerow</li> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ Two trees with moderate and one tree with low bat potential adjacent to works</li> </ul>
TR4.RW07	<ul style="list-style-type: none"> <li>▪ None within 500m</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

#### Review of June 2021 Assessment

- 8) The reduction in the scope of the off-site TR3 and TR4 highways works for the Proposed Bowland Section would reduce localised impacts on ecology as works are no longer proposed at these ten sites. No significant residual ecology effects were previously identified for features within the influence of these

locations and their removal from the planning application will result in no overall change in the ecology assessments described in the June 2021 Environmental Statement.

#### 1.4 Additional Lower Houses Off-Site Highways Works

- 9) There are a few amendments to the proposed off-site highways works serving the Lower Houses Compound. These include a number of additional off-site highways works along Eskew lane and Spen Brow. This includes changing the transport route from one-way to two-way vehicle flow, a number of additional passing places and the use of a vehicle marshalling area.

- B7 Annex 9: Off-Site Highways Works – TR3 2022 Additional Areas Ecology Data Summaries
- B7 Annex 10: Off-Site Highways Works – TR3 2022 Additional Areas Ecology Target Note Report
- B7 Annex 11: Off-Site Highways Works – TR3 2022 Additional Areas Ecology Hedgerows Report
- B7 Annex 12: Off-Site Highways Works – TR3 2022 Additional Areas Ecology Bat Tree Report
- B7 Annex 13: Off-Site Highways Works – TR3 2022 Additional Areas Phase 1 Habitat Plan
- B5 Annex 2: Bowland – Post Submission Aquatic Ecology Surveys

##### Impacts

- 10) Table 2 summarises the notable findings of these additional surveys and the following paragraphs detailing the results of the aquatic surveys.
- 11) Additional aquatic survey of Eskew Beck (W2334) was undertaken. The habitat suitability survey confirmed the watercourse had suitable habitat for foraging and commuting otter with areas to the north having some opportunities for shelter although no field signs of otter use were found. The watercourse was also suitable for white clawed crayfish but was unsuitable for water vole. It contains habitat with suitability to support juvenile salmonids but there was also a potential barrier to fish movement. This does not change the Importance of aquatic receptors reported in the June 2021 Environmental Statement.
- 12) Additional aquatic survey of Clear Beck (W2305) was undertaken. The habitat suitability survey confirmed the watercourse had suitability for occasional otter foraging and commuting but not opportunities for shelter were identified. The western reach had suitability for white clawed crayfish, but no areas had suitability for water vole. It contains habitat with suitability to support juvenile salmonids with no barriers to fish movement identified. This does not change the Importance of aquatic receptors reported in the June 2021 Environmental Statement.

**Table 2: Review of ecology features associated with new TR3 off-site highways works areas**

Works Area ID	Designations Near By	Habitats within RLB	Potential for Protected Species (licensable works)
TR3.RW31	<ul style="list-style-type: none"> <li>▪ SD66-09 SINC, adjacent</li> <li>▪ 66NW32 BHS, adjacent</li> </ul>	<ul style="list-style-type: none"> <li>▪ c70m species-rich hedgerow</li> <li>▪ Semi-improved neutral grassland</li> <li>▪ Poor semi-improved grassland</li> <li>▪ Scattered broadleaved trees</li> </ul>	<ul style="list-style-type: none"> <li>▪ One tree within RLB has low potential to support roosting bats</li> <li>▪ Eskew Beck watercourse</li> </ul>
TR3.RW32 & TR3.RW33	<ul style="list-style-type: none"> <li>▪ John's Bank Grassland BHS, adjacent</li> <li>▪ SD66-09 SINC, 10m north</li> <li>▪ 66NW32 BHS, adjacent</li> </ul>	<ul style="list-style-type: none"> <li>▪ c100m species-rich hedgerow</li> <li>▪ Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>▪ Eskew Beck watercourse (RW32)</li> </ul>

Works Area ID	Designations Near By	Habitats within RLB	Potential for Protected Species (licensable works)
TR3.RW34	<ul style="list-style-type: none"> <li>Robert Hall Moor SSSI, 500m west</li> <li>66NW25 BHS, 300m west</li> <li>SD66-09 SINC, 200m north</li> <li>66NW32 BHS, 200m north</li> </ul>	<ul style="list-style-type: none"> <li>c40m species-rich hedgerow</li> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
TR3.RW35	<ul style="list-style-type: none"> <li>Robert Hall Moor SSSI, 400m northwest</li> <li>66NW25 BHS, 200m northwest</li> <li>66NW32 BHS, 400m east</li> </ul>	<ul style="list-style-type: none"> <li>c50m species-rich hedgerow</li> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>Two adjacent trees have low potential to support roosting bats</li> </ul>
TR3.RW36	<ul style="list-style-type: none"> <li>Robert Hall Moor SSSI, 400m northwest</li> <li>66NW25 BHS, 200m northwest</li> <li>66NW32 BHS, 400m northeast</li> </ul>	<ul style="list-style-type: none"> <li>c100m species-rich hedgerow</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
TR3.RW37	<ul style="list-style-type: none"> <li>Robert Hall Moor SSSI, 400m northwest</li> <li>66NW25 BHS, 200m northwest</li> <li>66NW32 BHS, 400m northeast</li> </ul>	<ul style="list-style-type: none"> <li>c120m species-rich hedgerow</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>Clear Beck watercourse</li> </ul>
TR3.RW38	<ul style="list-style-type: none"> <li>66NW22 BHS, 200m southwest</li> <li>66NW24 BHS, 400m northwest</li> <li>66NW25 BHS, 400m north</li> </ul>	<ul style="list-style-type: none"> <li>c70m species-rich hedgerow</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Clear Beck watercourse</li> </ul>
Spen Brow Holding Area	<ul style="list-style-type: none"> <li>66NW22 BHS, 200m southwest</li> <li>66NW24 BHS, 400m northwest</li> <li>66NW25 BHS, 400m north</li> </ul>	<ul style="list-style-type: none"> <li>c200m species-rich hedgerow</li> <li>Semi-improved neutral grassland</li> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>

- 13) Impacts on designations can be avoided through use of best practice measures. One additional tree with low roost potential fall within a redline boundary and two fall adjacent to a redline boundary, these additions to not change the significance of effects identified for bat roosts in the June 2021 assessment. Impacts on riverine species can be avoided through best practice measures. The additional losses of semi-improved neutral grassland and poor semi-improved neutral grassland, scattered broadleaved trees and scrub do not change the June 2021 ES assessment of effects on these ecology features.
- 14) Previously 1.46km of hedgerow loss was identified for TR3 off-site Highways prior to mitigation, these new nine TR3 works locations introduce an additional c750m of species-rich hedgerow loss. This is offset by the removal of three works location as previously discussed which reduce hedgerow loss by c190m. The balance increases the loss from 1.46km to 2.02km Despite this increase, due to the prevalence of hedgerows in the landscape, this scale of loss remains as in the June 2021 assessment as Significant, Local, Adverse pre-mitigation.
- 15) The majority of hedgerow losses for road widening area fall within third party land and would therefore be reinstated as would hedgerow losses at Spen Brow Holding Area. Following reinstatement of

temporary hedgerow losses, effects would diminish. Given the amount of reinstatement, no significant residual effects remain and the conclusions of the June 2021 assessment are unchanged.

- 16) No significant effects on species are likely to arise as a result of the hedgerow loss, the highways generally have hedgerows and/or trees on both verges, therefore connectivity in the landscape will not be significantly effected by loss along one verge.

## **1.5 Review of Additional Data**

### **Biodiversity Net Gain**

- 17) At the time of the June 2021 submission the BNG calculations for the LCC and RVBC Bowland applications did not include figures for the Offsite Highways Works. These assessments have now been undertaken and are included in updated the BNG reports. These include the additional nine locations discussed previously, they also include the three TR3 locations that have since been removed and therefore present a slight overestimate of worst case scenario losses and offsetting requirements. The Bowland BNG On-Site Habitat Compensation revised reports (LCC-BO-APP-008\_01 Rev 2 and RVBC-BO-APP-008\_01 Rev 2) confirms baseline conditions pre and post development and the Bowland BNG Off-Site Habitat Compensation revised report (LCC-BO-APP-008\_02 Rev 2 and RVBC-BO-APP-008\_02 Rev 2) confirms how 10% gain will be delivered.

### **GWDTE Assessment**

- 18) 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 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 (Tables 3 and 4).

**Table 3: GWDTE Ecology Assessment of Effects in LCC (TR3 Highways)**

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
Off-Site Highways Works Ref: <b>TR3 RW22</b> . GWDTE Assessment Site Name: <b>Pike Gill Wood North</b>			
Marshy grassland	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Large significant (in northern half of site) major impact (direct impact to half of site).</li> <li>Groundwater flows/levels (long term): Large significant major impact.</li> <li>Groundwater quality: Moderate significant moderate impact.</li> </ul> <b>Ecology Assessment:</b> The marshy grassland within this GWDTE site is common and widespread in the wider area. The predicted changes to groundwater conditions will not have an ecologically significant impact on marshy grassland habitat.
Off-Site Highways Works Ref: <b>TR3 RW21</b> . GWDTE Assessment Site Name: <b>Hunt's Gill Beck North</b>			
Marshy grassland with M23 rush pasture vegetation	None	High	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Slight significant (in far north of site) minor impact (works other side of road/further upgradient).</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR3 RW19 &amp; RW20</b> . GWDTE Assessment Site Name: <b>Lane House East</b>			
Marshy grassland with M23 rush pasture vegetation and swamp	None	High	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b>



Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			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.
Off-Site Highways Works Ref: <b>TR3 RW17 &amp; RW18</b> . GWDTE Assessment Site Name: <b>Creams Barn Southwest</b>			
Marshy grassland	None	Low to Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Slight significant minor impact (further downgradient - medium sensitivity area), Moderate significant major impact (direct impact to northeast of site – low sensitivity area)</li> <li>Groundwater flows/levels, long term: Slight significant, moderate impact (low sensitivity area).</li> <li>Groundwater quality: Slight significant, moderate impact (low sensitivity area).</li> </ul> <b>Ecology Assessment:</b> The marshy grassland within this GWDTE site is common and widespread in the wider area. The predicted impacts are restricted to a small area adjacent to RW17 and RW18 mapped as marshy grassland habitat. These localised and short term effects are not predicted to have a significant ecological impact on the marshy grassland in the long term.
Off-Site Highways Works Ref: <b>TR3 RW15, RW 16 &amp; PP03</b> . GWDTE Assessment Site Name: <b>Creams Barn Southeast</b>			
Marshy grassland with M23/MG10 rush pasture vegetation	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Slight significant minor impact.</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR3 RW13, RW14, PP01 &amp; PP02</b> . GWDTE Assessment Site Name: <b>Leyland Farm East</b>			
Marshy grassland with M23/MG10	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Large significant major impact (direct impact to edges of site – very localised). Slight significant minor impact (remaining part of the site).</li> </ul>



Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
rush pasture vegetation			<ul style="list-style-type: none"> <li>Groundwater flows/levels - long term: Moderate significant moderate impact (direct impact to edges of site – very localised).</li> <li>Groundwater quality: Moderate significant moderate impact (direct impact to edges of site – very localised).</li> </ul> <p><b>Ecology Assessment:</b></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.</p>
Off-Site Highways Works Ref: <b>TR3 RW11</b> . GWDTE Assessment Site Name: <b>Clear Beck North</b>			
Marshy grassland with MG10 rush pasture	None	Moderate	<p><b>Water Environment Assessment Summary:</b></p> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Slight significant (far east of site) minor.</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <p><b>Ecology Assessment:</b></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: <b>TR3 RW32 &amp; RW33</b> . GWDTE Assessment Site Name: <b>Eskew Beck West</b>			
Marshy grassland	St John's Bank Grassland BHS (north of access track)	Moderate	<p><b>Water Environment Assessment Summary:</b></p> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Moderate significant (far east of site) moderate impact.</li> <li>Groundwater flows/levels, long term: Slight significant minor.</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <p><b>Ecology Assessment:</b></p> <p>The predicted changes to groundwater conditions will not have an ecologically significant impact on marshy grassland habitat.</p> <p>The BHS comprises three parcels of species-rich semi-natural grassland, one of which partly overlaps with the GWDTE site. The marshy grassland of the GWDTE site is not a reason for designation and no significant impacts on the BHS are likely.</p>

**Table 4: GWDTE Ecology Assessment of Effects in RVBC (TR4 Highways)**

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
Off-Site Highways Works Ref: <b>TR4 RW14</b> . GWDTE Assessment Site Name: <b>Browsholme Road South</b>			
Marshy grassland	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Slight significant (far east of site) minor.</li> <li>Groundwater quality: Slight significant (far east of site) minor impact.</li> </ul> <b>Ecology Assessment:</b> The predicted changes to groundwater conditions will not have an ecologically significant impact on marshy grassland habitat.
Off-Site Highways Works Ref: <b>TR4 RW15</b> . GWDTE Assessment Site Name: <b>Ringley Hey North</b>			
Marshy grassland	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Large significant (in centre only) major impact (direct but localised impact to small area in centre of site).</li> <li>Groundwater flows/levels, long term: Moderate significant (in centre only) moderate impact (direct but localised impact to small area in centre of site).</li> <li>Groundwater quality: Moderate significant (in centre only) moderate impact (in the centre of the site, immediately downgradient).</li> </ul> <b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR4 RW16</b> . GWDTE Assessment Site Name: <b>Moorcock House East</b>			
Marshy grassland	Waddington Fell and Browsholme Moor BHS (BHS on west side of Slaidburn Road, opposite works area on east side of road)	High	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels, short term: Large significant (in centre only) major impact (direct and localised impact to small area in centre of site).</li> <li>Groundwater flows/levels, long term: Moderate significant (in centre only) moderate impact (direct and localised impact to small area in centre of site).</li> </ul>

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			<ul style="list-style-type: none"> <li>Groundwater quality: Moderate significant (in centre only) moderate (in the centre of the site, immediately downgradient).</li> </ul> <p><b>Ecology Assessment:</b></p> <p>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: <b>TR4 RW17</b> . GWDTE Assessment Site Name: <b>Waddington Fell South</b>			
Wet dwarf shrub heath, wet heath/acid grassland mosaic and marshy grassland	Waddington Fell and Browsholme Moor BHS	Moderate	<p><b>Water Environment Assessment Summary:</b></p> <ul style="list-style-type: none"> <li>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).</li> <li>Groundwater flows/levels, long term: Slight significant, minor impact.</li> <li>Groundwater quality: Slight significant, minor impact.</li> </ul> <p><b>Ecology Assessment:</b></p> <p>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: <b>TR4 RW18</b> . GWDTE Assessment Site Name: <b>Waddington Fell</b>			
Marshy grassland and wet dwarf shrub heath	Waddington Fell and Browsholme Moor BHS (BHS on west side of Slaidburn Road, opposite works area RW18 on east side of road)	High	<p><b>Water Environment Assessment Summary:</b></p> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Slight significant (small part of site) minor impact (works across / downgradient).</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <p><b>Ecology Assessment:</b></p> <p>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: <b>TR4 RW19</b> . GWDTE Assessment Site Name: <b>Waddington Fell</b>			
Marshy grassland	Waddington Fell and Browsholme Moor BHS <i>(BHS on west side of Slaidburn Road, south of works area RW19)</i>	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>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).</li> <li>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).</li> <li>Groundwater quality: Moderate significant (small areas in the north and southeast only) moderate impact (in the north and southeast of the site, immediately downgradient).</li> </ul> <b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR4 RW20</b> . GWDTE Assessment Site Name: <b>Waddington Fell Quarries</b>			
Marshy grassland and wet dwarf shrub heath	None	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Large significant (centre of site only) major impact (direct but localised impact to small area in centre of site).</li> <li>Groundwater flows/levels - long term: Moderate significant (centre of site only) moderate impact (direct but localised impact to small area in centre of site).</li> <li>Groundwater quality: Moderate significant (small area in the centre of the site only) Moderate impact (in the centre of the site, immediately downgradient).</li> </ul>

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
			<b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR4 PP01 and RW21</b> . GWDTE Assessment Site Name: <b>Wallop Well South</b>			
Wet dwarf shrub heath and marshy grassland	Waddington Fell and Browsholme Moor BHS ( <i>northwest area of GWDTE site</i> )  Bradford Fell, Easington Fell and Harrop Fell BHS ( <i>northeast area of GWDTE site</i> )	High	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Moderate significant (centre only) moderate impact (small area in centre of site only, downgradient of PP01) and slight significant (small part of site) minor impact (site further downgradient).</li> <li>Groundwater flows/levels - long term: Slight significant minor impact.</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b> Within the GWDTE site, GWDTE habitats in the southeast are marshy grassland and outside the BHS designations; habitats in the northeast are marshy grassland closest to PP01 and west dwarf shrub heath beyond this and fall within Bradford Fell, Easington Fell and Harrop Fell BHS; habitats in the northwest are primarily west dwarf shrub heath with one area of marshy grassland and fall within Waddington Fell and Browsholme Moor BHS.  Moderate impacts on groundwater levels are limited to short term effects in a small area at the centre of the GWDTE site with minor/slight effects similarly limited to small area further downgradient. Long term and groundwater quality effects are minor/slight. 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. Similarly, any effects experienced by the marshy grassland and dwarf shrub heath habitats along a very small length of the edge of the extensive BHSs is not likely to have a permanent significant effect on functionality of either BHS, nor the range or extent of the habitats associated with the large designations (Bradford Fell, Easington Fell and Harrop Fell BHS is 518 ha and Waddington Fell and Browsholme Moor BHS is 268 ha).
Off-Site Highways Works Ref: <b>TR4 RW22</b> . GWDTE Assessment Site Name: <b>Upper Bonstone Brook</b>			

Habitats within GWDTE Site	Designations within GWDTE Site	Groundwater dependency	Significance of effect
Wet dwarf shrub heath in the south Marshy grassland with acid/neutral flush and fen habitat north of the road	Waddington Fell and Browsholme Moor BHS ( <i>south area of GWDTE site</i> ) Bradford Fell, Easington Fell and Harrop Fell BHS ( <i>north area of GWDTE site on opposite side of road</i> )	High to moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater flows/levels - short term: Slight significant minor impact (southern half of site is upgradient of works and northern half is further downgradient).</li> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b> The predicted impacts are restricted to a small area adjacent to RW22 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 marshy grassland, acid/neutral flush and fen habitat is on the opposite (north) side of the road and outside the reach of the localised effects.
Off-Site Highways Works Ref: <b>TR4 RW23</b> . GWDTE Assessment Site Name: <b>Lower Underhand East</b>			
Marshy grassland	Bradford Fell, Easington Fell and Harrop Fell BHS	Moderate	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>Groundwater quality: Slight significant minor impact.</li> </ul> <b>Ecology Assessment:</b> 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.
Off-Site Highways Works Ref: <b>TR4 RW24</b> . GWDTE Assessment Site Name: <b>Blue Gates</b>			
Marshy grassland	None	Low	<b>Water Environment Assessment Summary:</b> <ul style="list-style-type: none"> <li>No significant effect</li> </ul> <b>Ecology Assessment:</b> There will not be no ecologically significant impact on marshy grassland habitat.

#### **GWDTE Summary for TR3 Highways**

- 19) The original assessment submitted in June 2021 concluded that no significant impacts were likely to arise on any GWDTE habitats either within or outside designations and this January 2022 assessment agrees with that conclusion.
- 20) The nine additional locations not included in the June 2021 submission have also been subject to a GWDTE assessment, this has also concluded that no significant impacts were likely to arise on any GWDTE habitats either within or outside designations.

#### **GWDTE Summary for TR4 Highways**

- 21) 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.
- 22) 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.
- 23) Since receiving the GWDTE assessment, this February 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.
- 24) The June 2021 assessment, precautionarily concluded a Significant Adverse effect on Bradford Fell, Easington Fell & Harrop Fell BHS pending the GWDTE assessment. However, since receiving the GWDTE assessment, this February 2022 assessment can conclude No Significant Adverse effects on the BHS.
- 25) 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.

#### **Updated AIA**

- 26) Since the June 2021 submission the AIA has been updated to include the additional TR3 Highways areas and to provide further information and review of the arboricultural impacts. This information is provided in SEI Appendix B2.
- 27) The assessment confirms no impacts on veteran or ancient trees or ancient woodland. It identifies a number of features that can be retained with protection measures and identifies a reasonable worst-case scenario of removed (Red) and at risk (Amber) category trees, with further reductions in losses likely once detailed working arrangements are known.
- 28) The June 2021 ecology assessment valued scattered broad-leaved trees and woodland at the County level and concluded that Significant Adverse effects would arise, with residual effects reducing to Significant at the Local level. Although there have been some changes to losses, the additional works areas and updated AIA do not change those conclusions.

### **1.6 Responses to Consultee Comments**

- 29) A response to all consultee comments is provided within SEI Appendix A1 and below are a few issues are also covered below and in the other ecology SEI Appendices (B5 and B6).

#### **Impacts on Designations**

- 30) Consultee comments included a request for clarification on impacts on local designations including consideration of alternatives and mitigation or compensation.
- 31) No designations fall within TR3 Highways red line boundaries. Four BHS designations lie partly within the GWDTE potential zone of influence but no significant impacts on them are predicted. Two designations are adjacent to works area. John's Bank Grassland is separated by an existing track and its



species-rich, semi-natural grassland habitats will not be impacted. Eskew Lane Wood Low Bentham SINC is on the opposite side of the road from proposed works areas and the updated AIA confirms no losses within this designation.

- 32) A number of designations fall within the TR4 Highways red line boundaries. However, the SEI confirms that following the removal of RW01 through to RW07 from the planning application, the only off-site highways works required to service the Proposed Bowland Section that overlaps with a Biological Heritage Site (BHS) designation are as follows:

- TR4. RW17 – Waddington Fell and Browsholme Moor BHS
- TR4. RW23 - Bradford Fell, Easington Fell & Harrop Fell BHS
- TR4. RW27 - Waddington Fell Road, Roadside Verges BHS

TR4. RW17

- 33) 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.
- 34) 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.
- 35) 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.

TR4. RW23

- 36) The red line planning boundary associated with RW23 is a small linear area (approximately 50 m long and <10 m wide) on the southwest boundary of Bradford Fell, Easington Fell & Harrop Fell BHS. The land impacted is a poor semi-improved grassland verge with a very thin sliver of semi-improved acid grassland. The BHS is designated due to upland heath and mire habitats and therefore this verge habitat is not an important component.
- 37) In considering alternatives, it is not possible to move the location further east or west 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 marshy grassland. 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.
- 38) The permanent land take associated with the road widening is a very narrow strip of poor semi-improved grassland 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.



TR4. RW27

- 39) The red line planning boundary associated with RW27 is a small linear area (approximately 40 m long and <10 m wide) The land impacted is semi-improved neutral grassland verge within Waddington Fell Road, Roadside Verges BHS. The BHS covers 0.2 ha across the verges on both sides of a stretch of road south of Newton-in-Bowland. TR4/RW27 working area covers approximately one quarter of the designated road verge on the east side. Permanent loss of this habitat (c13% of designation) could represent a significant effect on this designation.
- 40) 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 neutral grassland verge on the opposite side of the road is still within the BHS. 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.
- 41) The permanent land take associated with the road widening is a very narrow strip of 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.

**Irreplaceable / Very High Distinctiveness Habitats**

- 42) Consultee comments were received regarding identification of all irreplaceable / very high distinctiveness (VHD) habitats that may be affected by the proposed works, demonstration that any losses are unavoidable and that a suitable compensation strategy exists.
- 43) There are no VHDs within the Offsite Highways works proposed within Lancaster City Council. The VHDs within the Ribble Valley Borough Council Offsite Highways fall into the following category:
- Purple moor grass and rush pasture
- 44) Purple moor grass and rush pasture is present along the offsite highways within Ribble Valley Borough Council at the following three locations:
- RW16 (not in road verge and on opposite side of drystone wall)
  - RW18 (small area, not in road verge, opposite side of drystone wall restricted to the northern extent)
  - RW20 (linear strip, not in road verge and on opposite side of drystone wall, primarily in far extent of the RLB)
- 45) In considering alternatives, it is not possible to move the road widening locations further north or south along the road to avoid this habitat and still meet the construction traffic requirements. In considering moving to the opposite side of the road this would cause the red line boundaries to extend into Biological Heritage Sites (BHS) at RW16 and RW18 (the latter also covering a greater extent of the habitat than at its current location); and at RW20 the RLB would extend into acid dry dwarf shrub heath. 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.
- 46) 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). The footprint of the permanent road widening at these three locations does not fall within these habitats, instead they all fall within the roadside verge (semi-improved neutral grassland) and are separated from these habitats by a drystone wall. 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.

- 47) In addition to the avoidance and reinstatement measures outlined above, the offsetting areas selected for the BNG proposals also include areas appropriate to provide compensation for any VHDs impacted. The areas selected allow for a 4 for 1 ratio.

**Potential for Increased Roadkill Risk to Barn Owls**

- 48) 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.
- 49) Between TR4. RW08 to TR4. RW28 (the off-site highways works locations required for the Proposed Bowland Section in RVBC) 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.
  - A hedgerow is present within RW 24 and 25 but there is a woodland belt along the opposite side of the road
  - A hedgerow is present within RW26 and 28 but there is a hedgerow along the opposite side of the road
- 50) Across the TR3 Offsite Highways (works within Lancashire City Council) there are a large degree of hedgerows, tree lines and woodlands bordering the roads. Below is a summary of areas requiring hedgerow, treeline removal:
- Hedge/treeline removal on one side of the road but hedge, treeline, woodland, fences, walls or buildings remain on the opposite side of the road (RWs 01, 02, 03, 04, 05, 08, 31, 32, 33, 34, 09, 35, 10, 36, 21, 12 and Spen Brow Holding Area and PP 04)
  - RW 37 and 38 require hedgerow removal on both side of the road for approximately 60 m and 45 m lengths but these hedgerows continue (and will be retained) either side and between both of these locations
  - A section in the middle of RW 22 requires hedgerow removal on both side of the road on a bend approximately 60 m
  - A section in the middle of RW20 requires tree removal for approximately 50 m, there is a linear building on the opposite side of the road but it is less than 50 m long
- 51) Given there are only four locations where there are no features on the opposite side of the road, it is unlikely that the works would result in an ecologically significant increase in roadkill risk to barn owl.



THE  
ENVIRONMENT  
PARTNERSHIP

**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 1**

**Off-Site Highways Works – TR4 Ecology Data Summaries**

January 2022



## Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

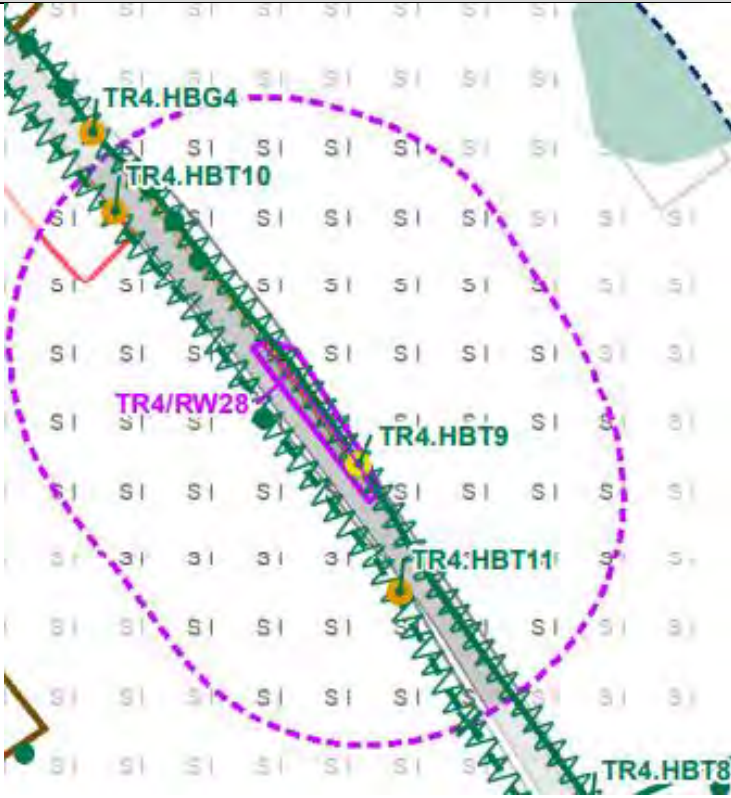


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Supplementary Environmental Information (SEI)  
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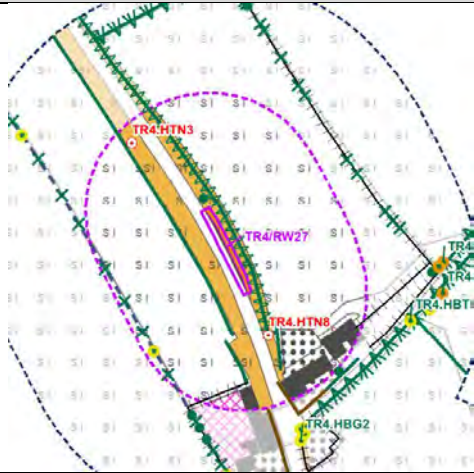


Revision	Date	Description	Author	Checked	Reviewed	Approved

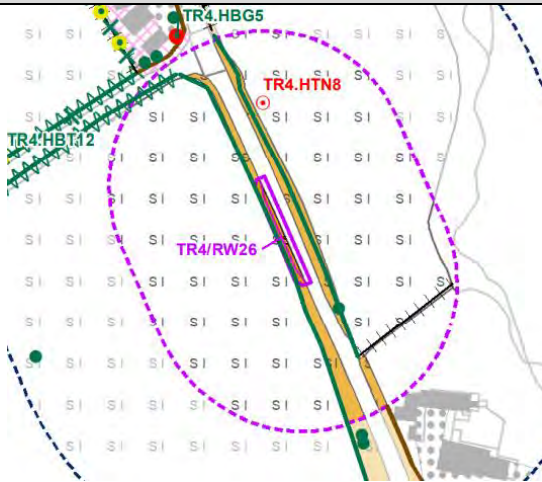

**TR4 Marl Hill Highway Improvements – Ecology Baseline**

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 Dunnow Hill	1.2km north of site
Newton North Roadside Verges	800m north of site	Newton West Roadside Verge	900m west of site	Little Dunnow Wood	1.7km north-east of site
Great Dunnow 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			<p>TR4.HBT10</p>  <p>TR4.HBT11</p> 	<p>TR4.HBT9</p> 

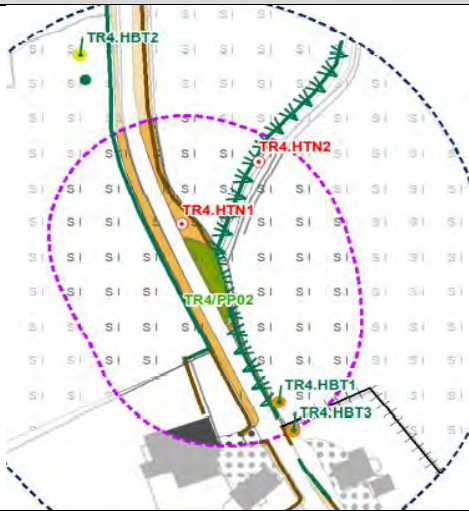



Protected Species Assessment	Summary of Constraints
<ul style="list-style-type: none"><li>• One tree within the site has low potential to support roosting bats (TR4.HBT9).</li><li>• Two trees adjacent to the site (opposite side of the road) have moderate potential to support roosting bats (TR4.HBT10, TR4.HBT11). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li><li>• The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li><li>• 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).</li><li>• Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 400m).</li></ul>	<ul style="list-style-type: none"><li>• Habitats will be not reinstated on completion of the works.</li><li>• Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated verge habitat.</li><li>• Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>• 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.</li><li>• 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.</li><li>• Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>• 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.</li></ul>

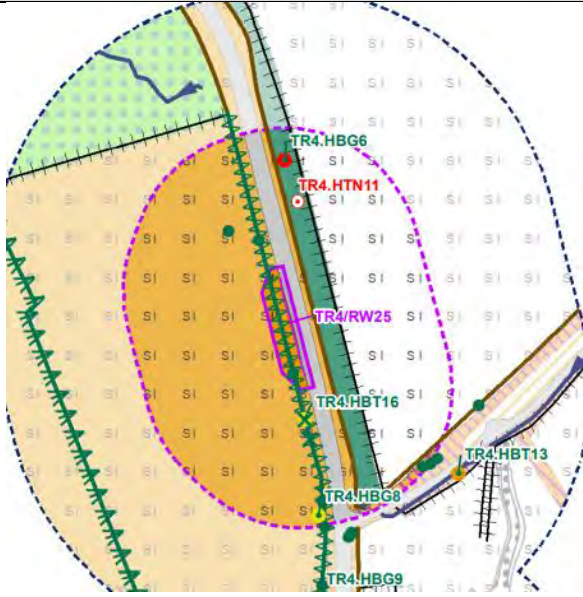




<b>Works ID</b>	TR4/RW27	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Historic Species Records</b>			
Bell Sykes Meadows SSSI	3.1km to the North-east of the site	West European Hedgehog	Within 2000m tetrad 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		
<b>Non Statutory Designated Wildlife Sites within 2km</b>					
Waddington Fell Road, Roadside Verge BHS	Within the site	Great Dunnow 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 Dunnow 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 Dunnow Wood	1km north of site	Ashnott Wood	2km south west of site	Great Dunnow 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 Dunnow 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 Dunnow 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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
2 ponds present in total, located approx. 450m (north-east) and 400m (east)		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Semi-improved neutral grassland	Native species-rich hedgerow Scattered broadleaved trees Poor Semi-improved grassland Species-poor intact hedgerow			TR4.HTN3 	TR4.HTN8 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 400m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Works appear to be limited to the road verge and will involve removal of a small area of potentially botanically diverse grassland.</li> <li>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.</li> <li>Potential loss of priority habitat – further survey in the appropriate season is recommended.</li> <li>Mitigation for priority habitat loss will be required which needs agreeing with the LPA.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields).</li> </ul>		

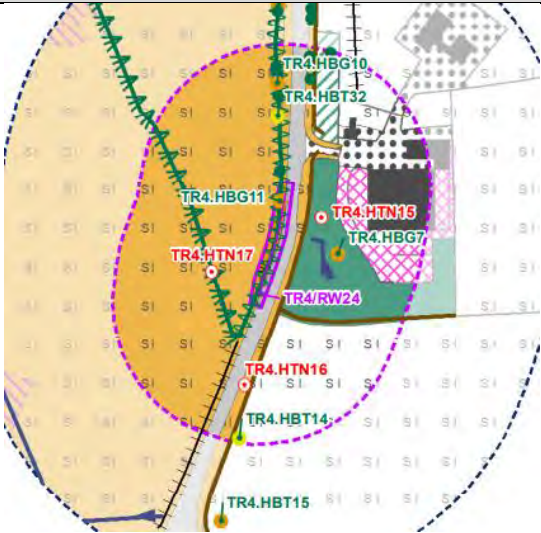


Works ID	TR4/RW26	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Bell Sykes Meadows SSSI	3.3km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	450m north 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 Dunnow Hill	1.7km north of site
Bowland Fells SSSI	4.9km to the North-west of the site	Great Dunnow 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			<div>TR4.HTN8</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 400m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the road verge, therefore it is assumed the adjacent hedgerow will not be impacted by the proposals.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields).</li></ul>		

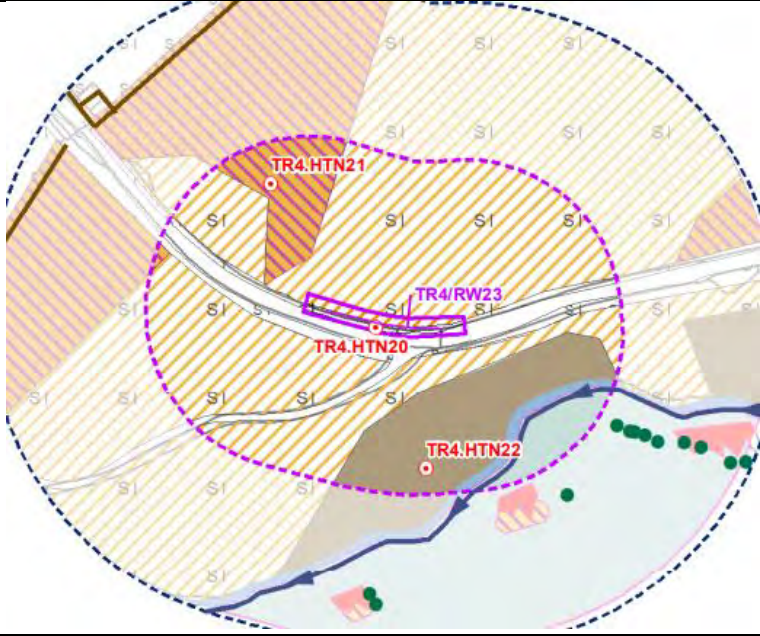




Works ID	TR4/PP02	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Bell Sykes Meadows SSSI	3.55km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	650m north 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 Dunnow 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 Dunnow 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			<div>TR4.HTN1</div>   <div>TR4.HBT1</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>This verges (TR4.HTN1) provides opportunities for small mammals, nesting birds and reptiles as well as commuting habitat for bats.</li><li>The adjacent hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>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.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows, walls and adjacent fields).</li></ul>		

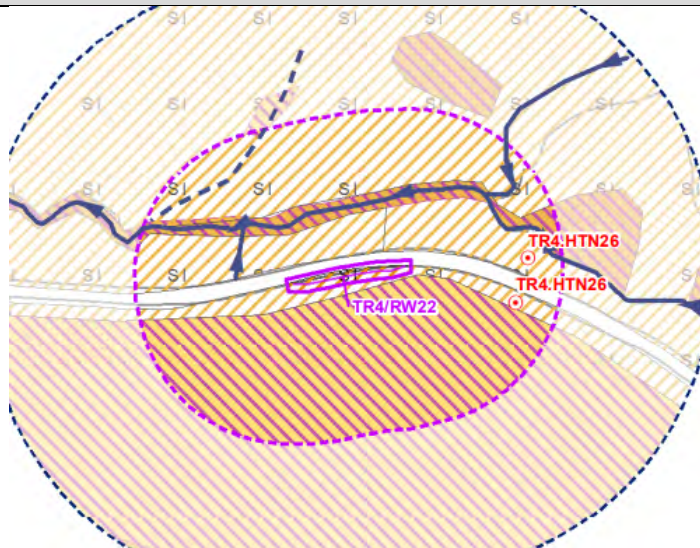

<b>Works ID</b>	TR4/RW25	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Bell Sykes Meadows SSSI	3.7km to the Norh-east 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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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.</li> <li>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).</li> <li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		

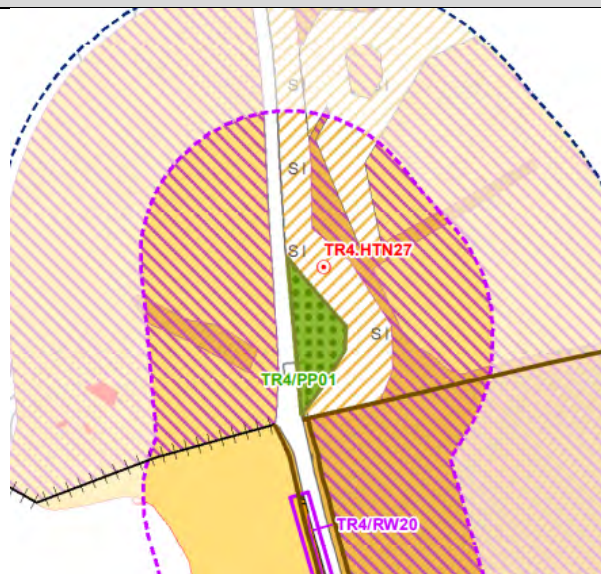



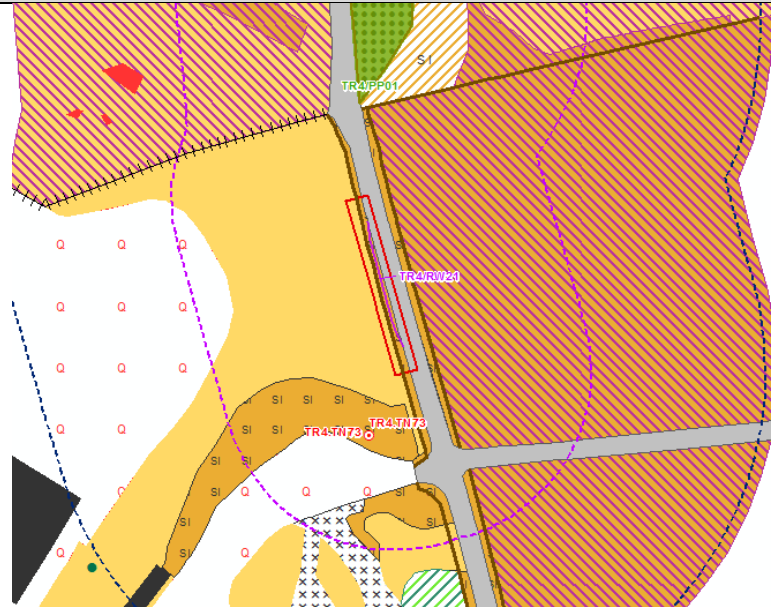
<b>Works ID</b>	TR4/RW24	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Bell Sykes Meadows SSSI	3.8km to the North-east of the site	Waddington Fell Road, Roadside Verge BHS	840m north of site	Common Frog	Approx 800m north west
Field Head Meadow SSSI	4.1km 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	3.6km 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	4.9km to the North-west of the site	Bonstone Brook Pasture's	600m south of site	Mallard	Approx 900m northwest
Myttons Meadows SSSI	4.6km to the North of the site	Waddington Fell and Browsholme Moor	900m south of site	Dark Green Fritillary	Approx 600m west
Bowland Fells SPA	4.9km 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	3.9km to the North-West of the site	Newton West Roadside Verge	1.9km north west of site	Small Heath	Approx 600m west
		River Hodder	1.5km 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 Helleborine	Approx 100m north west
				Autumn Gentian	Approx 900m south east
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop Constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Species-rich intact hedgerow Semi-improved neutral grassland Scattered broadleaved trees	Poor semi-improved grassland Semi-improved neutral grassland Species-rich intact hedge and trees Running water Semi-natural broadleaved woodland Plantation broad-leaved woodland Dry stone wall			TR4.HTN15 	TR4.HBG11 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>One tree group within the site has moderate potential to support roosting bats (TR4.HBG11).</li> <li>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.HBG7, TR4.HBG10 and TR4.HBT32).</li> <li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>The location of the current proposals will result in the loss of a tree with moderate potential to support roosting bats (TR4.HBG11). 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.</li> </ul>		

<b>Works ID</b>	TR4/RW23	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>	<b>Site Photos</b>		
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		<div>TR4.HTN20</div> 		<div>TR4.HTN22</div> 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Works appear to be limited to the poor SI grassland road verge. No significant impacts anticipated.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li> </ul>		




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			<div>TR4.HTN26</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>The adjacent grasslands have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the poor SI grassland road verge. No significant impacts anticipated.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>		

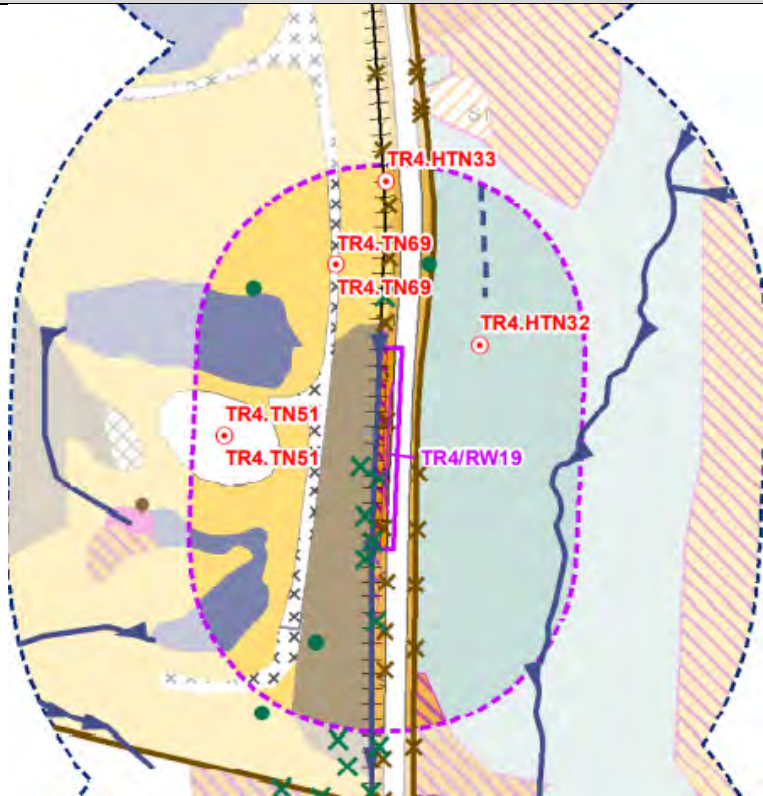

Works ID	TR4/PP01	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.9km north of site	Bonstone Brook Pastures	1.2km north west of 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			<p>TR4.HTN27</p> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>The adjacent grasslands have ground nesting bird potential.</li><li>Limited habitats within the site – unlikely to be any significant impacts to protected species</li><li>Amphibians are unlikely to be present due to 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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to existing bare ground that is used for parking. No significant impacts anticipated.</li><li>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.</li></ul>		

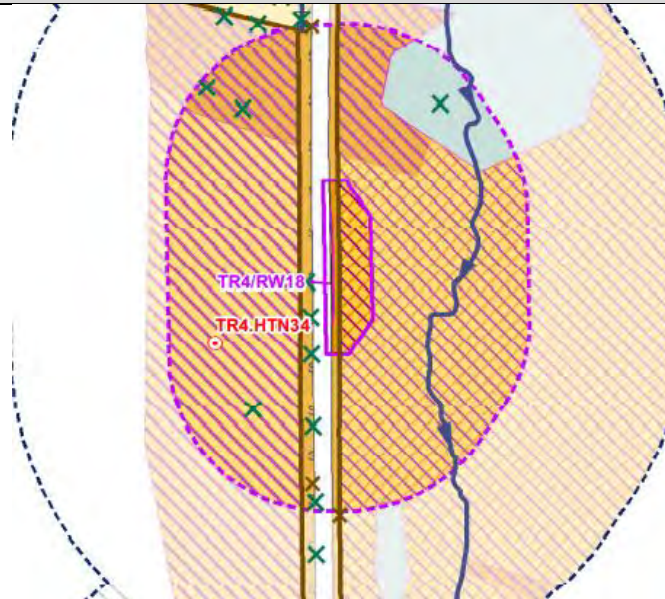

Works ID	TR4/RW21	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.95km north of site	Bonstone Brook Pastures	1.25km north west 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"><li>The adjacent habitats have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to 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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the SI grassland road verge. No significant impacts anticipated.</li><li>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.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>		



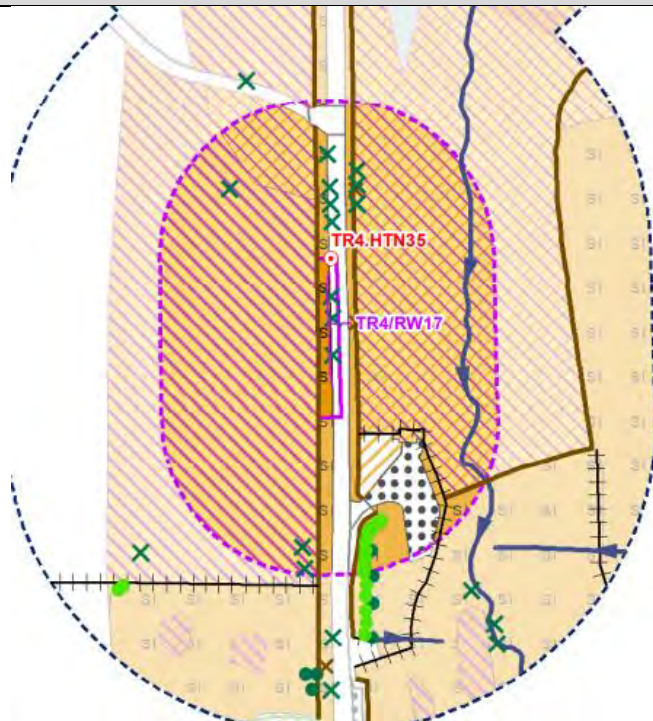

Works ID	TR4/RW20	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	4.95km north of site	Bonstone Brook Pastures	1.25km north west 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"><li>The adjacent habitats have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to 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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the grassland road verge. No significant impacts anticipated.</li><li>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.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>		



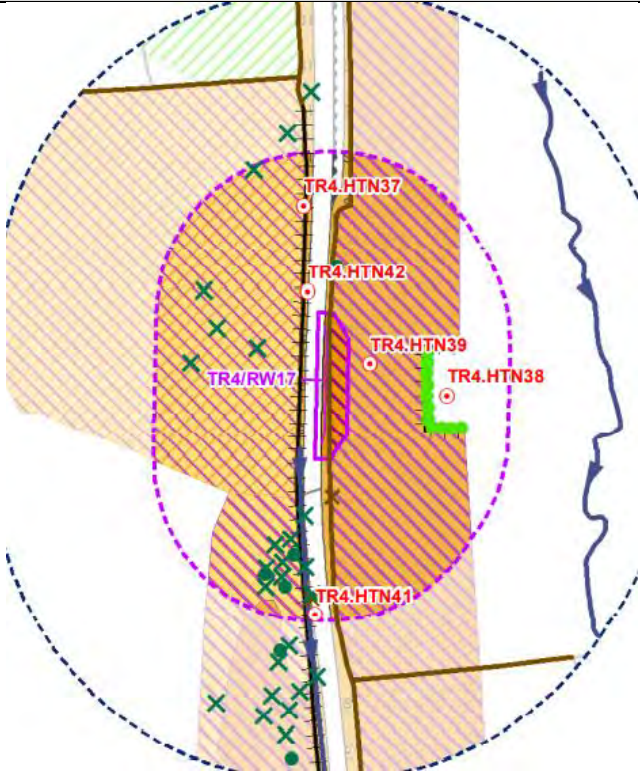


Works ID	TR4/RW19	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Bell Sykes Meadow SSSI	5km north of site	Bonstone Brook Pastures	1.5km north west of site	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"><li>The adjacent habitats have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to 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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the SI/marshy grassland road verge. No significant impacts anticipated.</li><li>It is assumed the adjacent fence and watercourse will remain in-situ, thus protecting the adjacent habitats.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li><li>Waddington Fell and Browsholme Moor BHS lies approx. 70m south of the site on the opposite side of the road.</li></ul>		

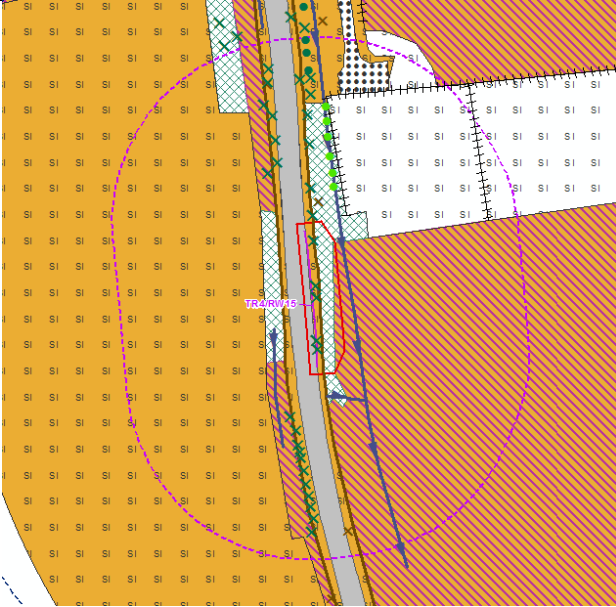
Works ID	TR4/RW18	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Langcliff Cross Meadow SSSI	4.3km north east of the site	Bradford Fell, Easington Fell & 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"><li>The adjacent habitats have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to 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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the SI grassland road verge. No significant impacts anticipated.</li><li>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.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li><li>Waddington Fell and Browsholme Moor BHS lies adjacent to the site on the opposite side of the road.</li></ul>		



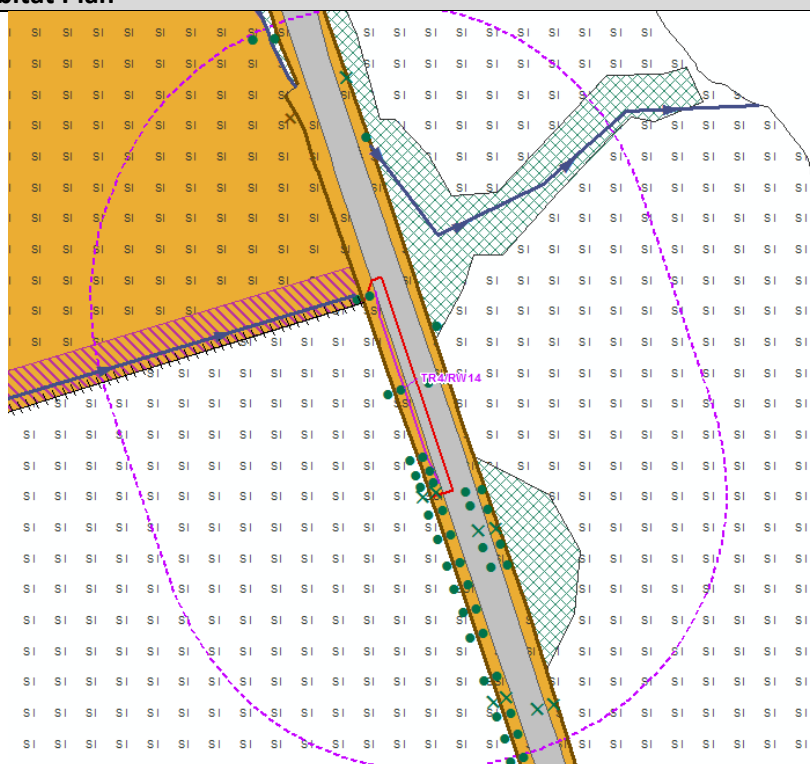
Works ID	TR4/RW17	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Langcliff Cross Meadow SSSI	4.4km north east of the site	Bradford Fell, Easington Fell & 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			<div>TR4.HTN35</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>The adjacent habitats have ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to due to distance of nearest potential breeding pond (c. 400m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>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.</li><li>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.</li><li>It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>		

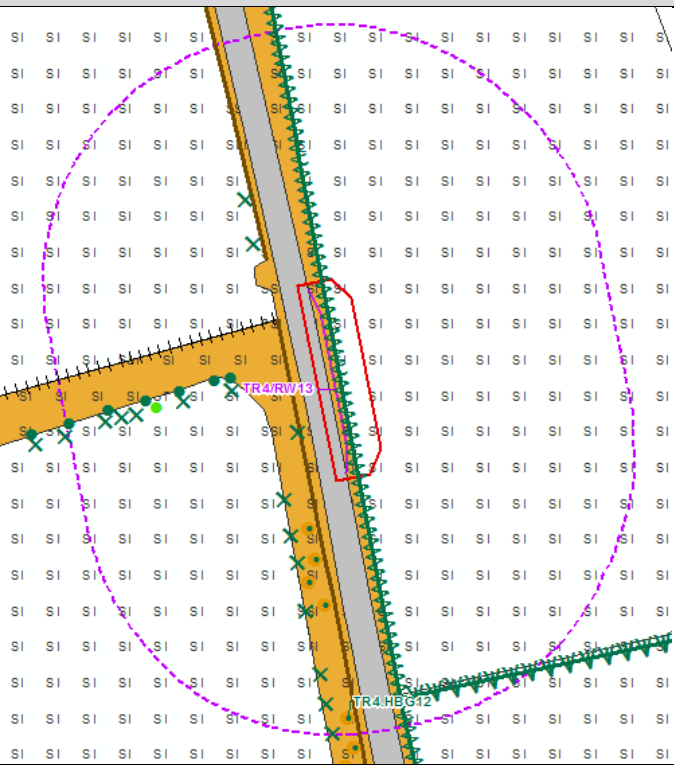
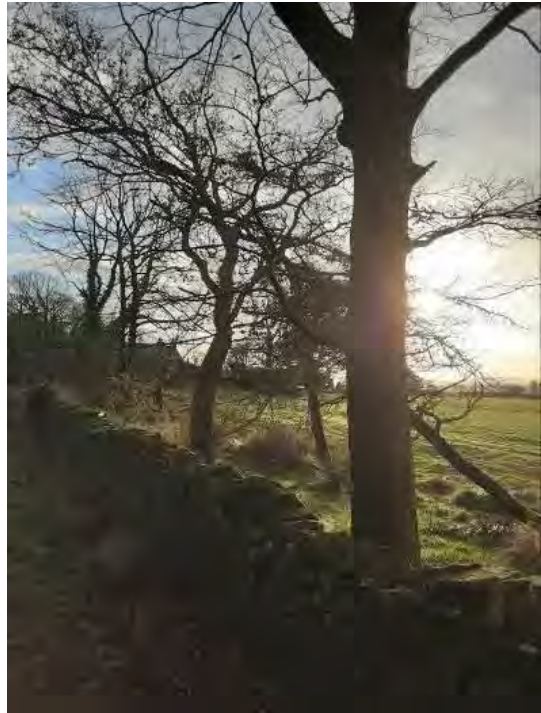


<b>Works ID</b>	TR4/RW16	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Langcliff Cross Meadow SSSI	4.8km north east 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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
	Wet dwarf shrub heath Wall Scattered coniferous trees Running water Fence Wet heath/acid grassland mosaic Scattered scrub			TR4.HTN42 	TR4.HTN41 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The adjacent habitats have ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Works appear to be limited to the SI grassland road verge. No significant impacts anticipated.</li> <li>It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li> <li>Waddington Fell and Browsholme Moor BHS lies adjacent to the site on the opposite side of the road.</li> </ul>		

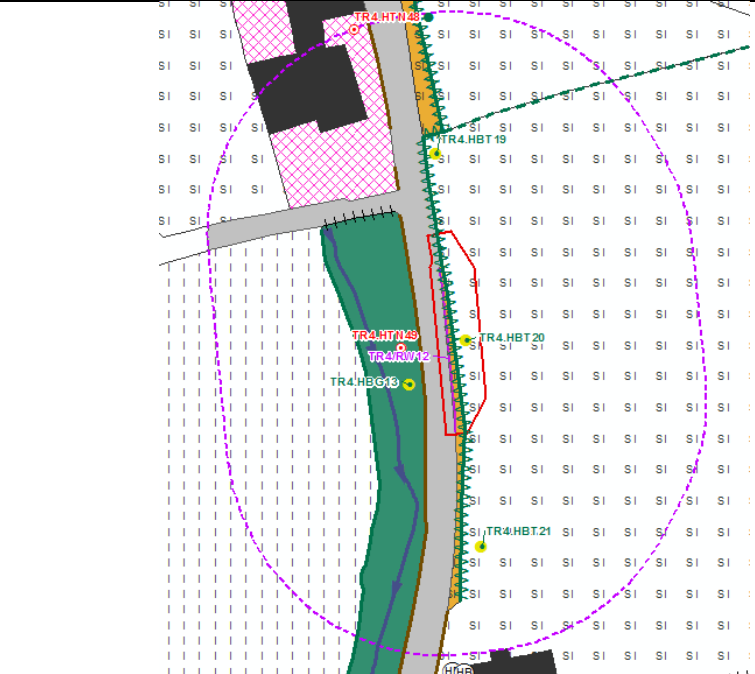


Works ID	TR4/RW15	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Salthill and Bellman Park Quarry SSSI	5km south east of the site	Bradford Fell, Easington 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"><li>The scrub habitats within the site and adjacent habitats have nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the SI grassland road verge. No significant impacts anticipated.</li><li>It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>		

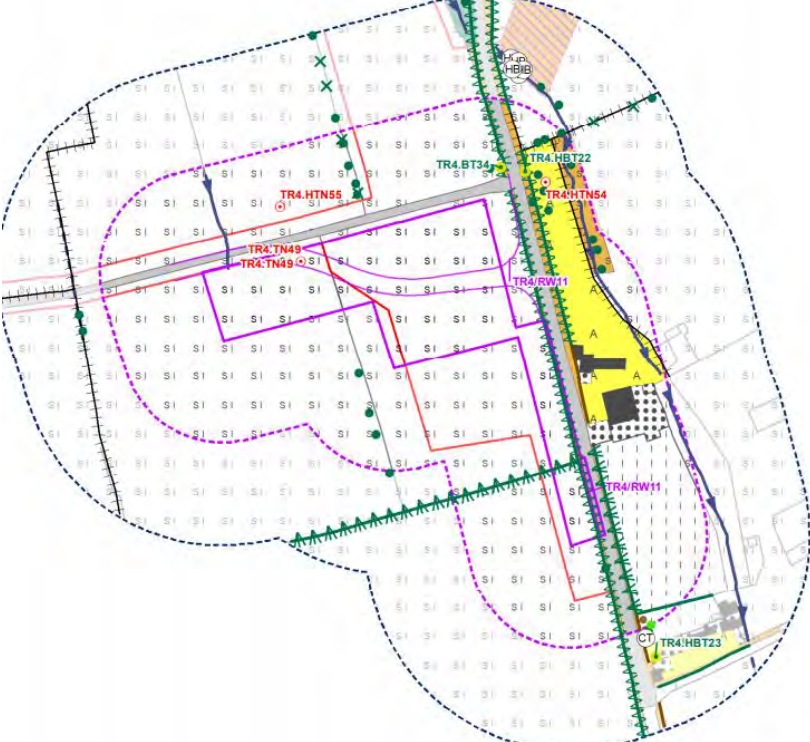



Works ID		TR4/RW14	Survey Date		08-10/12/2020, 14-16/12/2020	Surveyor		Bowland Ecology Ltd.	
Statutory Designated Wildlife Sites within 5km			Non Statutory Designated Wildlife Sites within 2km			Historic Species Records			
Salthill and Bellman Park Quarry SSSI		4.7km south east of the site	Bradup Wood 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"><li>The tree and scrub habitats within the site and adjacent habitats have nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to due to lack of potential breeding ponds (&gt; 500m).</li></ul>					<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the SI grassland road verge and associated trees/scrub. No significant impacts anticipated.</li><li>It is assumed the adjacent dry stone wall will remain in-situ, thus protecting the adjacent habitats.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li></ul>				

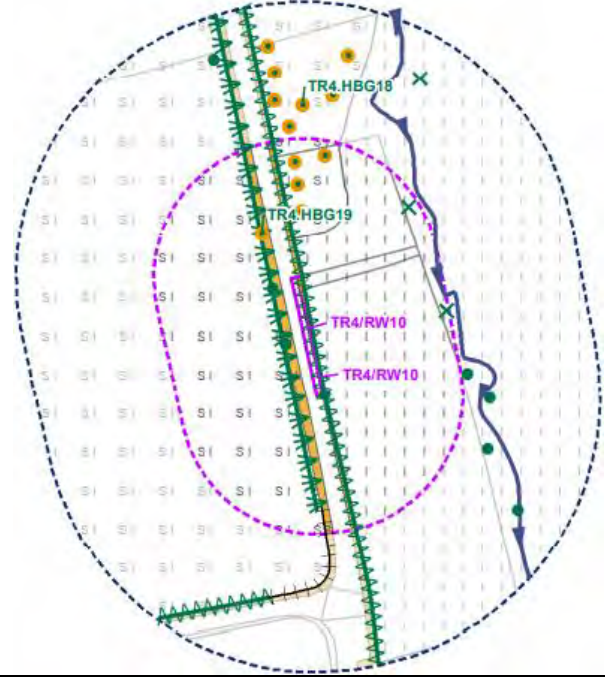

<b>Works ID</b>	TR3/RW13	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>			
Salthill and Bellman Park Quarry SSSI	4.3km south east of the site	Bradup Wood 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		
<b>Historic Species Records</b>					
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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>	<b>Site Photos</b>		
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		<div>TR4.HBG12</div> 		
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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).</li> <li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> </ul>		

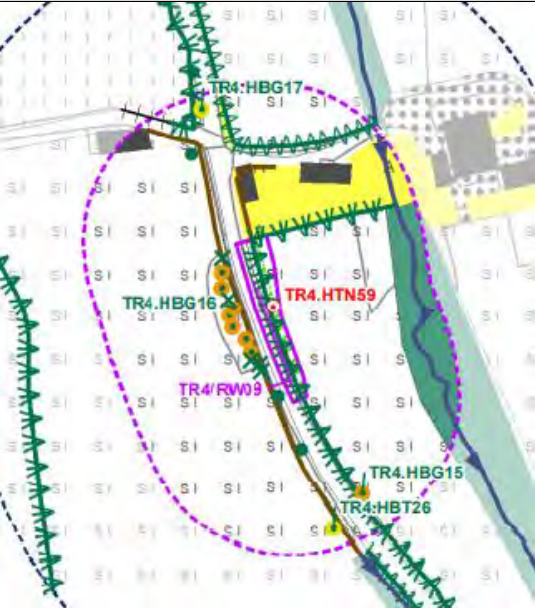




<b>Works ID</b>	TR3/RW12	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>			
Salthill and Bellman Park Quarry SSSI	4.1km south east of the site	Bradup Wood 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		
<b>Historic Species Records</b>					
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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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			TR4.HTN49 	TR4.HTN48 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>One tree within the site has low potential to support roosting bats (TR4.HBT20).</li> <li>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.</li> <li>The adjacent woodland at TR4.HTN49 provides suitable habitat for nesting birds, roosting/foraging/commuting bats, small mammals, large mammals and amphibians.</li> <li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		

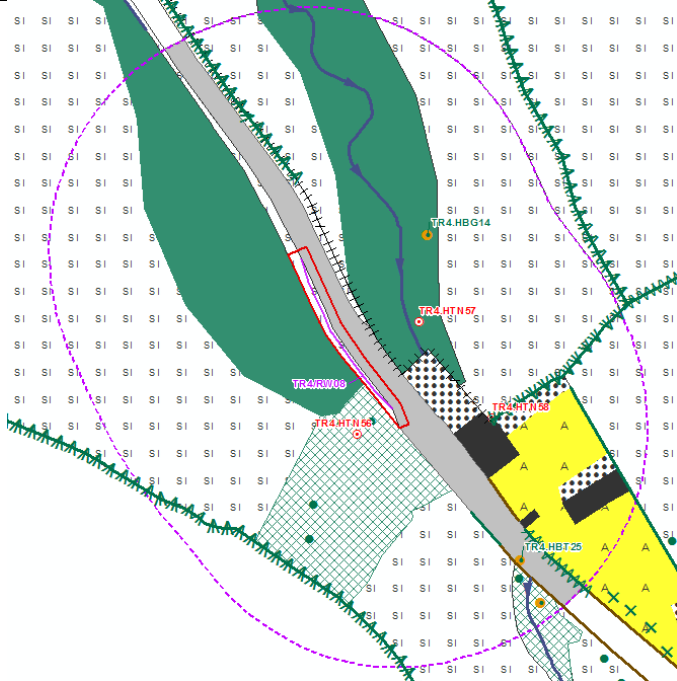


<b>Works ID</b>	TR3/RW11	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>			
Salthill and Bellman Park Quarry SSSI	3.9km south east of the site	Bradup Wood 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		
<b>Historic Species Records</b>					
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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>	<b>Site Photos</b>		
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		TR4.HTN54 		
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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.</li> <li>The hedgerow has nesting bird potential. The SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately c. 170 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		

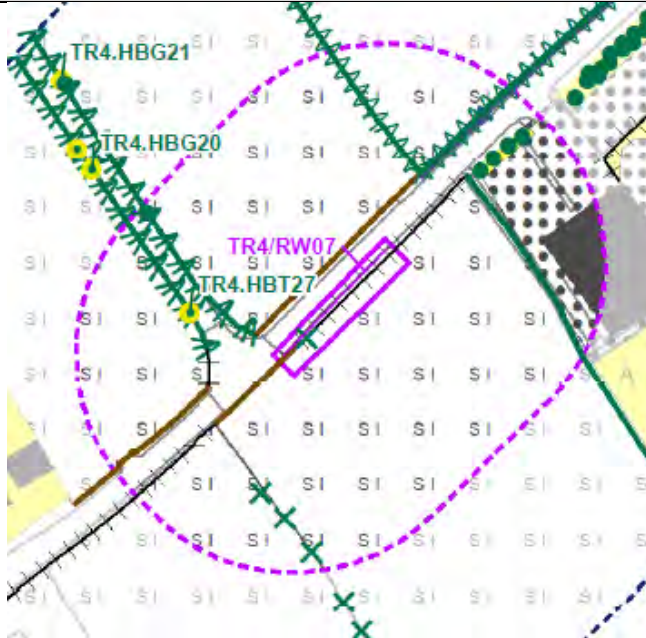



Works ID	TR3/RW10	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km				Non Statutory Designated Wildlife Sites within 2km	
Salthill and Bellman Park Quarry SSSI	3.5km south east of the site	Hodder River Section	5km south west of the 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"><li>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.</li><li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the road verge, therefore it is assumed the adjacent hedgerow will not be impacted by the proposals.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields).</li><li>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.</li></ul>		

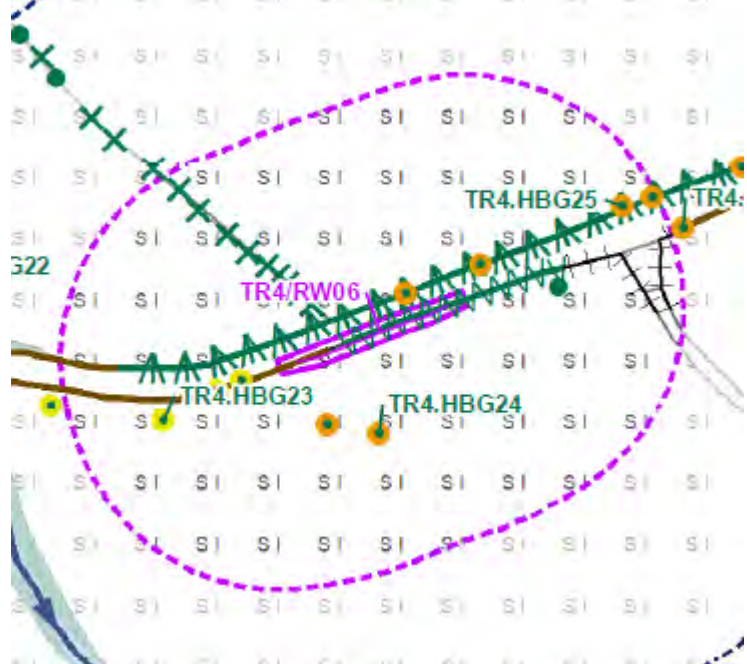


<b>Works ID</b>	TR4/RW09	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>				<b>Non Statutory Designated Wildlife Sites within 2km</b>	
Salthill and Bellman Park Quarry SSSI	3.1km south east of the site	Salthill 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
<b>Historic Species Records</b>					
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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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			TR4.HBG16 	TR4.HTN59 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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.</li> <li>The woodland at TR4.HTN59 has potential for nesting birds and foraging and commuting habitat for bats.</li> <li>The hedgerow has nesting bird potential. The adjacent SI grassland has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 60 m of species-rich intact hedgerow and trees as well as associated SI verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		






<b>Works ID</b>	TR4/RW08	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>				<b>Non Statutory Designated Wildlife Sites within 2km</b>	
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
<b>Historic Species Records</b>					
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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present within 500m of the site		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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			TR4.HTN57 	TR4.HTN56 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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).</li> <li>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).</li> <li>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).</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent habitats).</li> <li>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.</li> </ul>		

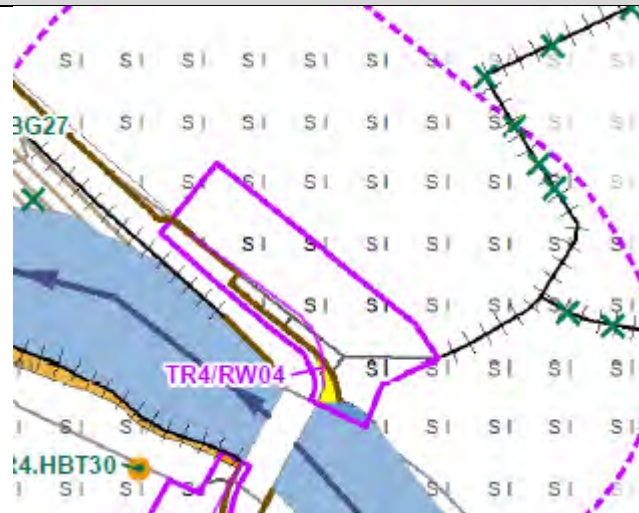
Works ID	TR4/RW07	Survey Date	08-10/12/2020, 14-16/12/2020	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW03 Biological Heritage Site	2km north west of site	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"><li>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 tress will occur.</li><li>The scrub and adjacent SI grassland have nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be not reinstated on completion of the works.</li><li>Works appear to be limited to the road verge with a small loss of scrub and SI field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields).</li></ul>		



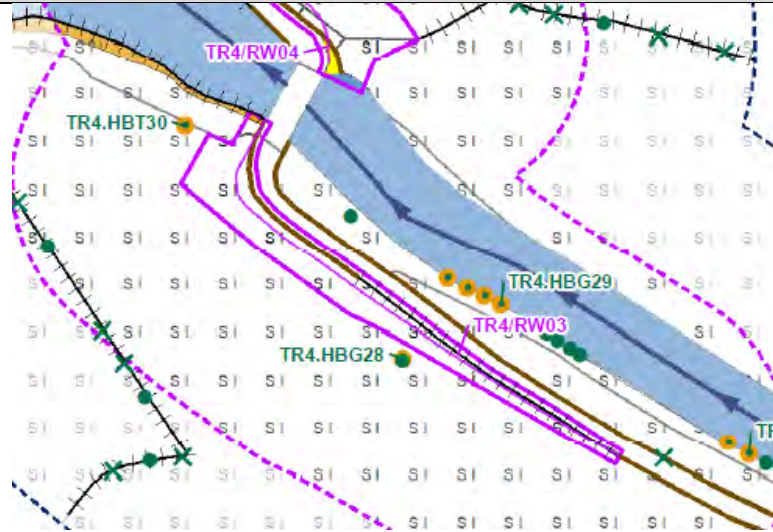


<b>Works ID</b>	TR4/RW06	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>			
Salthill and Bellman Park Quarry SSSI	2.1km south of site	74NW05 Biological 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		
<b>Historic Species Records</b>					
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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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			TR4.HBG23 	TR4.HBG25 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>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.</li> <li>The hedgerow, wall and adjacent SI grassland have nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 30 m of species-rich intact hedgerow and associated verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> </ul>		

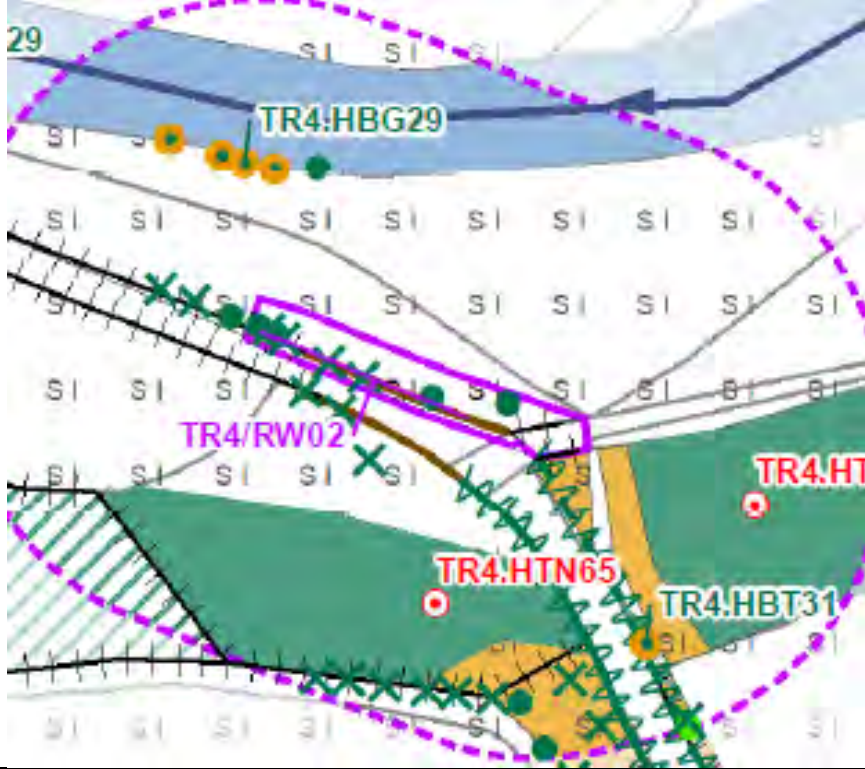




<b>Works ID</b>	TR4/RW05	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Salthill and Bellman Park Quarry SSSI	2.2km 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
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Poor semi-improved grassland Dry stone wall	Amenity grassland Poor semi-improved grassland Scattered scrub Buildings Bare ground Dry stone wall			TR4.HTN61 	TR4.HBG26 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The SI grassland has nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Works appear to be limited to the road verge with a small loss of connected SI field.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including hedgerows and adjacent fields).</li> </ul>		




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"><li>The dry stone wall, adjacent fields and River Ribble are likely to support nesting birds.</li><li>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).</li><li>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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will not be reinstated on completion of the works</li><li>Works appear to be limited to an area of SI grassland habitats and dry stone wall.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including wall, adjacent fields and river).</li><li>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)</li></ul>		



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				<div>TR4.HBT30</div> 		<div>TR4.HBG28</div> 
Protected Species Assessment			Summary of Constraints				
<ul style="list-style-type: none"><li>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.</li><li>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 tress will occur.</li><li>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).</li><li>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.</li></ul>			<ul style="list-style-type: none"><li>Habitats will not be reinstated on completion of the works</li><li>Works appear to be limited to an area of SI grassland habitat.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks (including wall, adjacent fields and river).</li><li>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.</li><li>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)</li></ul>				

<b>Works ID</b>	TR4/RW02	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
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		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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				
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The trees, hedgerow, scrub and adjacent SI grassland have nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>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.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Potential loss of priority habitat – further survey in the appropriate season is recommended.</li> <li>Mitigation for priority habitat loss will be required which needs agreeing with the LPA.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> </ul>		



<b>Works ID</b>	TR4/RW01	<b>Survey Date</b>	08-10/12/2020, 14-16/12/2020	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>				<b>Non Statutory Designated Wildlife Sites within 2km</b>	
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
<b>Historic Species Records</b>					
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				
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds present		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
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			TR4.HTN72 	TR4.HTN71 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>The adjacent woodland has nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to lack of potential breeding ponds (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be not reinstated on completion of the works.</li> <li>Works appear to be limited to the amenity and SI grassland road verge. No significant impacts anticipated.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks (including adjacent fields).</li> </ul>		



**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 2**

**Off-Site Highways Works – TR4 Target Note Report**

January 2022



## Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Project No: B27070CT  
Document Title: Proposed Bowland Section  
Supplementary Environmental Information (SEI)  
Appendix B7 Annex 2: Off-Site Highways Works – TR4 Target Note Report  
Document ID: LCC\_RVBC-BO\_SEI-Appendix B7 Annex 2  
Revision: 0  
Date: January 2022  
Client Name: United Utilities  
Author: Bowland Ecology Limited



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### 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		
<p>Approximately five scrapes within semi-improved neutral grassland, which have been purposefully excavated for lapwing (<i>Vanellus vanellus</i>) 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 (<i>Bufo bufo</i>) and common frog (<i>Rana temporaria</i>) are frequently observed along the roadside. Plant species present include brooklime (<i>Veronica beccabunga</i>), floating sweet grass (<i>Glyceria fluitans</i>), soft rush (<i>Juncus effusus</i>), water mint (<i>Mentha aquatica</i>), lesser spearwort (<i>Ranunculus flammula</i>), water starwort species (<i>Callitriche</i> sp.), bulbous rush (<i>Juncus bulbosus</i>), jointed rush (<i>Juncus articulatus</i>) and horsetail species (<i>Equisetum</i> sp.).</p> <p>Habitat Condition (provisional): Good (Score 3)</p>		
TR4.TN16		
<p>A traditional hay meadow which has been restored. The meadow is cut once per year, after 15<sup>th</sup> July, with no fertiliser added and it is lightly sheep grazed. Species include yellow rattle (<i>Rhinanthus minor</i>), common mouse ear (<i>Cerastium fontanum</i>), creeping thistle (<i>Cirsium arvense</i>), bird’s-foot trefoil (<i>Lotus corniculatus</i>), meadow buttercup (<i>Ranunculus acris</i>), common sorrel (<i>Rumex acetosa</i>), eyebright species (<i>Euphrasia</i> sp.), ribwort plantain (<i>Plantago lanceolata</i>), sweet vernal grass (<i>Anthoxanthum odoratum</i>), meadow foxtail (<i>Alopecurus pratensis</i>), Yorkshire fog (<i>Holcus lanatus</i>), crested dog’s-tail (<i>Cynosurus cristatus</i>), common yellow sedge (<i>Carex demissa</i>), meadow vetchling (<i>Lathyrus pratensis</i>), common bent (<i>Agrostis capillaris</i>), Timothy (<i>Phleum pratense</i>), creeping bent (<i>Agrostis stolonifera</i>), meadow grass species (<i>Poa</i> sp.), meadowsweet (<i>Filipendula ulmaris</i>), horsetail species, heath bedstraw (<i>Galium saxatile</i>), lesser stitchwort (<i>Stellaria graminea</i>), marsh thistle (<i>Cirsium palustre</i>), lesser celandine (<i>Ranunculus ficaria</i>), autumn hawkbit (<i>Scorzoneroide</i></p>		

*autumnalis*) and sneezewort (*Achillea ptarmica*). Potential for ground nesting birds, and small mammals at the edges which are left uncut.

Habitat Condition (provisional): Good (Score 3)

TR4.TN49



Large pile of spoil and manure which is adjacent to the access track and is leeching pollutants into the surrounding grassland.

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

TR4.TN50






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 (*Calluna vulgaris*), with abundant bilberry (*Vaccinium myrtillus*), and a carpet of mosses (rarely *Sphagnum*s), several sedge species, mat grass (*Nardus stricta*), crowberry (*Empetrum nigrum*), willowherb species (*Epilobium* sp.), foxglove (*Digitalis purpurea*), broadleaved dock (*Rumex obtusifolius*), bracken (*Pteridium aquilinum*), some immature self-seeded rowan (*Sorbus aucuparia*) and willow (*Salix* sp.), red fescue (*Festuca rubra*), heath woodrush (*Luzula multiflora*) and wavy hair grass (*Deschampsia flexuosa*). The heather shrub is mature and all of a similar age. Potential for nesting birds, foraging bats, small mammals, amphibians, reptiles and otter (*Lutra lutra*) 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.





Habitat Condition (provisional): Moderate (Score 2)

TR4.TN51








<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>	



TR4.TN71	
<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>	
TR4.TN72	
<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>	
TR4.TN73	
<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 (*Potentilla* 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 (*Tussilago farfara*), common ragwort, spear thistle (*Cirsium vulgare*), white clover (*Trifolium repens*), variegated yellow archangel (*Lamium 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



stone wall surrounds the wood and there is a watercourse running through the centre (TR4.HWC3).

The woodland provides suitable habitat for small mammals (including hedgehog), large mammals (including badger (*Meles meles*)), nesting birds, terrestrial habitat for amphibians and also foraging, commuting and roosting habitat for bats.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN5



Snowberry (*Symphoricarpos albus laevigatus*) 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 (*Fagus sylvatica*), with ivy (*Hedera helix*) and locally dominant areas of snowberry. The snowberry has extended from the residential garden and spread along the roadside.

Habitat condition (provisional): Poor (Score 1)

TR4.HTN6



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.

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

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	

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.

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.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN10



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.

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

TR4.HTN11






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 (*Quercus petraea*), ash, horse chestnut, sweet chestnut (*Castanea sativa*) 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 *Polytrichum commune*.

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

Habitat condition (provisional): Moderate (Score 2)



TR4.HTN12	
<p>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 than 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. (<i>Poa</i> sp.), perennial rye grass (<i>Lolium perenne</i>), 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.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HTN13	
<p>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.</p> <p>Habitat condition (provisional): N/A (assessment not applicable)</p>	

TR4.HTN14	
	<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>
TR4.HTN15	
	<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>

TR4.HTN16	
<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>	
TR4.HTN17	
<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>	
TR4.HTN18	



Marshy grassland dominated by soft rush with hard rush (*Juncus inflexus*) and compact rush. Frequent *Polytrichum* moss, feather moss, occasional *Sphagnum* moss species, spear thistle and marsh bedstraw (*Galium palustre*) are present. Rare broadbuckler fern and male fern. The area holds standing water and is boggy.

This area of marshy grassland is suitable for amphibians, nesting birds and small mammals.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN19



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 (*Poa trivialis*) and mat grass with frequent purple moor grass (*Molinia caerulea*), low lying bilberry (*Vaccinium myrtillus*) (up to 2 cm tall) and heath bedstraw. There is occasional heath rush (*Juncus squarrosus*), crowberry (*Empetrum nigrum*), lichens, feather moss, *Polytrichum* moss, and rarely *Sphagnum* moss, marsh cinquefoil (*Comarum palustre*) and wavy hairgrass (*Deschampsia flexuosa*).

This area has potential for reptiles, small mammals, amphibians and nesting birds.



Habitat condition (provisional): Moderate (Score 2)



TR4.HTN20





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 (*Taraxacum officinale* 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.




Habitat condition (provisional): Poor (Score 1)

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>	

TR4.HTN24	
<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>	
TR4.HTN25	
<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>	

TR4.HTN29	
<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>	
TR4.HTN30	
<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>	
TR4.HTN31	

Wet heath / acid grassland mosaic, located on an east facing, gently sloping hillside. Species recorded include ling, hare's tail cottongrass (*Eriophorum vaginatum*), bilberry, *Hypnum jutlandicum*, *Polytrichum* sp., waved silk moss (*Plagiothecium undulatum*), *Sphagnum compactum* and *S. capillifolium*, cranberry, crowberry and cowberry (*Vaccinium vitis-idaea*). The area is lightly grazed by sheep and game birds (pheasant (*Phasianus colchicus*) and red grouse (*Lagopus lagopus*)) are also present. The heather is mature shrubs.

The habitat is suitable for nesting birds, reptiles, amphibians and small mammals. Also a suitable area for foraging bats and foraging birds of prey.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN32



Marshy grassland located on an east facing, gently sloping hillside. The area is dominated by soft rush, with marsh thistle, marsh willowherb, bittercress sp., *Sphagnum fallax* occasionally present, *Polytrichum* sp., Yorkshire fog, *Rhytiadelphus squarrosus*, heath bedstraw, hard rush and tufted hairgrass.

The habitat is suitable for nesting birds, amphibians, reptiles and small mammals.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN33







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.



The verge is suitable for amphibians, reptiles, small mammals and nesting birds.

Habitat condition (provisional): Moderate (Score 2)






TR4.HTN34	
<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>	
TR4.HTN35	
<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</i> sp.), 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</i> sp.) 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>

TR4.HTN39	
	<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>
TR4.HTN40	
	<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>







TR4.HTN41	
<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>	
TR4.HTN42	
<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>	
TR4.HTN43	No photo.
<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>	




TR4.HTN44	
<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>	
TR4.HTN45	
<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>	

TR4.HTN46	
<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>	
TR4.HTN47	
<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>	
TR4.HTN48	



<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>		
TR4.HTN49		
<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>		
TR4.HTN50		
<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 <b>potentially suitable for use by otter as a holt</b>.</p> <p>Habitat condition (provisional): N/A (not applicable)</p>		

TR4.HTN51	
<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>	
TR4.HTN52	
<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>	

TR4.HTN53	
<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>	
TR4.HTN54	
<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>	
TR4.HTN55	



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.

Habitat condition (provisional): Poor (Score 1)

TR4.HTN56



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).

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

TR4.HTN57



Semi-natural broadleaved woodland located on both sides of the road. The canopy is composed of ash, oak species, beech, alder and birch species (*Betula* 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 (*Carex pendula*), lords-and-ladies (*Arum maculatum*), ivy, bramble, dog's mercury (*Mercurialis perennis*), 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.

The woodland has potential for large mammals (including badger setts), nesting birds, roosting, commuting and foraging bats, small mammals and terrestrial habitats for amphibians.




Habitat condition (provisional): Moderate (Score 2)

TR4.HTN58

No photo.

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).

Habitat condition (provisional): Poor (Score 1)

TR4.HTN59	
	<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>
TR4.HTN60	
	<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>
TR4.HTN61	

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.

The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN62

No photo.

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).

This area provides habitat for nesting birds, foraging and commuting bats.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN63



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.

The trees have potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Poor (Score 1)

TR4.HTN64





Semi-natural broadleaved woodland with a canopy of semi-mature ash, oak species and mature blackthorn (*Prunus spinosa*). 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.

The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN65



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.

The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN66

No photo.

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.

The area provides suitable habitat for nesting birds, commuting and foraging bats, small mammals, amphibians and large mammals (including badger).

Habitat condition (provisional): Poor (Score 1)

TR4.HTN67



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.

The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN68



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.

The woodland has potential for nesting birds, commuting/ foraging / roosting bats, small mammals and terrestrial habitat for amphibians.

Habitat condition (provisional): Moderate (Score 2)

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>	

TR4.HTN74	
	<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>
TR4.HTN75	
	<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.	

Area of flush and wet heath / acid grassland mosaic on the eastern side of TR4.HWC9. This area has a carpet of *Sphagnum* mosses beneath ling and soft rush. Species recorded include *Polytrichum commune*, cranberry, cowberry, crowberry, *Sphagnum palustre*, *Sphagnum capillifolium*, *Sphagnum fallax*, heath bedstraw, bilberry and cross leaved heath.

The area is suitable for reptiles, amphibians, nesting birds and foraging bats.

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN84



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 (*Lonicera periclymenum*), 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).

Habitat condition (provisional): Moderate (Score 2)

TR4.HTN85



Piles of brash and deadwood from previously fallen tree. This creates good habitat for small mammals (including hedgehog), amphibians and nesting birds.

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

TR4.HTN86



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).

Habitat condition (provisional): Poor (Score 1)

TR4.HTN87



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 *Sphagnum* mosses, including *S.fallax*, *S.palustre* and *S.papilosum*. The flush is a dense sward of soft rush with a dense carpet of *Sphagnum* mosses beneath (same species). Additional moss species present within the flush area include *Hypnum jutlandicum* and *Polytrichum commune*. This area is sensitive to pollution and provides habitat for amphibians, reptiles, small mammals, nesting birds and foraging bats.

Habitat condition (provisional): Moderate (Score 2)

### Watercourses


TR4.WC4





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 (*Potentilla anserina*), 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.



Habitat Condition (provisional): Moderate (Score 2)



TR4.WC21	
<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>	
TR4.WC22	
<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>	
TR4.WC23	
<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>	

TR4.HWC1	
<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>	
TR4.HWC2	
<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>	





TR3.HWC3	
<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>	
TR4.HWC4	
<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>	







TR4.HWC5	
<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>	
TR4.HWC6	
<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	
<p>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.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR4.HWC8	
<p>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.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	

TR4.HWC9	
<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>	
TR4.HWC10	
<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>	








TR4.HWC11	
<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>	
TR4.HWC12	
<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>	



TR4.HWC13	
<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>	
TR4.HWC14	
<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	
<p>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.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR4.HWC16	
<p>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.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	







TR4.HWC17	
<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>	
TR4.HWC18	 
<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>	


TR4.HWC19	
<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>	
TR4.HWC20	
<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>	

TR4.HWC21	
<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>	
TR4.HWC22	
<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>	



TR4.HWC23	
<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>	
TR4.HWC24	
<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>	

TR4.HWC25	
<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>	
TR4.HWC26	
<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>	
TR4.HWC27	No photo.
<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)

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**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 3**

**Off-Site Highways Works – TR4 Hedgerows Report**

January 2022



## Proposed Bowland Section

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### Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

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Supplementary Environmental Information (SEI)  
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#### 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).		

<p>Limitations to the survey:</p>	<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>
<h3>4 Survey Results</h3>	
<p>TR4.HH1</p>	
<p>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 (<i>Crataegus monogyna</i>), with additional ash (<i>Fraxinus excelsior</i>), blackthorn (<i>Prunus spinosa</i>) and rose species (<i>Rosa</i> sp.; total four woody species). Schedule 2 ground flora species recorded include lady fern (<i>Athyrium filix-femina</i>), dog's mercury (<i>Mercurialis perennis</i>) and barren strawberry (<i>Potentilla sterilis</i>). Additional ground flora species recorded include crosswort (<i>Cruciata laevipes</i>), cinquefoil (<i>Potentilla simplex</i>), thistle species (<i>Cirsium</i> sp), ground ivy (<i>Glechoma hederacea</i>) and honeysuckle (<i>Lonicera periclymenum</i>). 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).</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></p>	
<p>TR4.HH2</p>	

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 ground flora 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



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 (*Veronica beccabunga*). There is one connecting hedgerow (TR4.HH7).

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.HH9



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).

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.HH10






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 (*Rubus fruticosus agg.*), common nettle, creeping thistle, red campion, crosswort, black knapweed, common daisy (*Bellis perennis*), ground ivy, ivy, lesser celandine, coltsfoot, and spear thistle (*Cirsium vulgare*).

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.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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; 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.


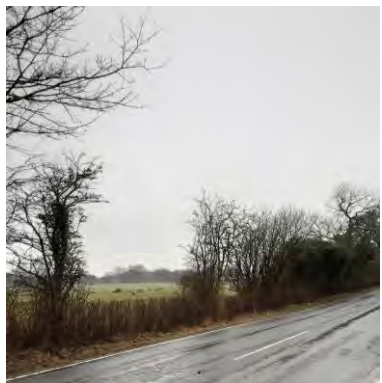
TR4.HH20





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.**




TR4.HH21	
<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 &amp; 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.HH22	
<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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p>No Wildlife &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></p>	



TR4.HH26	
	<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 &amp; 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.HH27	
	<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 &amp; 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.HH28	
	<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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></p>
TR4.HH29	
	<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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></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 &amp; Countryside Act protected species have been identified to be present.</p> <p><b>This hedgerow classifies under ecological criteria as 'Important' under The Hedgerow Regulations 1997.</b></p>	
TR4.HH32	



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).

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.HH33



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.

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.HH34

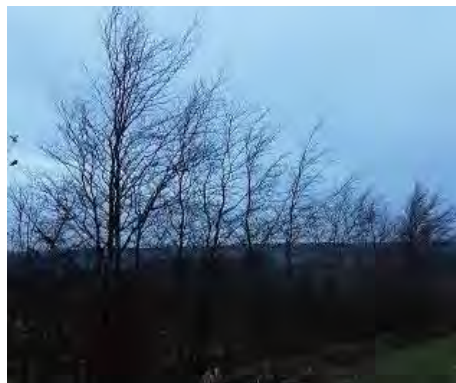
No photo.

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.

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.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 Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 4**

**Off-Site Highways Works – TR4 Bat Tree Report**

January 2022



**Haweswater Aqueduct Resilience Programme - Proposed Bowland Section**

Project No: B27070CT  
Document Title: Proposed Bowland Section  
Supplementary Environmental Information (SEI)  
Appendix B7 Annex 4: Off-Site Highways Works – TR4 Bat Tree Report  
Document ID: LCC\_RVBC-BO\_SEI-Appendix B7 Annex 4  
Revision: 0  
Date: January 2022  
Client Name: United Utilities  
Author: Bowland Ecology Limited

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**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>		



Weather Conditions:	<p>08/12/2020 – Cloud cover (8/8), Beaufort Wind F5 SE, 8 °C, raining</p> <p>09/12/2020 – Cloud cover (5/8), Beaufort Wind F3 W, 7 °C, no precipitation</p> <p>10/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SSE, 6 °C, no precipitation</p> <p>14/12/2020 – Cloud cover (8/8), Beaufort Wind F4 SW, 8 °C, raining</p> <p>15/12/2020 – Cloud cover (3/8), Beaufort Wind F4 S, 9 °C, no precipitation</p> <p>16/12/2020 – Cloud cover (5/8), Beaufort Wind F5 S, 9 °C, light rain</p> <p>13/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NW, 3 °C, moderate rain.</p> <p>15/01/2021 – Cloud cover (1/8), Beaufort Wind F1 NW, 0 °C, no precipitation</p> <p>19/01/2021 – Cloud cover (8/8), Beaufort Wind F1 NE, 8 °C, heavy rain</p> <p>05/03/2021 – Cloud cover (6/8), Beaufort Wind F2 N, 5 °C, dry.</p> <p>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>
Limitations to the survey:	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.

### 4 Survey Results

#### Individual Trees

TR4.BT34



NGR: SD 72251 45131

Species: Oak species (*Quercus* sp.)

Categorisation: Low potential




TR4.HBT1






NGR: SD 70402 49244




Species: Ash (*Fraxinus excelsior*)




Categorisation: Moderate potential




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








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



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

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





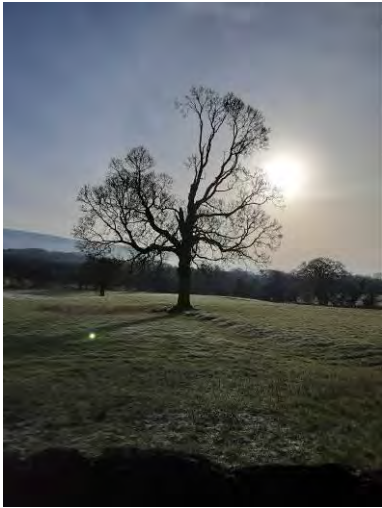


TR4.HBT17	
	<p>NGR: SD 72222 45511</p> <p>Species: Ash</p> <p>Categorisation: Low potential</p>
TR4.HBT18	
	<p>NGR: SD 72235 45535</p> <p>Species: Oak species</p> <p>Categorisation: Moderate potential</p>
TR4.HBT19	
	<p>NGR: SD 72249 45447</p> <p>Species: Elm species (<i>Ulmus</i> sp.)</p> <p>Categorisation: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




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

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









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

TR4.HBG6	
	<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: <b>High potential</b></p>
TR4.HBG7	
	<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>
TR4.HBG8	
	<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</p> <p>Species: Alder</p> <p>Number of trees: 4</p> <p>Categorisation: Moderate potential</p>
TR4.HBG10	
	<p>NGR: SD 70490 48922</p> <p>Species: Alder</p> <p>Number of trees: 5</p> <p>Categorisation: Moderate potential</p>
TR4.HBG11	
	<p>NGR: SD 70490 48876</p> <p>Species: Sycamore</p> <p>Number of trees: 2</p> <p>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</p> <p>Species: Sycamore and ash</p> <p>Number of trees: 4</p> <p>Categorisation: Moderate potential</p>
<p>TR4.HBG16</p> 	<p>NGR: SD 72414 44326</p> <p>Species: Ash, sycamore and alder</p> <p>Number of trees: 8</p> <p>Categorisation: Moderate potential</p>
<p>TR4.HBG17</p> 	<p>NGR: SD 72399 44394</p> <p>Species: Sycamore</p> <p>Number of trees: 3</p> <p>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</p> <p>Species: Holly</p> <p>Number of trees: 2</p> <p>Categorisation: Low potential</p>
TR4.HBG22	
<p>No photograph</p>	<p>NGR: SD 75378 44987</p> <p>Species: Alder, ash and beech</p> <p>Number of trees: over 20</p> <p>Categorisation: Moderate potential</p>
TR4.HBG23	
	<p>NGR: SD 75437 44958</p> <p>Species: Beech and elm</p> <p>Number of trees: 4</p> <p>Categorisation: Low potential</p>

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

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





TR4.HBG30	
	<p>NGR: SD 76258 44773</p> <p>Species: Ash</p> <p>Number of trees: 2</p> <p>Categorisation: Moderate potential</p>
TR4.HBG31	
	<p>NGR: SD 76437 44650</p> <p>Species: Oak species</p> <p>Number of trees: 4</p> <p>Categorisation: Moderate potential</p>
TR4.HBG32	
	<p>NGR: SD 76805 44212</p> <p>Species: Willow species, sycamore and ash</p> <p>Number of trees: 20</p> <p>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	
No photo.	<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	
No photo.	<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.



THE  
ENVIRONMENT  
PARTNERSHIP

**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 5**

**Off-Site Highways Works – TR3 Ecology Data Summaries**

January 2022





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## Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

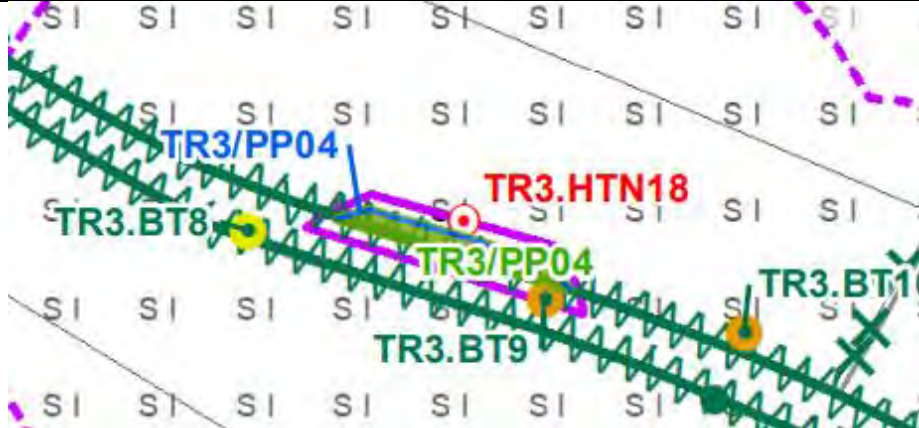


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Document Title: Proposed Bowland Section  
Supplementary Environmental Information (SEI)  
Appendix B7 Annex 5: Off-Site Highways Works – TR3 Ecology Data Summaries  
Document ID: LCC\_RVBC-BO\_SEI-Appendix B7 Annex 5  
Revision: 0  
Date: January 2022  
Client Name: United Utilities  
Author: Kim Gallaher  
Author: Liz Seal

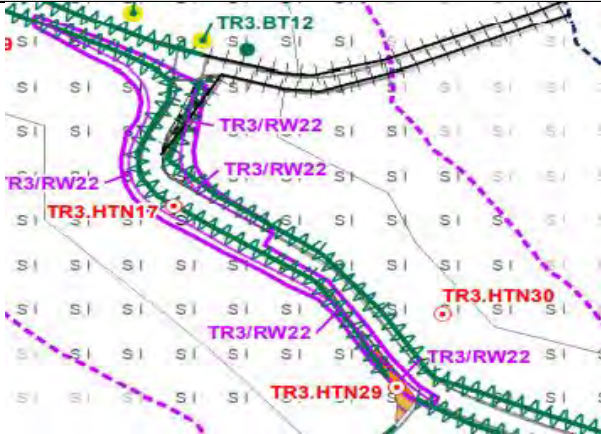


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### Document history and status

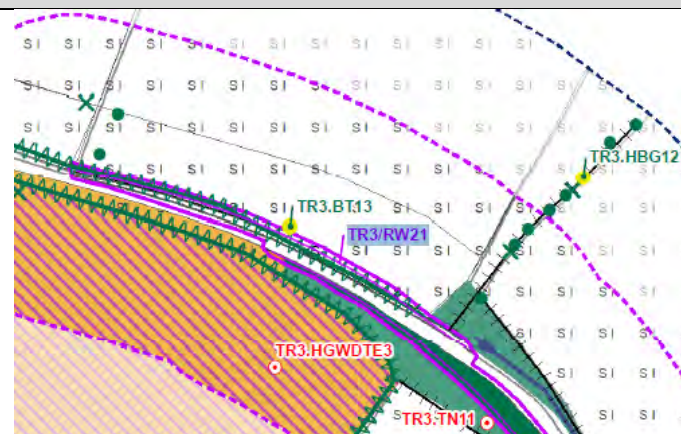

Revision	Date	Description	Author	Checked	Reviewed	Approved

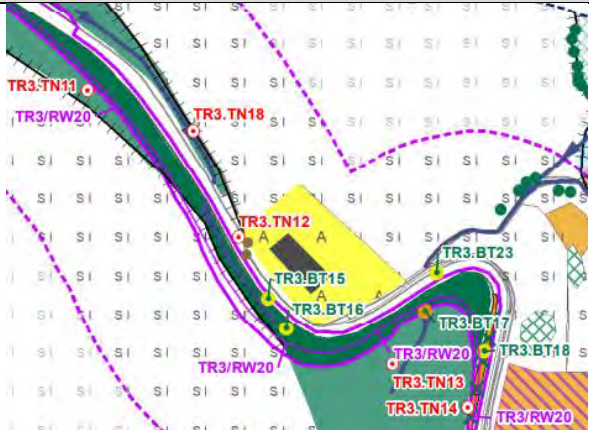


**TR3 Bowland Highway Improvements – Ecology Baseline**

Works ID	TR3/PP04	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	900m north east of the site	Ancient & Semi-Natural Woodland	120m south west of the site	Curlew	Within 1km tetrad of site
Robert Hall Moor SSSI	2.4km north east of the site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood)	150m south of site	Indian balsam	Within 1km tetrad of site
Roeburndale Woods SSSI	450m south west of the site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood)	300m north of site	Monkey flower	Within 1km tetrad of site
Far Holme Meadow SSSI	3.5km south east of the site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	1.2km north east of site	Bluebell	Within 1km tetrad of site
		Wray Wood Moor	1.5km south east of site	Keeled skimmer	Within 1km tetrad of site
		Scale Wood	1.8km south east of site	Brown hare	Within 1km tetrad of site
		Haw Wood	2km east of site		
		River Hindburn	600m north of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 460m east of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland Scattered broadleaved trees	Species-rich intact hedgerow Poor semi-improved grassland Scattered broadleaved trees			TR3.HH8 	TR3.HBT9 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>One tree within the works area has moderate potential to support roosting bats (TR3.BT9). Removal of this tree may be required to facilitate works.</li> <li>Another tree in close proximity to the works has low potential to support roosting bats (TR3.BT8). This tree will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li> <li>The hedgerow has nesting bird potential.</li> <li>The SI grassland has ground nesting bird potential</li> <li>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).</li> <li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 450m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works</li> <li>Both sides of the road contain mature, species-rich hedgerows (TR3.H8 and TR3.H9). The hedgerows are located on banks with occasional mature trees.</li> <li>Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated bank habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>It appears the tree with moderate bat roost potential may require removal to facilitate the works. Consideration should be given to retaining this tree. If removal is required, further surveys will be required in relation to roosting bats before works can commence.</li> <li>Works should avoid any impacts to trees with bat potential in proximity of the site. If any branches require removal to facilitate works, further surveys will be required in relation to roosting bats before works can commence.</li> </ul>		



<b>Works ID</b>	TR3/RW22	<b>Survey Date</b>	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Clear Beck Meadow SSSI	900m north east of the site	Ancient & Semi-Natural Woodland	120m south west of the site	Curlew	Within 1km tetrad of site
Robert Hall Moor SSSI	2.4km north east of the site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood)	150m south of site	Indian balsam	Within 1km tetrad of site
Roeburndale Woods SSSI	450m south west of the site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood)	300m north of site	Monkey flower	Within 1km tetrad of site
Far Holme Meadow SSSI	3.5km south east of the site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	1.2km north east of site	Bluebell	Within 1km tetrad of site
		Wray Wood Moor	1.5km south east of site	Keeled skimmer	Within 1km tetrad of site
		Scale Wood	1.8km south east of site	Brown hare	Within 1km tetrad of site
		Haw Wood	2km east of site		
		River Hindburn	600m north of site		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
1 pond within 500m of the site 390m east of site		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Species-rich intact hedgerows Poor semi-improved grassland Marshy grassland	Species rich intact hedgerows Poor semi-improved grassland Marshy grassland Scattered broadleaved trees			TR3.HTN17 	TR3.HTN29 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>Two trees adjacent to the site have low potential to support roosting bats (TR3.BT11 and TR3.BT12). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li> <li>The hedgerows have nesting bird potential</li> <li>The SI grassland and small corner of marshy grassland has ground nesting bird potential</li> <li>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).</li> <li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 350m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will not be reinstated on completion of the works</li> <li>Current proposals will require removal of approximately 220 m of species-rich intact hedgerow.</li> <li>Hedgerows could be classed as important under the Hedgerow Regulations 1997.</li> <li>Mitigation for hedgerow loss will be required which needs agreeing with the LPA.</li> <li>Loss of small areas of adjacent species-poor semi-improved grassland and a small area of marshy grassland (rush dominated pasture) is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		




Works ID	TR3/RW21	Survey Date	24/11/2020 - 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.3km north west of site	Ancient & Semi-Natural Woodland	250m north of site	Curlew	Within 1km tetrad of site
Robert Hall Moor SSSI	2.2km north east of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood)	150m south of site	Indian balsam	Within 1km tetrad of site
Roeburndale Woods SSSI	1.1km south west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood)	150m north of site	Monkey flower	Within 1km tetrad of site
Far Holme Meadow SSSI	2.7km south east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	700m north east of site	Bluebell	Within 1km tetrad of site
		Wray Wood Moor	1.1km south of site	Keeled skimmer	Within 1km tetrad of site
		Scale Wood	1.1m south east of site	Brown hare	Within 1km tetrad of site
		Goodber Common (Including Summersgill Fell and White Moss	1.5km south east of site	Bluebell	Within 2km tetrad of the site
		Collinson’s Wood	1.3km north east of site		
		Cowkins Coppice	1.4km north east of site		
		Haw Wood	1.5km north west of site		
		River Hindburn	900m north of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 350m east of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland Scattered broadleaved tree	Species-rich intact hedgerow Poor semi-improved grassland Semi-natural broadleaved woodland Scattered broadleaved trees Semi-improved neutral grassland Marshy grassland Running water	<div></div> <div>North side of the road = RW21 South side of the road = RW20</div>		<div>TR3.BT13</div> <div></div>	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>One tree within the hedgerow to be removed has low potential to support roosting bats (TR3.BT13).</li><li>The hedgerows have nesting bird potential.</li><li>The adjacent SI grassland (field not verge) and marshy grassland have ground nesting bird potential</li><li>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).</li><li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 350 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Current proposals will require removal of approximately 130 m of species-rich intact hedgerow and associated SI grass verge that is connected to woodland habitat.</li><li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>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.</li><li>It appears the tree with low bat roost potential is likely to require removal to facilitate the works. Consideration should be given to retaining this tree by siting road widening works within the verge on the south side of the road (extending RW20). If this tree requires removal further surveys will be required in relation to roosting bats before works can commence.</li><li>Works will result in the small loss of SI grassland associated with the roadside verge and adjoining fields. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>No direct impacts to the nearby watercourse are anticipated.</li></ul>		

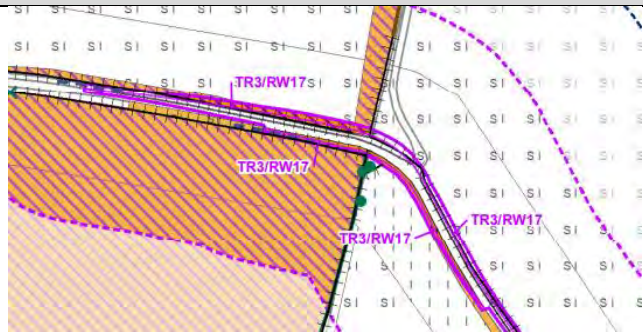
Works ID	TR3/RW20	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.3 north west of site	Ancient & Semi-Natural Woodland	400m north of site	White-barred Twist	Within 100m tetrad containing site
Roeburndale Woods SSSI	1.2km south west of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood)	100m south of site	Bluebell	Within 2km tetrad containing the site
Robert Hall Moor SSSI	2.3km north west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood)	400m north west of site	Lily-of-the-valley	Within 2km tetrad containing the site
Far Holme Meadow SSSI	2.5km south east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	600m north east of site	Curlew	Within 1km tetrad of site
		Wray Wood Moor	800m south of site	Indian balsam	Within 1km tetrad of site
		Scale Wood	750m south east of site	Monkey flower	Within 1km tetrad of site
		Goodber Common (Including Summersgill Fell and White Moss	1.4km south east of site	Bluebell	Within 1km tetrad of site
		Collinson's Wood	1.3km north east of site	Keeled skimmer	Within 1km tetrad of site
		Cowkins Coppice	1.4km north east of site	Brown hare	Within 1km tetrad of site
		Haw Wood	1.6km north east of site	Bluebell	Within 2km tetrad of the site
		River Hindburn	1.3km north of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 250m north east of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-natural broadleaved woodland Poor semi-improved grassland Running water Scattered broadleaved trees Scattered scrub Semi-improved neutral grassland	Semi-natural broadleaved woodland Poor semi-improved grassland Running water Scattered broadleaved trees Scattered and dense scrub Semi-improved neutral grassland Amenity Grassland Scattered introduced scrub Building				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>A number of trees with bat roosting potential fall within the works area: <ul style="list-style-type: none"> <li>1 x moderate potential to support roosting bats (TR3.BT17)</li> <li>3 x low potential to support roosting bats (TR3.BT15, TR3.BT16 &amp; TR3.BT18)</li> </ul> </li> <li>One tree adjacent to the site has low potential to support roosting bats (TR3.BT23).</li> <li>One tree within approx. 15m of the works has high potential to support roosting bats (TR3.BT19).</li> <li>The woodland (TR3.TN11 &amp; TR3.TN13) has potential to support nesting birds, foraging and commuting bats and badger setts although no evidence found.</li> <li>Native bluebells <i>Hyacinthoides non-scripta</i> (Schedule 8) were recorded within the woodland on site (TR3.TN13)</li> <li>The adjacent SI grassland (field not verge) has ground nesting bird potential.</li> <li>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).</li> <li>Terrestrial amphibians could be present across the site due to distance of nearest potential breeding pond (c 250m).</li> <li>Relatively short section of watercourse lost which appears culverted under the road and disappears as the road bends considered highly unlikely to support water vole or otter.</li> <li>Another watercourse passes under the road and appears to be a tributary of Gill Beck. Works do not appear to impact this watercourse and it is unlikely to support water vole or otter.</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will not be reinstated on completion of the works.</li> <li>Current proposals will require removal of semi-natural broadleaved woodland.</li> <li>Mitigation for woodland loss will be required which needs agreeing with the LPA.</li> <li>Works may result in the destruction/removal of native bluebell. Consideration should be given to translocating bulbs to adjacent retained woodland habitats where feasible.</li> <li>Loss of small areas 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 (not applicable for verge).</li> <li>It appears the tree with moderate bat roost potential and three trees with low bat roost potential are likely to require removal to facilitate the works. Consideration should be given to retaining at least the moderate tree (which is on the edge of the works). If any of these trees require removal further surveys will be required in relation to roosting bats before works can commence.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>ECoW required to check site for protected species prior to site clearance (amphibians/reptiles).</li> <li>Stand of potential <i>Cotoneaster</i> and a stand of <i>Montbretia (Crocasmia x crocosmiiflora)</i> (Schedule 9 invasive species) recorded adjacent to the site in close proximity to the works (TR3.TN12). Unintentional spread of these species into the wild must be avoided.</li> <li>Small section of watercourse assumed lost/culverted (approx. 50 m). No significant impacts anticipated.</li> </ul>		

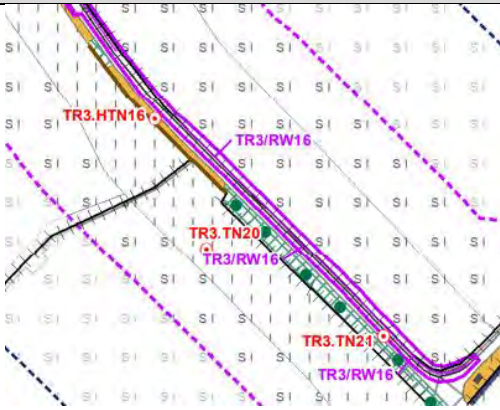




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Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.4km north west of site	Ancient & Semi-Natural Woodland	600m north west of site	Bluebell	Within 2000m tetrad containing the site
Robert Hall Moor SSSI	2.3km north east of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood)	200m west of site	Lily-of-the-valley	Within 2000m tetrad containing the site
Roeburndale Woods SSSI	1.2km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood)	600m north west of site	Curlew	Within 1000m tetrad containing the site
Far Holme Meadow SSSI	2.4km south east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	700m north of site	Bluebell	Within 1000m tetrad containing the site
		Wray Wood Moor	700m south of site	White-barred Twist	Adjacent to site
		Scale Wood	600m south of site	Brown Long-eared Bat	600m north east of site
		Goodber Common (Including Summersgill Fell and White Moss	1.1km south of site	Common Pipistrelle	600m north east of site
		Collinson’s Wood	1.4km north east of site	Noctule Bat	600m north east of site
		Cowkins Coppice	1.6km north east of site	Soprano Pipistrelle	600m north east of site
		Haw Wood	1.2km north of site	Unidentified Bat	600m north east of site
		River Hindburn	1.3km north of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 240m north east of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Edge of Semi-natural broadleaved woodland Scattered scrub Bare ground Poor semi-improved grassland	Poor semi-improved grassland Semi-improved neutral grassland Marshy grassland Scattered scrub Semi-natural broadleaved woodland			<div>TR3.BT22</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>One tree adjacent to the site (within 10 m) has low potential to support roosting bats (TR3.BT22).</li><li>The adjacent woodland and scattered scrub has potential to support nesting birds, foraging and commuting bats and badger setts although no evidence found.</li><li>The adjacent SI grassland (field not verge) has ground nesting bird potential.</li><li>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).</li><li>Terrestrial amphibians could be present across the site due to distance of nearest potential breeding pond (c 240m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will not be reinstated on completion of the works.</li><li>Current proposals indicate possible loss of the edge of semi-natural broadleaved woodland – assumed that this loss could be avoided though tree branch removal may be required (no significant impact).</li><li>Loss of single scrub (tree – likely hawthorn)</li><li>Loss of relatively small areas of 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 (not applicable for verge).</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>ECoW required to check site for protected species prior to site clearance (amphibians/reptiles)</li><li>Works in proximity to tree with low potential to support roosting bats (TR3.BT22) considered unlikely to be impacted as offsite and on and embankment higher than the works.</li></ul>		

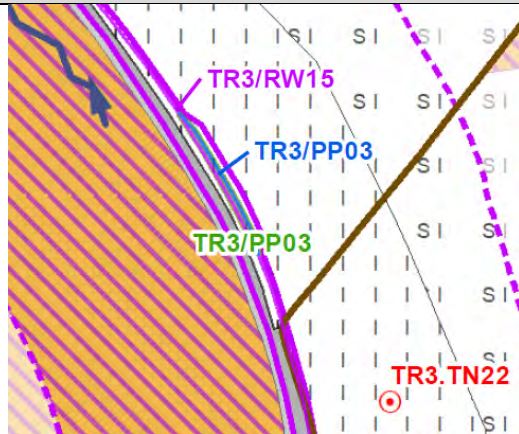



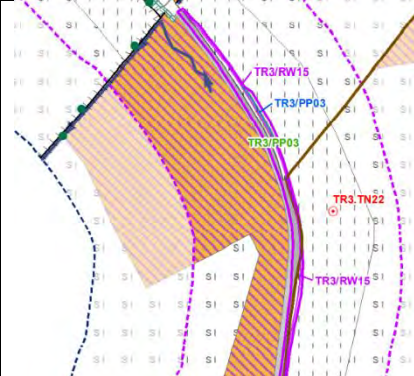

Works ID	TR3/RW18	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.6km north west of site	Ancient & Semi-Natural Woodland	750m north west of site	Bluebell	Within 2000m tetrad containing the site
Robert Hall Moor SSSI	2.3km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	400m west of site	Lily-of-the-valley	Within 2000m tetrad containing the site
Roeburndale Woods SSSI	1.5kmsouth west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	650m north west of site	Curlew	Within 1000m tetrad containing the site
Far Holme Meadow SSSI	2.1km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	650m north of site	Bluebell	Within 1000m tetrad containing the site
Bowland Fells SSSI	5km south of site	Wray Wood Moor BHS	800m south west of site	White-barred Twist	50m north east of site
Bowland Fells SPA	5km south of site	Scale Wood BHS	600m south of site	Brown Long-eared Bat	600m north east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	1km south of site	Common Pipistrelle	600m north east of site
		Collinson’s Wood BHS	1.2km north of site	Noctule Bat	600m north east of site
		Cowkins Coppice BHS	1.2km north east of site	Soprano Pipistrelle	600m north east of site
		Haw Wood BHS	1.1km north east of site	Unidentified Bat	600m north east of site
		River Hindburn BHS	1.1km north of site		
		Hole House and Lower Grassland BHS	1.7km east of site		
		Hole House Wood BHS	1.8km east of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
Ponds within 500m of the site 2 x 290m north east of site 1 x 350m northwest of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland (verge) Dry stone wall	Marshy grassland Poor semi-improved grassland Scattered scrub Dry stone wall			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Poor semi-improved grassland and marshy grassland adjacent to the site have potential to support ground nesting birds.</li><li>Limited scattered scrub adjacent to the site has potential to support nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (&gt; 250 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in the small loss of poor semi-improved grassland associated with the roadside verge</li><li>Loss of small areas of 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 (not applicable for verge).</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

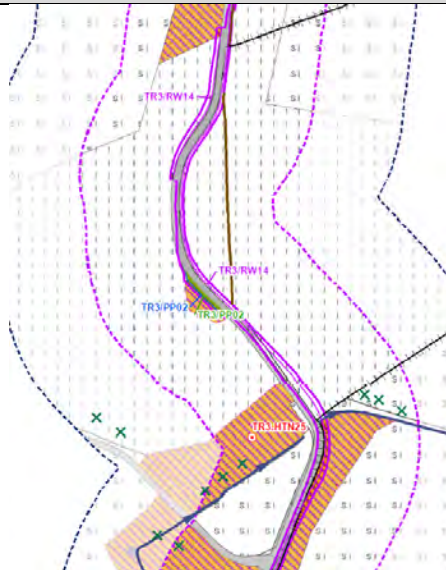

Works ID	TR3/RW17	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.9km north west of site	Ancient & Semi-Natural Woodland	600m north of site	Bluebell	Within 2000m tetrad containing the site
Robert Hall Moor SSSI	2.3km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	900m west of site	Lily-of-the-valley	Within 2000m tetrad containing the site
Roeburndale Woods SSSI	1.9km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.1km north west of site	Bluebell	Within 1000m tetrad containing the site
Far Holme Meadow SSSI	1.7km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1km north west of site	White-barred Twist	200m north east of site
Bowland Fells SSSI	5km south of site	Wray Wood Moor BHS	1.2km south west of site	Brown Long-eared Bat	600m north east of site
Bowland Fells SPA	5km south of site	Scale Wood BHS	800m south west of site	Common Pipistrelle	600m north east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	900m south of site	Noctule Bat	600m north east of site
		Collinson’s Wood BHS	1.2km north of site	Soprano Pipistrelle	600m north east of site
		Cowkins Coppice BHS	1.1km north of site	Unidentified Bat	600m north east of site
		Haw Wood BHS	800m north of site		
		River Hindburn BHS	900m north of site		
		Hole House and Lower Grassland BHS	1.3km east of site		
		Hole House Wood BHS	1.5km east of site		
		Over Houses Great Wood BHS	1.7km south east of site		
		Meadows Adjoining Far Holme SSSI BHS	1.9km south east of site		
		Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.9km south east of site		
		Far Holme Meadow BHS	1.7km east of site		
		Lower Helks Pastures BHS	1.9km south east of site		
		Helks Wood BHS	1.9km south east of site		
		Stubbins Wood BHS	1.9km south east of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
2 ponds within 500m of the site Both approx. 70m north of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Marshy grassland Dry ditch Semi-improved neutral grassland Poor semi-improved grassland Dry stone wall	Fence Marshy Grassland Poor semi-improved grassland Improved grassland Scattered broadleaved trees			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Poor semi-improved grassland and marshy grassland adjacent to the site have potential to support ground nesting birds.</li><li>Limited scattered scrub adjacent to the site has potential to support nesting birds</li><li>Limited diversity in habitats on and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and relatively isolated nature of the two small ponds in closest proximity to the site (c 70m)</li></ul>			<ul style="list-style-type: none"><li>Habitats will not be reinstated on completion of the works.</li><li>Loss of relatively small areas of semi-improved grassland and marshy grassland (rush dominated pasture) is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field (not applicable for verge).</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>Presence of amphibians considered low risk (no significant impact anticipated)</li></ul>		

Works ID	TR3/RW16	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2km north west of site	Ancient & Semi-Natural Woodland	650m north of site	Swallow	Within 1000m tetrad containing the site
Robert Hall Moor SSSI	2.5km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1km west of site	Bluebell	Within 2000m tetrad containing the site
Roeburndale Woods SSSI	2km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.2km north west of site	Lily-of-the-valley	Within 2000m tetrad containing the site
Far Holme Meadow SSSI	1.5km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.2km north west of site	Bluebell	Within 1000m tetrad containing the site
Bowland Fells SSSI	4.9km south of site	Wray Wood Moor BHS	1.1km south west of site	White-barred Twist	200m north east of site
Bowland Fells SPA	4.9km south of site	Scale Wood BHS	800m south west of site	Brown Long-eared Bat	600m north east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	800m south of site	Common Pipistrelle	600m north east of site
		Collinson's Wood BHS	1.3km north of site	Noctule Bat	600m north east of site
		Cowkins Coppice BHS	1.1km north of site	Soprano Pipistrelle	600m north east of site
		Haw Wood BHS	800m north of site	Unidentified Bat	600m north east of site
		River Hindburn BHS	900m north of site		
		Hole House and Lower Grassland BHS	1.2km east of site		
		Hole House Wood BHS	1.4km east of site		
		Over Houses Great Wood BHS	1.5km south east of site		
		Meadows Adjoining Far Holme SSSI BHS	1.4km east of site		
		Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.5km east of site		
		Far Holme Meadow BHS	1.6km east of site		
		Lower Helks Pastures BHS	1.7km south east of site		
		Helks Wood BHS	1.7km south east of site		
		Stubbins Wood BHS	1.7km south east of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds within 500m of the site 2 x 200m northwest, 1x 490m south west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland	Poor semi-improved grassland Improved grassland Dry stone wall Dense/continuous scrub Scattered broadleaved trees			TR3.TN21 	TR3.TN20 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>Poor semi-improved grassland and improved grassland adjacent to the site have potential to support ground nesting birds.</li> <li>Dense scrub adjacent to the site has potential to support nesting birds.</li> <li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li> <li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 200 m which are relatively isolated in the wider landscape).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works</li> <li>Works will result in the small loss of poor semi-improved grassland associated with the roadside verge and adjoining field</li> <li>Loss of small areas of 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 (not applicable for verge).</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> </ul>		

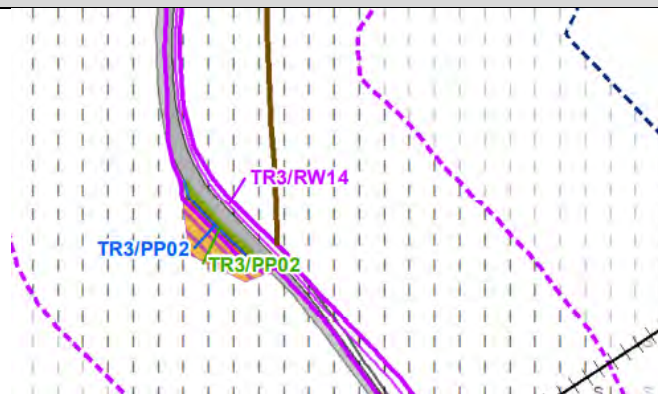


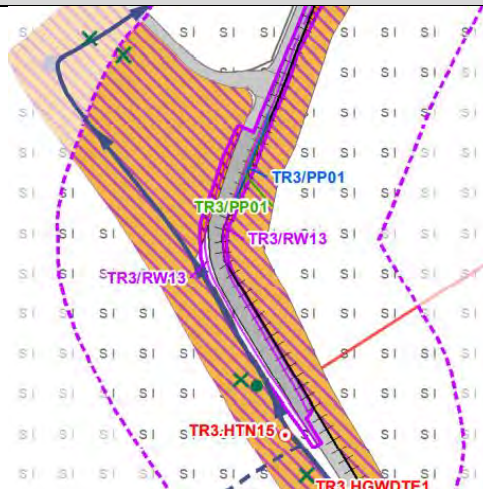

Works ID	TR3/PP03	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.2km north west of site	Ancient & Semi-Natural Woodland	800m north of site	Meadows Adjoining Far Holme SSSI BHS	1.3km east of site
Robert Hall Moor SSSI	2.6km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.2km north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.4km north west of site	Far Holme Meadow BHS	1.4km east of site
Far Holme Meadow SSSI	1.4km south east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.1km north west of site	Lower Helks Pastures BHS	1.6km east of site
Bowland Fells SSSI	4.8km south of site	Wray Wood Moor BHS	1.1km south west of site	New Barn Meadow, Lowgill BHS	2km east of site
Bowland Fells SPA	4.8km south of site	Scale Wood BHS	800m south west of site	Helks Wood BHS	1.5km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	700m south of site	Stubbins Wood BHS	1.6km south east of site
		Collinson’s Wood BHS	1.5km north of site	Historic Species Records	
		Cowkins Coppice BHS	1.3km north east of site	Swallow	Within 1km tetrad containing the site
		Haw Wood BHS	1.1km east of site	Bluebell	Within 1km tetrad containing the site
		River Hindburn BHS	900m north of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House and Lower Grassland BHS	1.1km north east of site	Bluebell	Within 2km tetrad containing the site
		Hole House Wood BHS	1.3km north east of site	Ringlet	Within 1km tetrad containing the site
		Over Houses Great Wood BHS	1.4km south east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds within 500m of the site 2 x 400m northwest, 1 x 490m south west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Improved grassland	Improved grassland Marshy grassland			<div>TR3.TN22</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 400 m which are relatively isolated in the wider landscape).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in the small loss of improved grassland associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

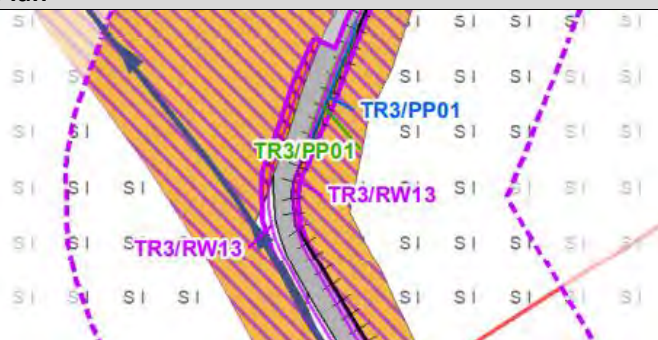

Works ID	TR3/RW15	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.3km north west of site	Ancient & Semi-Natural Woodland	900m north of site	Meadows Adjoining Far Holme SSSI BHS	1.3km east of site
Robert Hall Moor SSSI	2.7km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.3km north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.3km north west of site	Far Holme Meadow BHS	1.4km east of site
Far Holme Meadow SSSI	1.3km south east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.2km north west of site	Lower Helks Pastures BHS	1.6km east of site
Bowland Fells SSSI	4.7km south of site	Wray Wood Moor BHS	1km south west of site	New Barn Meadow, Lowgill BHS	2km east of site
Bowland Fells SPA	4.7km south of site	Scale Wood BHS	700m south west of site	Helks Wood BHS	1.5km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	600m south of site	Stubbins Wood BHS	1.6km south east of site
		Collinson’s Wood BHS	1.6km north of site	Historic Species Records	
		Cowkins Coppice BHS	1.4km north east of site	Swallow	Within 1km tetrad containing the site
		Haw Wood BHS	1.1km east of site	Bluebell	Within 1km tetrad containing the site
		River Hindburn BHS	800m north of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House and Lower Grassland BHS	1.2km north east of site	Bluebell	Within 2km tetrad containing the site
		Hole House Wood BHS	1.4km north east of site	Ringlet	Within 1km tetrad containing the site
		Over Houses Great Wood BHS	1.3km south east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 450m south west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Improved grassland Dry stone wall	Improved grassland Dry stone wall Marshy grassland Running water			TR3.TN22 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Dry stone wall has some potential to support nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 400 m which are relatively isolated in the wider landscape).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in the small loss of improved grassland and dry stone wall associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field or other species using the dry stone wall.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

Works ID	TR3/RW14	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.4km north west of site	Ancient & Semi-Natural Woodland	700m west of site	Meadows Adjoining Far Holme SSSI BHS	1.5km east of site
Robert Hall Moor SSSI	2.9km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.3km north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.6km north west of site	Far Holme Meadow BHS	1.3km east of site
Far Holme Meadow SSSI	1.4km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.6km north east of site	Lower Helks Pastures BHS	1.5km south east of site
Bowland Fells SSSI	4.5km south of site	Wray Wood Moor BHS	1.1km west of site	New Barn Meadow, Lowgill BHS	1.9km east of site
Bowland Fells SPA	4.5km south of site	Scale Wood BHS	800m west of site	Helks Wood BHS	1.3km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	500m south of site	Stubbins Wood BHS	1.5km east of site
		Collinson’s Wood BHS	1.7km north of site	Historic Species Records	
		Cowkins Coppice BHS	1.3km north of site	Swallow	Within 1km tetrad containing the site
		Haw Wood BHS	1.1km north east of site	Bluebell	Within 1km tetrad containing the site
		River Hindburn BHS	1.1km north of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House and Lower Grassland BHS	1.2km north east of site	Bluebell	Within 2km tetrad containing the site
		Hole House Wood BHS	1.3km north east of site	Ringlet	Within 1km tetrad containing the site
		Over Houses Great Wood BHS	1.3km east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 1 x 360m west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Improved grassland Marshy grassland Running water	Improved grassland Marshy grassland Poor semi-improved grassland Dry stone wall			TR3.HTN25 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 360 m).</li><li>Small watercourse associated with field drainage passes under the road. It is unlikely to support water vole or otter.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in small losses of improved grassland associated with the roadside verge and adjoining field. A small area of marshy grassland (rush dominated pasture) will also be lost. These losses are unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>Works likely to require extension of watercourse culvert. No significant impacts anticipated.</li></ul>		

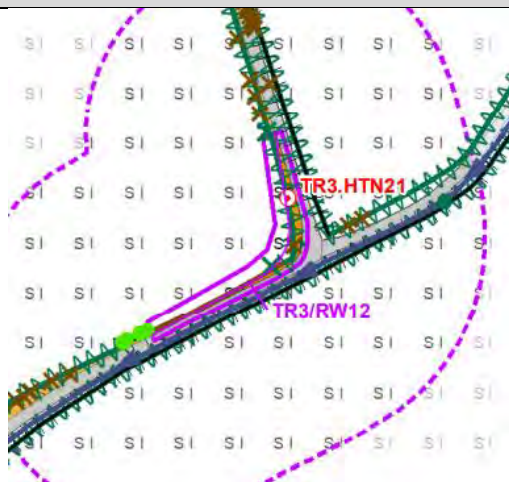






Works ID	TR3/PP02	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.4km north west of site	Ancient & Semi-Natural Woodland	700m west of site	Meadows Adjoining Far Holme SSSI BHS	1.5km east of site
Robert Hall Moor SSSI	2.9km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.3km north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.6km north west of site	Far Holme Meadow BHS	1.3km east of site
Far Holme Meadow SSSI	1.4km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.6km north east of site	Lower Helks Pastures BHS	1.5km south east of site
Bowland Fells SSSI	4.5km south of site	Wray Wood Moor BHS	1.1km west of site	New Barn Meadow, Lowgill BHS	1.9km east of site
Bowland Fells SPA	4.5km south of site	Scale Wood BHS	800m west of site	Helks Wood BHS	1.3km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	500m south of site	Stubbins Wood BHS	1.5km east of site
		Collinson’s Wood BHS	1.7km north of site	Historic Species Records	
		Cowkins Coppice BHS	1.3km north of site	Swallow	Within 1km tetrad containing the site
		Haw Wood BHS	1.1km north east of site	Bluebell	Within 1km tetrad containing the site
		River Hindburn BHS	1.1km north of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House and Lower Grassland BHS	1.2km north east of site	Bluebell	Within 2km tetrad containing the site
		Hole House Wood BHS	1.3km north east of site	Ringlet	Within 1km tetrad containing the site
		Over Houses Great Wood BHS	1.3km east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 360m west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Improved grassland Marshy grassland	Improved grassland Marshy grassland			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 360 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in small losses of improved grassland associated with the roadside verge and adjoining field. A small area of marshy grassland (rush dominated pasture) will also be lost. These losses are unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

Works ID	TR3/RW13	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.6km north west of site	Ancient & Semi-Natural Woodland	800m north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km north east of site
Robert Hall Moor SSSI	3.1km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.5km north west of site	Far Holme Meadow BHS	1.3km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.8km north west of site	Lower Helks Pastures BHS	1.3km south east of site
Far Holme Meadow SSSI	1.4km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.6km north west of site	New Barn Meadow, Lowgill BHS	1.9km east of site
Bowland Fells SSSI	4.3km south of site	Wray Wood Moor BHS	1.1km west of site	Watercourse	Adjacent to site
Bowland Fells SPA	4.3km south of site	Scale Wood BHS	800m west of site	Helks Wood BHS	1.5km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	300m south of site	Well Beck Wood (Including Helks Home Wood and Middlefield Wood)	2km south east of site
		Collinson’s Wood BHS	2km north of site	Stubbins Wood BHS	1.5km east of site
		Cowkins Coppice BHS	1.5km north of site	Historic Species Records	
		Haw Wood BHS	1.2km north east of site	Swallow	Within 1km tetrad containing the site
		River Hindburn BHS	1.3km north of site	Bluebell	Within 1km tetrad containing the site
		Hole House and Lower Grassland BHS	1.3km north east of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House Wood BHS	1.4km north east of site	Bluebell	Within 2km tetrad containing the site
		Over Houses Great Wood BHS	1.3km east of site	Ringlet	Within 1km tetrad containing the site
		Meadows Adjoining Far Holme SSSI BHS	1.4km east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site One 420m north west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Poor semi-improved grassland Marshy Grassland Running water	Marshy Grassland Poor semi-improved grassland Scattered scrub Scattered broadleaved trees Running water Dry ditch			<div>TR3.HTN15</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Semi-improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 420 m).</li><li>Small watercourse associated with field drainage on the boundary of the works. It is unlikely to support water vole or otter.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in small losses of semi-improved grassland and marshy grassland (rush dominated pasture) associated with the roadside verge and adjoining fields. These losses are unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>Works are on the edge of a watercourse. Assumed impacts could be avoided but even if a culvert is required no significant impacts are anticipated.</li></ul>		

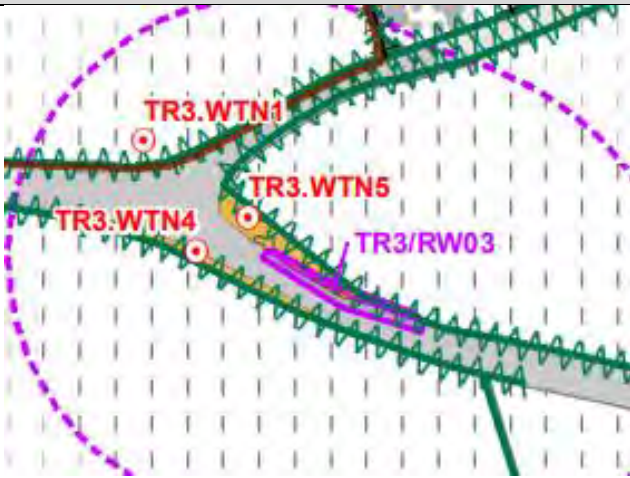


Works ID	TR3/PP01	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	2.6km north west of site	Ancient & Semi-Natural Woodland	800m north west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	1.4km north east of site
Robert Hall Moor SSSI	3.1km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	1.5km north west of site	Far Holme Meadow BHS	1.3km east of site
Roeburndale Woods SSSI	2.1km west of site	Broad Wood (Including Higher Broad Wood and Deep Gill Wood) BHS	1.8km north west of site	Lower Helks Pastures BHS	1.3km south east of site
Far Holme Meadow SSSI	1.4km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	1.6km north west of site	New Barn Meadow, Lowgill BHS	1.9km east of site
Bowland Fells SSSI	4.3km south of site	Wray Wood Moor BHS	1.1km west of site	Watercourse	Adjacent to site
Bowland Fells SPA	4.3km south of site	Scale Wood BHS	800m west of site	Helks Wood BHS	1.5km south east of site
		Goodber Common (Including Summersgill Fell and White Moss BHS	300m south of site	Well Beck Wood (Including Helks Home Wood and Middlefield Wood)	2km south east of site
		Collinson’s Wood BHS	2km north of site	Stubbins Wood BHS	1.5km east of site
		Cowkins Coppice BHS	1.5km north of site	Historic Species Records	
		Haw Wood BHS	1.2km north east of site	Swallow	Within 1km tetrad containing the site
		River Hindburn BHS	1.3km north of site	Bluebell	Within 1km tetrad containing the site
		Hole House and Lower Grassland BHS	1.3km north east of site	Yellow archangel	Within 2km tetrad containing the site
		Hole House Wood BHS	1.4km north east of site	Bluebell	Within 2km tetrad containing the site
		Over Houses Great Wood BHS	1.3km east of site	Ringlet	Within 1km tetrad containing the site
		Meadows Adjoining Far Holme SSSI BHS	1.4km east of site	Brown hare	Within 1km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond within 500m of the site 420m north west of site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Marshy Grassland	Marshy Grassland Poor semi-improved grassland			<div>TR3.HTN15</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Marshy grassland (rush dominated pasture) and semi-improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 420 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in the small loss of marshy grassland (rush dominated pasture) associated with the roadside verge and adjoining fields. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		





Works ID	TR3/RW12	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Clear Beck Meadow SSSI	3.2km north west of site	Ancient & Semi-Natural Woodland	100m north of site	Meadows Adjoining Far Holme SSSI BHS	800m south east of site
Robert Hall Moor SSSI	3.1km north of site	Pike Gill Wood (Including Willock Close Wood and High Grasses Wood) BHS	2km west of site	Bank Wood, High Lot Wood, Over Wood and Moist Shoe Wood BHS	600m east of site
Roeburndale Woods SSSI	2.9km west of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood BHS	2km north west of site	Far Holme Meadow BHS	600m south east of site
Far Holme Meadow SSSI	500m east of site	Wray Wood Moor BHS	1.9km south west of site	Lower Helks Pastures BHS	1km south east of site
Bowland Fells SSSI	4.3km south of site	Scale Wood BHS	1.6km south west of site	New Barn Meadow, Lowgill BHS	1.2km south east of site
Bowland Fells SPA	4.3km south of site	Goodber Common (Including Summersgill Fell and White Moss BHS	1km south of site	Helks Wood BHS	900m south east of site
		Collinson’s Wood BHS	1.8km north west of site	Well Beck Wood (Including Helks Home Wood and Middlefield Wood)	2km south of site
		Cowkins Coppice BHS	1.1km north west of site	Foss Bank Wood, Tower Holme Wood and Middleton Wood	1.6km south east of site
		Haw Wood BHS	200m north east of site	Historic Species Records	
		River Hindburn BHS	400m north of site	Within 1km tetrad containing the site	Within 1km tetrad containing the site
		Hole House and Lower Grassland BHS	400m north east of site	Swallow	Within 1km tetrad containing the site
		Hole House Wood BHS	500m north east of site	Bluebell	Within 1km tetrad containing the site
		Over Houses Great Wood BHS	400m south east of site	Yellow Archangel	Within 2km tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
0 ponds within 500m of the site		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 Dry stone wall	Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scattered bracken Scattered coniferous trees			TR3.HTN21 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Semi-improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Hedgerow and dry stone wall has potential to support nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and lack of potential breeding ponds (none within 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Current proposals will require removal of approximately 40 m of species-rich intact hedgerow and associated SI grass verge.</li><li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>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.</li><li>Works will result in the small loss of semi-improved grassland and dry stone wall associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field or other species using the dry stone wall.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

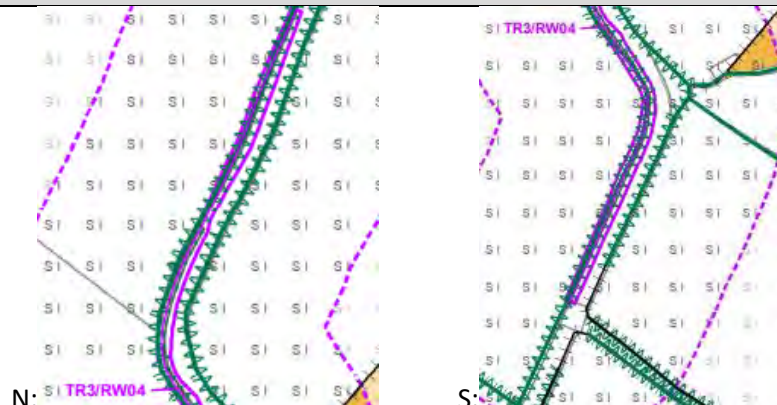
Works ID	TR3/RW02	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records within 1km	
Roeburndale Woods SSSI	2.4km southeast of site	Ancient Woodland	0.7km south of site	Oystercatcher	Adjacent to the site
Clear Beck Meadow SSSI	3.1km east of site	56NE08 BHS	1.8km south of site		
Burton Wood SSSI	3.9km southwest of site	56NE12 BHS	1.0km south east of site		
Robert Hall Moor SSSI	4.4km east of the site	56NE14 BHS	1.0km south east of site		
		56NE13 BHS	1.5km south east of site		
		56NE15 BHS	900m south east of site		
		66NW04 BHS	2.0km east of site		
		56NE16 BHS	1.0km east of site		
		56NE17 BHS	900m north east of site		
		LSRLU BHS	500m north west of site		
		56NE18 BHS	2.0km north west of site		
		56NE05 BHS	1.6km west of site		
		56NE07 BHS	2.0km south west of site		
		56NE06 BHS	2.0km south west of site		
		56NE11 BHS	1.2km south east of site		
		56NE09 BHS	1.1km south of site		
		56NE10 BHS	700m south of site		
		Whooper Swan Major Feeding Area	300m west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds identified within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Arable Species-rich intact hedge Species-poor intact hedge Poor semi-improved grassland	Arable Species-rich intact hedgerow Species-poor intact hedge Poor semi-improved grassland Scattered broad-leaved trees Amenity grassland Dry stone wall			TR3.HTN22 	TR3.HBT11 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>Arable land adjacent to the site has potential to support ground nesting birds and wintering birds (NB Whooper Swan Major Feeding Area 300m west).</li> <li>Dry stone wall has some potential to support nesting birds.</li> <li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li> <li>Amphibians are unlikely to be present due to limited suitable habitat and lack of potential breeding ponds (none within 500m).</li> <li>One tree adjacent to the site has high potential to support roosting bats (TR3.HBT11), this tree is on the opposite side of a single carriageway and appears from the photos that limbs/branches overhanging the road have already been removed/lost – no impacts anticipated.</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works</li> <li>Current proposals will require removal of approximately 60 m of species-rich intact hedgerow and 140 m of species-poor intact hedgerow with associated SI grass verge.</li> <li>Hedgerows could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>Works will result in the small loss of semi-improved grassland, arable land and dry stone wall associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field or other species using the dry stone wall, as well as wintering birds.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>Works in the winter should be subject to a winter bird assessment prior to works commencing.</li> </ul>		

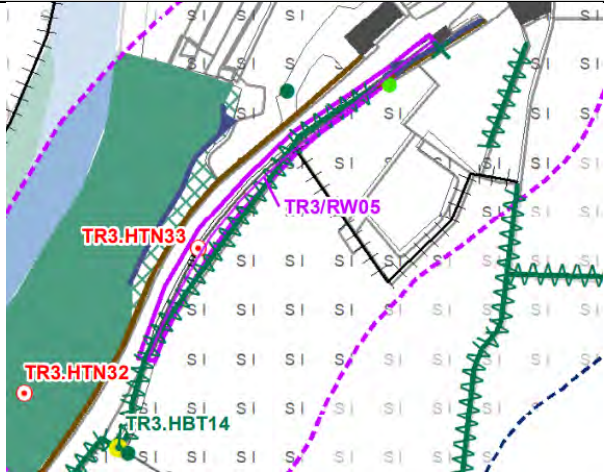



<b>Works ID</b>	TR3/RW03	<b>Survey Date</b>	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>			
Roeburndale Woods SSSI	1.9km southeast of site	Ancient Woodland	0.4km south east of site	Whooper Swan Major Feeding Area	1.0km west of site
Clear Beck Meadow SSSI	2.4km east of site	56NE08 BHS	2.0km south of site	66NW13 BHS	1.7km north east of site
Robert Hall Moor SSSI	3.8km east of site	56NE12 BHS	700m south of site	66NW36 BHS	1.4km east of site
Burton Wood SSSI	4.7km southwest of site	56NE14 BHS	800m south of site	66NW04 BHS	1.2km south east of site
		56NE13 BHS	1.2km south of site	66NW33 BHS	1.4km east of site
		56NE15 BHS	200m south east of site	66NW03 BHS	1.6km south east of site
		66NW04 BHS	1.3km south east of site	66SW09 BHS	1.8km south east of site
		56NE16 BHS	500m south east of site	66NW05 BHS	2.0km north east of site
		56NE17 BHS	900m north of site	66NW35	1.4km south east of site
		LSRLU BHS	1.1km north west of site	<b>Historic Species Records within 1km</b>	
		56NE11 BHS	1.3km south of site	Small heath	Within 1000m tetrad containing the site
		56NE09 BHS	1.5km south west of site	Large heath	Within 1000m tetrad containing the site
		56NE10 BHS	1.1km south west of site	Brown hare	Within 1000m tetrad containing the site
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
No ponds identified within 500m of the site		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Semi-improved neutral grassland Species-rich intact hedgerow	Semi-improved neutral grassland Species-rich intact hedgerow Improved grassland			TR3.WTN4 	TR3.WTN5 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>Improved grassland adjacent to the site has potential to support ground nesting birds.</li> <li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li> <li>Amphibians are unlikely to be present due to limited suitable habitat and lack of potential breeding ponds (none within 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works</li> <li>Current proposals will require removal of approximately 20 m of species-rich intact hedgerow and associated SI grass verge.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>Works will result in the small loss of semi-improved grassland and improved grassland associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> </ul>		

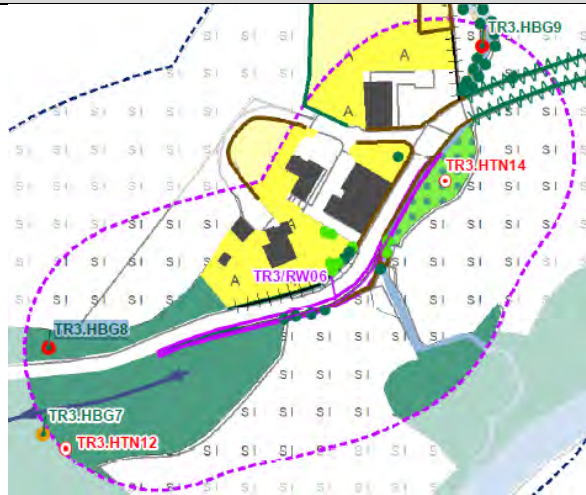




Works ID	TR3/RW01	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records within 1km	
Roeburndale Woods SSSI	2.4km southeast of site	Ancient Woodland	0.7km south of site	Oystercatcher	Adjacent to the site
Clear Beck Meadow SSSI	3.1km east of site	56NE08 BHS	1.8km south of site		
Burton Wood SSSI	3.9km southwest of site	56NE12 BHS	1.0km south east of site		
Robert Hall Moor SSSI	4.4km east of the site	56NE14 BHS	1.0km south east of site		
		56NE13 BHS	1.5km south east of site		
		56NE15 BHS	900m south east of site		
		66NW04 BHS	2.0km east of site		
		56NE16 BHS	1.0km east of site		
		56NE17 BHS	900m north east of site		
		LSRLU BHS	500m north west of site		
		56NE18 BHS	2.0km north west of site		
		56NE05 BHS	1.6km west of site		
		56NE07 BHS	2.0km south west of site		
		56NE06 BHS	2.0km south west of site		
		56NE11 BHS	1.2km south east of site		
		56NE09 BHS	1.1km south of site		
		56NE10 BHS	700m south of site		
		Whooper Swan Major Feeding Area	300m west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
No ponds identified within 500m of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Scattered scrub Dry stone wall	Semi-improved neutral grassland Species-rich intact hedgerow Arable Plantation coniferous woodland Dry stone wall			TR3.HTN24 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Semi-improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Dry stone wall has some potential to support nesting birds.</li><li>The woodland adjacent to site provides suitable habitat for nesting birds, small mammals, amphibians and foraging / commuting bats (TR3.HTN24).</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and lack of potential breeding ponds (none within 500m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works will result in the small loss of scattered scrub, semi-improved grassland and dry stone wall associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to nesting birds and ground nesting species using the wider field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

Works ID	TR3/RW04	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.1km southeast of site	Ancient Woodland	250m east of site	Grey heron	500m south of site
Roeburndale Woods SSSI	1.5km south of site	Broadwood (Including Higher Broad Wood and Deep Gill Wood)	1.9km southeast of site	Japanese Knotweed	400m south of site
Robert Hall Moor SSSI	2.2km east of site	Cragg Wood, Holme Wood, Birks Wood and Park House Wood	2km southeast of site	Indian Balsam	400m south of site
Far Holme Meadow SSSI	4.8km southeast of site	Pike Gill Wood (Including Willcock Close Wood and High Grasses Wood)	2km southeast of site	Columbine	400m south of site
				Atlantic Salmon	600m south of site
				Brown/Sea Trout	600m south of site
				Bullhead	600m south of site
				European Eel	600m south of site
				Atlantic Salmon	600m south of site
				Brown/Sea Trout	600m south of site
				Bullhead	600m south of site
				European Eel	600m south of site
				Brown Hare	Adjacent to site
				Brown Hare	Adjacent to site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond located approx. 440m (northwest) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland	Poor semi-improved grassland Species-rich intact hedgerow			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Semi-improved grassland adjacent to the site has potential to support ground nesting birds.</li><li>Hedgerow has potential to support nesting birds.</li><li>Limited diversity in habitats in and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li><li>Amphibians are unlikely to be present due to limited suitable habitat and distance of nearest potential breeding ponds (c 440 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will not reinstated on completion of the works</li><li>Current proposals will require removal of approximately 150 m of species-rich intact hedgerow and associated SI grass verge.</li><li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>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.</li><li>Works will result in the small loss of semi-improved grassland associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		

Works ID	TR3/RW05	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	1.8km south of site	66NW14 BHS	100m north of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	5km north of site	66NW15 BHS	100m south of site		
Robert Hall Moor SSSI	2.8km south of site	66NW06 BHS	100m west of site		
		66NW05 BHS	800m west of site		
		67SW01 BHS	700m north west of site		
		67SW02 BHS	1.2km north of site		
		66NW18 BHS	1.7km south east of site		
		66NW13 BHS	1.0km south of site		
		67SW13 BHS	1.7km north east of site		
		67SW14 BHS	2.0km north east of site		
		56NE17 BHS	1.0km south west of site		
		66NW36 BHS	1.7km south of site		
		66NW12 BHS	1.7km south of site		
		66NW19 BHS	1.6km north east of site		
		Whooper Swan Major Feeding Area	1.3km north east of site		
		Deciduous woodland	Adjacent to site		
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond 110 m northeast of the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland Running water Scattered coniferous tree	Species-rich intact hedgerow Poor semi-improved grassland Scattered coniferous trees Running water Dense/continuous scrub Semi-natural broad-leaved woodland Scattered broadleaved trees Dry stone wall Buildings			<div>TR3.HTN33</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Hedgerow, woodland, wall and dense/continuous scrub provide linear features for commuting bats, foraging resources for commuting bats and is suitable for nesting birds, small mammals and as terrestrial refugia for amphibians.</li><li>Small watercourse present at the end of the works which appears culverted under the road. It is unlikely to support water vole or otter but may be a tributary of the River Wenning approx. 30 m west of the proposals.</li><li>One tree approximately 30 m from the site has low potential to support roosting bats (TR3.HBT14). This tree is set back from the road – no impacts anticipated.</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works.</li><li>Current proposals will require removal of approximately 100 m of species-rich intact hedgerow and associated SI grass verge.</li><li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>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.</li><li>Works will result in the small loss of semi-improved grassland associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to nesting birds and ground nesting species using the wider field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>ECoW required to check site for protected species prior to site clearance (amphibians/reptiles).</li><li>Small section of watercourse assumed could be avoided but if lost/culverted (approx. 15 m) no significant impacts anticipated.</li></ul>		



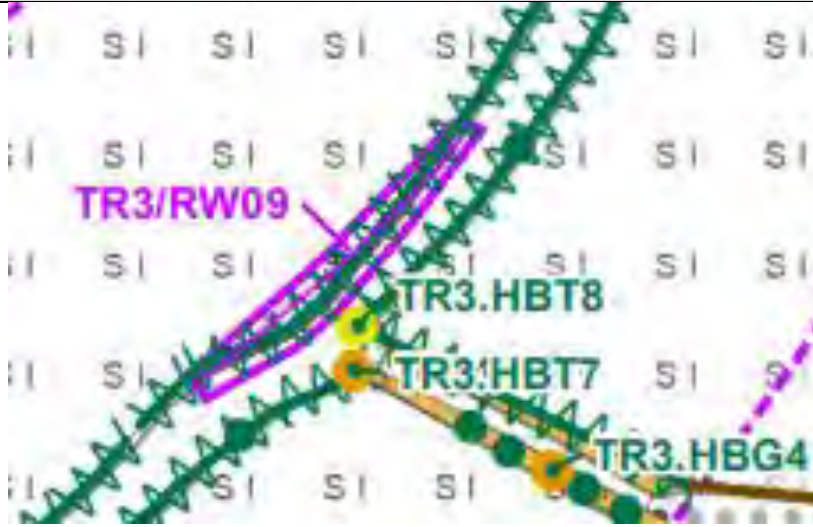


Works ID	TR3/RW06	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.4km south of site	Deciduous woodland	Adjacent to site	Bat roost	Adjacent to site (data from 1986-2019)
Roeburndale Woods SSSI	3.7km south west of site	66NW19 BHS	500m east of site		
Robert Hall Moor SSSI	1.3km south east of site	66NW14 BHS	750m south west of site		
		66NW06 BHS	1.4km west of site		
		67SW01 BHS	1.4km west of site		
		67SW13 BHS	500m north of site		
		67SW10 BHS	1.0km north east of site		
		67SW11 BHS	1.0km north east of site		
		66NW24 BHS	1.8km south east of site		
		66NW18 BHS	1.7km south of site		
		66NW15 BHS	1.2km south west of site		
		66NW13 BHS	2.0km south west of site		
		66NW05 BHS	1.9km south west of site		
		67SW02 BHS	1.4km north west of site		
		67SW03 BHS	1.8km north of site		
		67SW12 BHS	1.9km north west of site		
		67SW06 BHS	1.8km north of site		
		SD67-04 SINC	2.0km north east of site		
		SD67-07SINC	1.9km north east of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds in total, located approx. 500m (north), 400m (north east) and 500m (south) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Running water Scattered broadleaved trees Semi-natural broadleaved woodland Scattered coniferous trees Poor semi-improved grassland Dry stone wall	Poor semi-improved grassland Semi-natural mixed woodland Semi-natural broadleaved woodland Scattered coniferous trees Scattered broadleaved trees Running water Dry stone wall Buildings			<div>TR3.HTN14</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Hedgerow, woodland, wall and dense/continuous scrub provide linear features for commuting bats, foraging resources for commuting bats and is suitable for nesting birds and small mammals.</li><li>Adjacent building complex noted to contain a bat roost. Closest building is set away from the road with associated dry stone wall at a sufficient distance to prevent encroachment of traffic.</li><li>Watercourse adjacent to the site appears to be a significant tributary of River Wenning. Could have suitability to support commuting and foraging riverine species (otter/water vole).</li><li>Amphibians are unlikely to be present due distance of nearest potential breeding ponds (c 400 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Works are noted to be minor widening therefore assumptions presume works can be micro-sited to avoid impacts to habitats. This includes:<ul style="list-style-type: none"><li>No impacts to adjacent watercourse or associated bank habitat – anticipated wall removal likely to be required this should be done by hand (as practicably possible) in the presence of an ECoW</li><li>No loss of adjacent tree habitat (inc woodland edge). If minor loss required no significant impacts are anticipated</li><li>Minor loss of grassland verge</li></ul></li><li>If vegetation clearance required, works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		




Works ID	TR3/RW07	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.9km south west of site	66NW19 BHS	900m north west of site	Swift	500m north east of site
Roeburndale Woods SSSI	4.3km south west of site	67SW11 BHS	1.6km north of site	Swift	500m north east of site
Robert Hall Moor SSSI	850m south west of site	SD67-07 SINC	1.5km north of site	Common Spotted-orchid	Adjacent to site
Far Holme Meadow SSSI	3.9km south of site	SD67-04 SINC	2km north of site	European Otter	50m north of site
		66NW32 BHS	200m south east of site	European Otter	400m north west of site
		SD66-09 SINC	900m south of site	European Otter	300m north east of site
		66NW25 BHS	900m south west of site	Atlantic Salmon	50m west of site
		SD66-04 SINC	1.5km south east of site	Brook Lamprey	50m west of site
		SD66-03 SINC	2.0km south east of site	Brown/Sea Trout	50m west of site
		66NW24 BHS	1.1km south west of site	Bullhead	50m west of site
		66NW18 BHS	1.7 km south west of site	European Eel	50m west of site
		66NW22 BHS	1.8km south west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
0 ponds in total within 500m from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-natural broadleaved woodland Semi-improved neutral grassland Running water Dry stone wall	Semi-natural broadleaved woodland Running water Species rich intact hedgerow Dry stone wall			None	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>One tree within the adjacent woodland with high potential to support roosting bats (TR3.HBG5) is within 10m of the works.</li><li>The woodland provides suitable habitat for small and large mammals (including badger (<i>Meles meles</i>)), nesting habitat for birds as well as roosting, foraging and commuting habitat for bats. Being adjacent to the river it may also provide lay-up sites for otter (<i>Lutra lutra</i>).</li><li>Hedgerows, woodland, and walls provide linear features for commuting bats, foraging resources for commuting bats and is suitable for nesting birds and small mammals.</li><li>Watercourse adjacent to the site (River Wenning) could have suitability to support commuting and foraging riverine species (otter/water vole). There is also an insignificant tributary culverted under the road.</li><li>Amphibians are unlikely to be present due lack of potential breeding ponds (none within 500 m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works.</li><li>Current proposals will likely require removal of woodland edge habitat.</li><li>It is assumed impacts to the nearby tree with high bat roosting potential (TR3.HBG5) will be avoided as it is located further into the woodland. If unavoidable further surveys will be required in relation to roosting bats before works can commence.</li><li>A pre-commencement survey for badger and otter should be carried out within the site and within a suitable buffer of the surrounding areas prior to works commencing.</li><li>Small section of watercourse likely to require an extension of the culvert from under the road (c 5 m max). No significant impacts anticipated.</li></ul>		



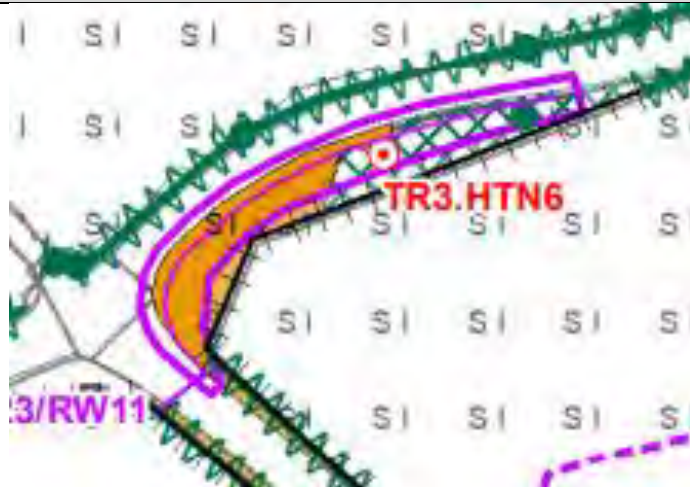

<b>Works ID</b>	TR3/RW08	<b>Survey Date</b>	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Clear Beck Meadow SSSI	3.2km south west of site	Deciduous woodland	Adjacent to site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	4.7km south west of site	SD66-09 SINC	Adjacent to site		
Robert Hall Moor SSSI	1.1km south west of site	SD66-04 SINC	700m south east of site		
Far Holme Meadow SSSI	3.3km south of site	SD66-03 SINC	1.2km south east of site		
		66NW22 BHS	1.4km south west of site		
		66NW25 BHS	600m south west of site		
		66NW24 BHS	1.0km south west of site		
		66NW18 BHS	1.9km south west of site		
		66NW32 BHS	Adjacent to site		
		66NW19 BHS	1.7km north west of site		
		SD67-07 SINC	1.8km north west of site		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
9 ponds in total, located approx. 370m east of the site beyond the River Wenning (therefore no connectivity) and are used as a fish farm.		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scattered broadleaved trees Dry ditch Dry stone wall	Species-rich intact hedgerow Semi-improved neutral grassland Poor semi-improved grassland Scattered broadleaved trees Amenity grassland Semi-natural broadleaved woodland Running water				
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>One tree with low potential to support roosting bats (TR3.HBT3) falls within the works area.</li> <li>The hedgerows have nesting bird potential.</li> <li>The adjacent SI grasslands (field not verge) have ground nesting bird potential.</li> <li>Watercourse within close proximity to the site (River Wenning &lt;20 m) could have suitability to support commuting and foraging riverine species (otter/water vole). There is also an insignificant tributary culverted under the road.</li> <li>The adjacent woodland provides suitable habitat for small and large mammals (including badger (<i>Meles meles</i>)), nesting habitat for birds as well as roosting, foraging and commuting habitat for bats. Being adjacent to the river it may also provide lay-up sites for otter (<i>Lutra lutra</i>) (TR3.HTN1 &amp; TR3.HTN3). No impacts to this habitat are anticipated.</li> <li>Amphibians are unlikely to be present due lack of connectivity with potential breeding ponds (none within 500 m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works.</li> <li>Works lie adjacent to a SINC.</li> <li>Current proposals will require removal of approximately 260 m of species-rich intact hedgerow and associated SI grass verge and dry ditch.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>It appears the tree with low bat roost potential is likely to require removal to facilitate the works. Further surveys will be required in relation to roosting bats before works can commence.</li> <li>Works will result in the small loss of SI grassland associated with the roadside verge and adjoining fields. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider fields.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>A pre-commencement survey for badger and otter should be carried out within the site and within a suitable buffer of the surrounding areas prior to works commencing.</li> <li>Small section of watercourse likely to require an extension of the culvert from under the road (c 5 m max). No significant impacts anticipated.</li> </ul>		



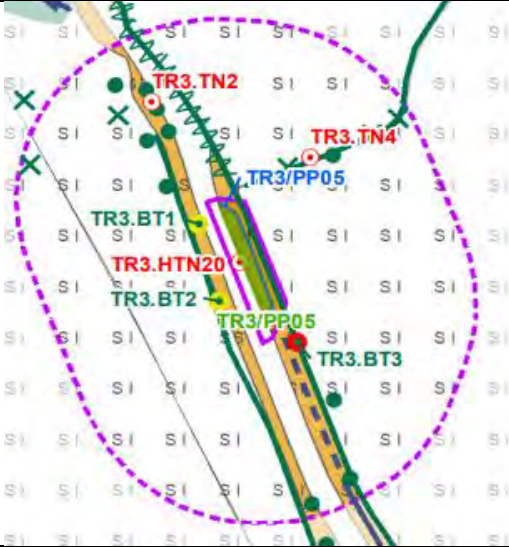


<b>Works ID</b>	TR3/RW09	<b>Survey Date</b>	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	<b>Surveyor</b>	Bowland Ecology Ltd.
<b>Statutory Designated Wildlife Sites within 5km</b>		<b>Non Statutory Designated Wildlife Sites within 2km</b>		<b>Historic Species Records</b>	
Clear Beck Meadow SSSI	3.1km south west of site	66NW25 BHS	300m west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	2.6km south west of site	66NW24 BHS	700m west of site		
Robert Hall Moor SSSI	500m west of site	66NW18 BHS	1.6km west of site		
Far Holme Meadow SSSI	2.9km south of site	6NW22 BHS	1.0km south west of site		
		66NW23 BHS	1.6km south of site		
		SD66-03 SINC	1.0km south east of site		
		SD66-04 SINC	700m east of site		
		SD66-09 SINC	200m north of site		
		66NW32 BHS	200m north of site		
		66NW19 BHS	1.8km north west of site		
		66NW17 BHS	1.5km south west of site		
		66NW21 BHS	1.5km south west of site		
		66NW20 BHS	1.5km south west of site		
<b>Ponds present within 500m (mapping review only)</b>		<b>Desktop constraints</b>			
One pond in total, located approx. 340m west of the site		None			
<b>Habitats Present within Site</b>	<b>Habitats Present adjacent to Site</b>	<b>Habitat Plan</b>		<b>Site Photos</b>	
Species-rich intact hedgerow Poor semi-improved grassland	Species rich intact hedgerow Poor semi-improved grassland Scattered broadleaved trees Semi-improved neutral grassland			TR3.HBT8 	TR3.HBT7 
<b>Protected Species Assessment</b>			<b>Summary of Constraints</b>		
<ul style="list-style-type: none"> <li>One tree adjacent to the site has low potential to support roosting bats (TR3.HBT8). This tree will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li> <li>Another tree in close proximity to the works has moderate potential to support roosting bats (TR3.HBT7). This tree will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li> <li>Hedgerow has potential to support nesting birds</li> <li>Poor semi-improved grassland and marshy grassland adjacent to the site have potential to support ground nesting birds.</li> <li>Limited diversity in habitats on and adjacent to the site could support a limited range of foraging and commuting species (e.g. reptiles, bats, badger, brown hare, hedgehog, invertebrates).</li> <li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c 340 m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works.</li> <li>Current proposals will require removal of approximately 50 m of species-rich intact hedgerow and associated SI verge habitat.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>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.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		

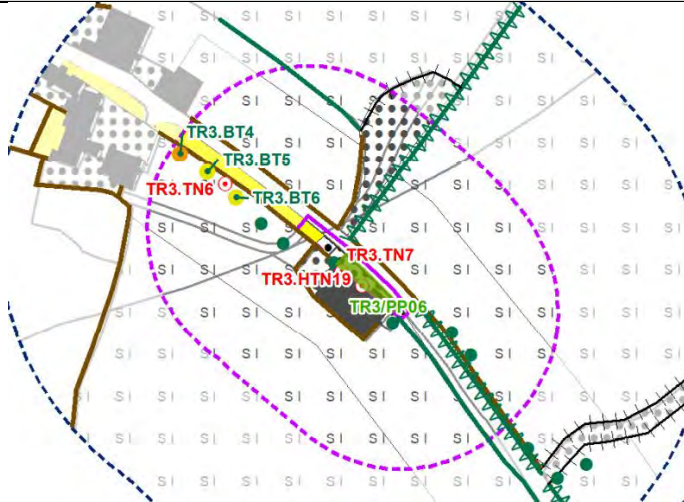


Works ID	TR3/RW10	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.4km south west of site	66NW22 BHS	700m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.7km south west of site	66NW25 BHS	200m north west of site		
Robert Hall Moor SSSI	400m north west of site	66NW24 BHS	600m west of site		
Far Holme Meadow SSSI	2.7km south of site	66NW18 BHS	1.5kmwest of site		
		66NW32 BHS	400m north east of site		
		66NW23 BHS	1.2km south west of site		
		66NW20 BHS	1.2km south west of site		
		66NW29 BHS	1.6km south of site		
		SD66-03 SINC	1.1km south east of site		
		SD66-04 SINC	800m east of site		
		SD66-09 SINC	500m north of site		
		66NW17 BHS	1.7km south west of site		
		66NW19 BHS	1.8km north west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
Two ponds in total, located approx. 360m south of the site		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Species-rich intact hedgerow Poor semi-improved grassland Scattered broadleaved trees	Poor semi-improved grassland Species rich intact hedgerow Semi-improved neutral grassland Scattered broadleaved trees Semi-natural broadleaved woodland				
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>Two trees adjacent to the site have low potential to support roosting bats (TR3.HBT6, TR3.HBT5). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li><li>The SI grassland has ground nesting bird potential</li><li>Hedgerow provides linear features for commuting bats, foraging resources for commuting bats and is suitable for nesting birds, small mammals and as terrestrial refugia.</li><li>The adjacent woodland provides suitable habitat for nesting birds, large mammals (including badger), small mammals as well as roosting, foraging and commuting bats.</li><li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (c 360m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will be reinstated on completion of the works</li><li>Current proposals will require removal of approximately 120 m of species-rich intact hedgerow, two broadleaved trees and associated SI verge habitat.</li><li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li><li>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.</li><li>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.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li><li>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.</li></ul>		



Works ID	TR3/RW11	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km		Historic Species Records	
Clear Beck Meadow SSSI	2.0km west of site	66NW22 BHS	200m south west of site	Brown hare	Within 1000m tetrad containing the site
Roeburndale Woods SSSI	3.4km south west of site	66NW24 BHS	400m north west of site		
Robert Hall Moor SSSI	630m north of site	66NW18 BHS	1.1km north west of site		
Far Holme Meadow SSSI	2.4km south east of site	66NW25 BHS	400m north of site		
		66NW32 BHS	1.0km north east of site		
		SD66-04 SINC	1.3km north east of site		
		SD66-09 SINC	1.1km north east of site		
		SD66-03 SINC	1.2km east of site		
		66NW23 BHS	700m south of site		
		66NW20 BHS	800m south of site		
		66NW21 BHS	900m south of site		
		66NW17 BHS	800 south west of site		
		66NW30 BHS	1.8km south east of site		
		66NW11 BHS	1.8km south west of site		
Ponds present within 500m (mapping review only)		Desktop constraints			
3 ponds in total, located approx. 390m (north), 330m (east) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Scattered broadleaved trees Dense/continuous scrub	Poor semi-improved grassland Semi-improved neutral grassland Scattered broadleaved trees Species rich intact hedgerow Dense/continuous scrub			<div>TR3.HTN6</div> 	
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"><li>The dense scrub and broadleaved tree have nesting bird potential.</li><li>The SI grassland adjacent to the works has ground nesting bird potential.</li><li>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).</li><li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 330m).</li></ul>			<ul style="list-style-type: none"><li>Habitats will not be reinstated on completion of the works</li><li>Current proposals will require removal of dense scrub, a single tree and associated SI grass verge. Loss of these habitats is unlikely to have a significant adverse effect, but there could be disturbance to nesting birds and ground nesting species using the wider field.</li><li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li></ul>		



Works ID	TR3/PP05	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Roeburndale Woods SSSI	0.5km south of site	66NW13 BHS	1km north of site	56NE12 BHS	1.5km west of site
Clear Beck Meadow SSSI	1km northeast of site	66NW15 BHS	1.8km north of site	56NE15 BHS	1.1km north west of site
Robert Hall Moor SSSI	2.5km northeast of site	56NW17 BHS	1.9km east of site	56NE16 BHS	600m north west of site
Far Holme Meadow SSSI	4.2km southeast of site	66NW36 BHS	400m north of site	66NW04 BHS	100m north of site
		66NW12 BHS	800m north east of site	66NW09 BHS	400m north east of site
		66NE17 BHS	2.0km north west of site	66NW33 BHS	50m north of site
		66NW11 BHS	900m east of site	Historic Species Records	
		66NW21 BHS	1.6km east of site	Brown hare	Within 1000m tetrad containing the site
		66NW35 BHS	800m south east of site	Stone bramble	Within 1000m tetrad containing the site
		66NW08 BHS	700m south east of site	Mallard	Within 1000m tetrad containing the site
		66NW01 BHS	1.6km south of site	Greenfinch	Within 1000m tetrad containing the site
		66SW10 BHS	800m south of site	Pied wagtail	Within 1000m tetrad containing the site
		66SW09 BHS	400m south of site	Atlantic salmon	Within 1000m tetrad containing the site
		66NW02 BHS	900m south of site	Bogbean	Within 1000m tetrad containing the site
		66NW03 BHS	300m west of site	Long-stalked Yellow-sedge	Within 1000m tetrad containing the site
		56NE13 BHS	1.4km south west of site	Globeflower	Within 1000m tetrad containing the site
		56NE11 BHS	1.9km south west of site	Marsh Helleborine	Within 1000m tetrad containing the site
		56NE14 BHS	1.0km south west of site	Bat species	Within 1000m tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond located approx. 500m (south) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Semi-improved neutral grassland Species poor intact hedge	Semi-improved neutral grassland Species poor intact hedge Species rich intact hedge Poor semi-improved grassland Scattered broadleaved trees Dry ditch			TR3.BT3 	TR3.HTN20 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>One tree adjacent to the site has high potential to support roosting bats (TR3.BT3) and two trees adjacent to the site have low potential to support roosting bats (TR3.BT2, TR3.BT1). These trees will not be removed to facilitate works but there is a risk overhanging branches may require removal.</li> <li>The hedgerows provide nesting bird habitat as well as suitable habitat for small mammals (TR3.HTN20).</li> <li>The SI grassland adjacent to the works has ground nesting bird potential.</li> <li>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).</li> <li>Amphibians are unlikely to be present due to distance of nearest potential breeding pond (&gt; 500m).</li> </ul>			<ul style="list-style-type: none"> <li>Habitats will be reinstated on completion of the works</li> <li>Current proposals will require removal of approximately 40 m of species-poor intact hedgerow and associated SI grass verge.</li> <li>Hedgerow could be classed as important under the Hedgerow Regulations 1997.</li> <li>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.</li> <li>Works will result in the small loss of semi-improved grassland associated with the roadside verge and adjoining field. This loss is unlikely to have a significant adverse effect, but there could be disturbance to ground nesting species using the wider field or other species using the dry stone wall.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>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.</li> </ul>		

Works ID	TR3/PP06	Survey Date	24/11/2020 – 26/11/2020 30/11/2020 – 02/12/2020 08/12/20, 10/12/20, 14/12/20	Surveyor	Bowland Ecology Ltd.
Statutory Designated Wildlife Sites within 5km		Non Statutory Designated Wildlife Sites within 2km			
Roeburndale Woods SSSI	0.3km south of site	66NW13 BHS	1.2km north of site	56NE11 BHS	1.8km south west of site
Clear Beck Meadow SSSI	850km northeast of site	66NW15 BHS	2.0km north of site	56NE14 BHS	900m south west of site
Robert Hall Moor SSSI	2.5km northeast of site	56NW17 BHS	1.7km east of site	56NE12 BHS	1.7km west of site
Far Holme Meadow SSSI	3.8km southeast of site	66NW36 BHS	500m north of site	56NE15 BHS	1.3km north west of site
		66NW12 BHS	700m north east of site	56NE16 BHS	800m north west of site
		66NE17 BHS	2.0km north west of site	66NW04 BHS	200m north of site
		66NW11 BHS	800m east of site	66NW09 BHS	500m north east of site
		66NW21 BHS	1.4km east of site	66NW33 BHS	200m north of site
		66NW35 BHS	600m south east of site	6NW16 BHS	1.9km south east of site
		66NW08 BHS	500m south east of site	66NW07 BHS	1.7km south east of site
		66NW01 BHS	1.4km south of site	66SW09 BHS	1.4km south of site
		66SW10 BHS	600m south of site	Historic Species Records	
		66SW09 BHS	200m south of site	Brown long-eared bat	Within 1000m tetrad containing the site
		66NW02 BHS	700m south of site	Common pipistrelle	Within 1000m tetrad containing the site
		66NW03 BHS	500m west of site	Noctule bat	Within 1000m tetrad containing the site
		56NE13 BHS	1.3km south west of site	Soprano pipistrelle	Within 1000m tetrad containing the site
Ponds present within 500m (mapping review only)		Desktop constraints			
1 pond in total, located approx. 400m (south west) from the site.		None			
Habitats Present within Site	Habitats Present adjacent to Site	Habitat Plan		Site Photos	
Bare ground Scattered broadleaved tree Amenity grassland Dry stone wall	Bare ground Amenity Grassland Poor semi-improved grassland Dry stone wall Scattered broadleaved trees Species-rich intact hedgerow Species-poor intact hedge			TR3.HTN19 	TR3.TN7 
Protected Species Assessment			Summary of Constraints		
<ul style="list-style-type: none"> <li>The adjacent stone barn has potential for nesting birds, including barn owl (<i>Tyto alba</i>), and has moderate roosting potential for bats. Nesting and roosting opportunities exist within gaps between stones, roof tiles, open access above the doorways and a collapsed area of roof. If impacts to the barn are anticipated, further bat and bird (barn owl) surveys may be required (TR3.HTN19 &amp; TR3.TN7).</li> <li>A single tree grows up the wall of the adjacent building and has potential to support nesting birds.</li> <li>Other habitats impacted have limited potential to support protected species.</li> </ul>			<ul style="list-style-type: none"> <li>Works largely limited to bare ground associated with an unofficial passing place next to a barn. May require minor removal of grass verges, dry stone wall and a single tree.</li> <li>Works should avoid the nesting bird season or be subject to nesting bird checks.</li> <li>It is assumed the adjacent building with bat roosting and barn owl potential will be adequately protected. No significant impacts on these species are likely to occur as a result of minor road widening in this location.</li> </ul>		



**Haweswater Aqueduct Resilience Programme -  
Proposed Bowland Section  
Supplementary Environmental Information**

**Appendix B7: Annex 6**

**Off-Site Highways Works – TR3 Target Note Report**

January 2022





**Haweswater Aqueduct Resilience Programme - Proposed Bowland Section**



Project No: B27070CT  
Document Title: Proposed Bowland Section  
Supplementary Environmental Information (SEI)  
Appendix B7 Annex 6: Off-Site Highways Works – TR3 Target Note Report  
Document ID: LCC\_RVBC-BO\_SEI-Appendix B7 Annex 6  
Revision: 0  
Date: January 2022  
Client Name: United Utilities  
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**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, Ecologist	Approved:	Alice Helyar, Principal Ecologist
Report reference:	TR3 Highways Target Note Report V1	Date:	05/01/2021
2 Project Drawings			
Phase 1 Habitat Survey Proposed Highways Amendments Proposed Bowland Section		BOW167_HARP_9.5_PH1_TR3_HIGHWAYS	
3 Ecology Surveys			
Surveyors:	Alice Helyar PhD, MSc, BSc (Hons), MCIEEM Eve Loxham MBiolSci (Hons), GradCIEEM Catrin Scott MRes, BSc (Hons) Jodie Marks MSc, Bsc (Hons) Abigail Hamer BSc (Hons)		
Survey date(s):	24/11/2020, 25/11/2020, 26/11/2020, 01/12/2020, 02/12/2020, 08/12/2020, 10/12/2020, 14/12/2020  Survey descriptions and mapping extracted from the original Phase 1 Habitat Survey were undertaken between May 2019 and April 2020. Descriptions and mapping extracted from the Wray Compound and Wray Car Parking survey areas were undertaken in November 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). Lake naturalness is assessed using the Lake Naturalness Assessment Guidance.		
Weather Conditions:	24/11/2020 - Cloud cover (6/8), Wind Beaufort F3 SSE, 11°C, no precipitation 25/11/2020 - Cloud cover (3/8), Wind Beaufort F2 WNW, 5°C, no precipitation 26/11/2020 - Cloud cover (3/8), Wind Beaufort F1 S, 8°C, no precipitation 30/11/2020 – Cloud cover (6/8), Wind Beaufort F5 ES, 10.5 °C, light precipitation 01/12/2020 - Cloud cover (0/8), Wind Beaufort F1 NW, 6 °C, no precipitation 02/12/2020 - Cloud cover (6/8), Wind Beaufort F4 E, 8 °C, light precipitation 08/12/2020 - Cloud cover (8/8), Wind Beaufort F5 SE, 8 °C, raining 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  For weather conditions relating to the Extended Phase 1 Habitat Surveys undertaken in 2019-2020 refer to the separate pertaining reports: “TR3 Wray Compound Target Note Report V1” (Bowland Ecology, 2020); “TR3 Wray Village Car Park Target Note Report V1” (Bowland Ecology, 2020a) and “TR3 Ecology Survey Data Report: Target Note Report V3” (Bowland Ecology, 2020b).		
Limitations to the survey:	Access was not granted to certain sections of the survey area (no known land ID number). These are indicated on the associated plans.		

	<p>The surveys were carried out between November 2020 and December 2020, inclusive. 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 are were viewed from a single elevation due to lack of access.</p>
<b>4 Target notes</b>	
TR3.HTN1	
<p>Semi-natural broadleaved woodland that borders Eskew Lane to the east, along the length of the proposed road widening (RW08), and borders Eskew Beck (TR3.HWC1) to the west. Canopy species present include oak (<i>Quercus</i> sp.), sycamore (<i>Acer pseudoplatanus</i>), ash (<i>Fraxinus excelsior</i>), hazel (<i>Corylus avellana</i>), hawthorn (<i>Crataegus monogyna</i>), beech (<i>Fagus sylvatica</i>), willow sp. (<i>Salix</i> sp.), lime (<i>Tilia x europaea</i>) and silver birch (<i>Betula pendula</i>). Semi-mature conifer trees are present towards the south of the woodland. The woodland has a mixed age structure, with many young trees as well as coppiced hazel and some more mature oak trees. Fallen and standing deadwood are present throughout the woodland. The woodland has been previously managed as evidenced from coppiced and felled trees. Understory is generally sparse, but is occasionally dense at the road edge and includes the species blackthorn (<i>Prunus spinosa</i>), hawthorn, hazel, snowberry (<i>Symphoricarpos albus</i>) and immature tree saplings. The ground layer is sparse and includes pendulous sedge (<i>Carex pendula</i>), cock's foot grass (<i>Dactylis glomerata</i>), bramble (<i>Rubus fruticosus</i> agg.), honeysuckle (<i>Lonicera periclymenum</i>), dogs mercury (<i>Mercurialis perennis</i>), barren strawberry (<i>Potentilla sterilis</i>), woodruff (<i>Galium odoratum</i>), ivy (<i>Hedera helix</i>), tufted hair grass (<i>Deschampsia cespitosa</i>), holly (<i>Ilex aquifolium</i>), sedge species, lady fern (<i>Athyrium filix-femina</i>), hart's-tongue fern (<i>Asplenium scolopendrium</i>) and common polypody fern (<i>Polypodium vulgare</i>). There is some tipped garden waste at the entrance gates and evidence of recreational use within the woodland. Bird boxes are present on some trees and a possible mammal hole (likely rabbit) was also identified.</p> <p>The woodland provides suitable habitat for nesting birds, large mammals (including badger <i>Meles meles</i>), small mammals as well as roosting, foraging and commuting bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR3.HTN2	



The eastern road verge becomes a steep hedge bank towards the southern end of the survey area. The bank has ground flora characteristic of woodland ground flora and is species rich (species listed in the TR3.HH1 description). This area may require re-assessment during the spring if works are to directly impact the verge.

Hedgerows provide linear habitat for commuting and foraging bats, as well as nesting bird and small mammal habitat and also terrestrial habitats for amphibians within the root systems of the trees and hedgerow woody species.

Habitat condition (provisional): Good (Score 3)

TR3.HTN3



Large stand of snowberry within the woodland (TR3.HTN1). Whilst this species is not listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), it is invasive in nature and its spread should be avoided where possible. Scrub and shrub species can provide habitat for nesting birds, small mammals and amphibians.

Habitat condition (provisional): Poor (Score 1)

TR3.HTN4



Stand of rhododendron (*Rhododendron ponticum*) within the understory of woodland adjacent to the river. This species is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Scrub and shrub species can provide habitat for nesting birds, small mammals and amphibians.

Habitat condition (provisional): Poor (Score 1)

TR3.HTN5



Species-poor semi-improved grassland field which has unusual drainage channels with ridge and furrow features. At the

time of survey the species composition was not particularly diverse and characteristic of species poor semi-improved grassland, with species tolerant of wetter conditions in the furrows. If impacted the area should be re-surveyed in summer to assess species richness.

Habitat condition (provisional): Poor (Score 1)

TR3.HTN6



A steep area of the road verge which is a mosaic of habitats including dense gorse (*Ulex europaeus*) scrub, scattered bramble scrub, scattered trees and semi-improved neutral grassland. The tree species is rowan (*Sorbus aucuparia*) and hedgerow TR3.HH8 runs behind the scrub towards the eastern edge. Towards the south the scrub transitions into wet semi-improved neutral grassland and includes the species; wild angelica (*Angelica sylvestris*), common hogweed (*Heracleum sphondylium*), common sorrel (*Rumex acetosa*), herb Robert (*Geranium robertianum*), ribwort plantain (*Plantago lanceolata*), sharp flowered rush (*Juncus acutiflorus*), creeping cinquefoil (*Potentilla reptans*), smooth meadow grass (*Poa pratensis*), cock's foot, black knapweed (*Centaurea nigra*), soft rush (*Juncus effusus*), creeping buttercup (*Ranunculus repens*), Yorkshire fog (*Holcus lanatus*), common nettle (*Urtica dioica*), selfheal (*Prunella vulgaris*), red fescue (*Festuca rubra*) and cow parsley (*Anthriscus sylvestris*). The ground slopes up towards the south and is damp. The mosaic provides habitat for nesting birds, small mammals, terrestrial habitat for amphibians as well as foraging and commuting habitat for bats.

Habitat condition (provisional): Moderate (Score 2)



TR3.HTN7






Narrow area of semi-natural broadleaved woodland which is parallel to the road. The canopy comprises; silver birch, English oak (*Quercus robur*), ash, beech, hazel, rowan and sycamore. The trees range in age from mature, semi mature and immature trees. The understorey is generally dense and is composed of hazel, holly and willow. The ground flora includes; ivy, bramble, fern species, tufted hair grass, cock's foot, meadowsweet (*Filipendula ulmaris*), common nipplewort (*Lapsana communis*), rose sp. (*Rosa* sp.), polypody fern and dog's mercury. The ground is mostly flat and there are historic planting bunds and a clearing / glade within the centre. Deadwood is limited to small diameter fallen deadwood and there is good regeneration with a thick understorey. The glade in the centre of the woodland is characterised as bramble scrub.

The woodland provides suitable habitat for nesting birds, large mammals (including badger), small mammals as well as roosting, foraging and commuting bats.

Habitat condition (provisional): Moderate (Score 2)

TR3.HTN8	
<p>A field which is characterised as species-poor semi-improved grassland. The field is intensively managed and slopes gently to the north-west. There are small areas of marshy grassland within the field which are dominated by soft rush. The soft rush is particularly prevalent in the south-eastern corner, likely where the ground is wetter.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HTN9	No photo.
<p>Semi-natural broadleaved woodland which borders the road located adjacent to the River Wenning (TR3.HWC2). The woodland gently slopes south towards the river. Canopy species include sycamore, ash, alder (<i>Alnus glutinosa</i>) and oak. The trees are semi-mature and immature. There is an understory of tree saplings and is generally sparse and open. The ground flora includes low lying bramble, ivy, dog's mercury, tufted hair grass, cock's foot, soft rush, broadleaved dock (<i>Rumex obtusifolium</i>), creeping buttercup, Yorkshire fog, false oat grass (<i>Arrhenatherum elatius</i>), bugle (<i>Ajuga reptans</i>) and hart's-tongue fern. There is an open glade in the woodland which contains tall ruderal and grassland species. Sections of the river embankment are dominated by snowberry. Further west the woodland contains a row of leylandii (<i>Cupressus leylandii</i>) trees. Ivy grows on a number of the more mature trees and dead wood is limited.</p> <p>The woodland provides habitat for small and large mammals (including badger), nesting habitat for birds as well as roosting, foraging and commuting habitat for bats. Being adjacent to the river it may also provide lay-up sites for otter (<i>Lutra lutra</i>).</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR3.HTN10	
<p>Railway embankments which comprise a mosaic of mature trees, tall ruderals, dense scrub and bare ground (ballast). The embankments slope down away from the railway. Tree species are lime and ash. The scrub is dominated by bramble and additional vegetation recorded includes herb Robert, Yorkshire fog, rosebay willowherb (<i>Chamerion angustifolium</i>) and ivy. Ivy grows on some of the trees, particularly the more mature species.</p> <p>The embankments provide a linear feature for commuting and foraging bats, as well as habitat for nesting birds, amphibians and small mammals.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	



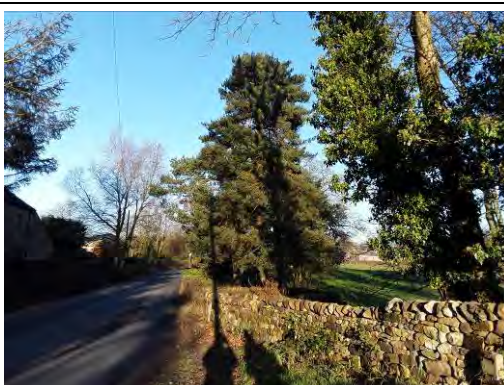
TR3.HTN11	
<p>Railway underpass bridge. Comprising steel girders and stone abutments. The stone abutments are well-sealed; however, gaps extend between the steel girders at the top of the stone abutments towards the back wall. These are suitable for use by roosting bats. Further survey may be required if impacts to the bridge are anticipated. The gaps are also suitable for use by nesting birds. The bridge is single span and narrow, with bare ground / species-poor semi-improved grassland beneath.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>	
TR3.HTN12	
<p>Broadleaved semi-natural woodland adjacent to the River Wenning (TR2.HWC2). The woodland slopes steeply from the road towards the river. Directly adjacent to the river the ground is of a gentler gradient. The trees are semi-mature to mature and saplings are present. Canopy species include; sycamore, oak and beech. The understorey includes pockets of hazel, holly, ash, elder and elm (<i>Ulmus procera</i>) with occasional snowberry to the east. Dead wood from fallen trees is occasionally present. The ground flora comprises; low lying bramble, ivy, hart's-tongue fern, common nettle, speedwell species (<i>Veronica</i> sp.), wood avens (<i>Geum urbanum</i>), dog's mercury, wood melick (<i>Melica uniflora</i>), broad buckler fern (<i>Dryopteris dilatata</i>), male fern (<i>Dryopteris filix-mas</i>), wood sedge (<i>Carex sylvatica</i>), opposite leaved golden saxifrage (<i>Chrysosplenium alternifolium</i>), herb Robert, as well as English bluebell (<i>Hyacinthoides non-scripta</i>). A well-marked footpath runs through the centre of the woodland and there is evidence of recent tree planting.</p> <p>The woodland provides habitat for nesting birds, small mammals, large mammals (including badger), roosting / foraging / commuting bats as well as terrestrial habitat for otter and amphibians.</p> <p>Habitat condition (provisional): Good (Score 3)</p>	
TR3.HTN13	

Broadleaved semi-natural woodland on a moderately steep gradient bordering the road. The tree species are mainly mature and include; oak, beech, ash and lime. The understorey is generally sparse with elder, hazel and holly. There is occasional deadwood present and ivy densely clads some of the trees. The ground flora comprises; dog's mercury, bramble, ivy, hart's-tongue fern, broad buckler fern, violet species (*Viola* sp.), male fern, wood avens and soft rush. The woodland is privately owned and contains a recently installed pathway and bird observatory close to the residential properties towards the east. Near the houses there are several mature rhododendron (*Rhododendron ponticum*) bushes. Rhododendron is listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

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

Habitat condition (provisional): Moderate (Score 2)

TR3.HTN14



A small area of mixed plantation woodland adjacent to a stream (TR3.HWC7). Canopy species include Scots pine (*Pinus sylvestris*) and oak. The understory is very sparse and consists of holly. The ground flora is species-poor semi-improved grassland with occasional tall ruderal species including broadleaved dock and common nettle. There is no deadwood present.

The woodland provides suitable habitat for nesting birds.




Habitat condition (provisional): Poor (Score 1)

TR3.HTN15









Belt of dense marshy grassland bordering and choking a ditch adjacent to road. Species dominated by soft rush with occasional mature scattered scrub. The adjacent field is grazed / degraded marshy grassland, which is intensively grazed and poached by livestock (sheep) and has been topped/mown.




Habitat condition (provisional): Moderate (Score 2)

TR3.HTN16	
	<p>A semi-improved grassland roadside verge adjacent to a dry stone wall. Species present include; Yorkshire fog, common nettle, common knapweed (<i>Centaurea nigra</i>), cow parsley, creeping buttercup, meadow grass sp., creeping bent (<i>Agrostis stolonifera</i>), common hogweed, cock's foot grass, creeping thistle (<i>Cirsium arvense</i>), cleavers (<i>Galium aparine</i>), vetch sp. (<i>Vicia</i> sp.), bramble, yarrow (<i>Achillea millefolium</i>), purple moor grass (<i>Molinia caerulea</i>), and creeping cinquefoil (<i>Potentilla reptans</i>).</p> <p>Verges provide suitable habitat for amphibians, small mammals and nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HTN17	
	<p>Proposed road widening RW22. Both sides of the road contain species-rich hedgerows classified as ecologically important (TR3.H8, TR3.H10 and TR3.H11). The hedgerows are mature, with species-rich ground flora and impacts to these should be avoided where possible.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>
TR3.HTN18	
	<p>Proposed road alterations (PP04). Both sides of the road contain mature, species-rich hedgerows classified as ecologically important (TR3.H8 and TR3.H9). The hedgerows are located on banks with occasional mature trees. Impacts to the hedgerows should be avoided where possible. <b>A potential alternative passing place is noted, slightly down hill (west) where the road is already slightly widened.</b></p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>









TR3.HTN19	
	<p>Area of proposed road alterations (PP06) off the road. This area is already an unofficial passing place of bare ground and species-poor semi-improved grassland. The adjacent stone barn has potential for nesting birds, including barn owl (<i>Tyto alba</i>), and has moderate roosting potential for bats. Nesting and roosting opportunities exist within gaps between stones, roof tiles, open access above the doorways and a collapsed area of roof. If impacts to the barn are anticipated, further bat and bird (barn owl) surveys may be required.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>
TR3.HTN20	
	<p>Proposed road alterations (PP05) within semi-improved neutral grassland verge and adjacent to a hedgerow (TR3.H5). The hedgerow is ecologically important and impacts to this should be avoided. Species present within the grassland include; red clover (<i>Trifolium pratense</i>), greater plantain (<i>Plantago major</i>), creeping thistle, common hogweed, Yorkshire fog, creeping bent, creeping buttercup, common nettle, dandelion sp., meadow grass, cow parsley, bramble, blinks (<i>Montia fontana</i>), horsetail species (<i>Equisetum</i> sp.), sedge species (<i>Carex</i> sp.) and false oat grass.</p> <p>The adjacent hedgerow provides nesting bird habitat as well as suitable habitat for small mammals and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HTN21	
	<p>Location of proposed road widening (RW12). The adjacent parallel hedgerows (TR3.HH21 and TR3.HH20) are classified as ecologically 'important' according to the Hedgerow Regulations; they are species rich and likely to have Schedule 5 ground flora species. Avoid impacts to these hedgerows due to age and diversity of the features. A collapsed field or road drain has left a large hole in the verge.</p> <p>Habitat condition (provisional): Not applicable (no assessment required)</p>

TR3.HTN22	
	<p>Strip of planted broadleaved woodland adjacent to an area of amenity grassland and improved grassland field. Canopy species include; oak, beech, elm, ash, willow and hazel. The understorey is dense as a result of the management of the woodland on the edge of the tree line. The ground layer is dominated by leaf litter and is otherwise sparse, with occasional bramble and cock's foot grass.</p> <p>The woodland provides suitable habitat for nesting birds, roosting / foraging / commuting bats, small and large mammals and amphibians.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HTN23	
	<p>Small area of plantation broadleaved woodland within amenity grassland, possibly in a residential garden. The canopy species comprise silver birch, there is no understorey layer. The woodland provides suitable habitat for nesting birds and foraging / commuting bats.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HTN24	
	<p>Mixed plantation woodland situated between two roads. Canopy species include semi-mature larch, with mature oak and ash and beech at the woodland perimeter. The understorey is dominated by bramble, with rare elder and holly. Ground flora includes; common hogweed, common nettle, Yorkshire fog and raspberry.</p> <p>The woodland provides suitable habitat for nesting birds, small mammals, amphibians and foraging / commuting bats.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>

TR3.HTN25	
<p>Area of marshy grassland, dominated by soft rush tussocks over closely grazed poor semi-improved grassland, that is not considered a ground water dependent ecosystem (GWDTE) and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture).</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	
TR3.HTN26	
<p>Two snipe (<i>Gallinago gallinago</i>) observed within the marshy grassland; over wintering bird presence confirmed.</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	
TR3.HTN27	
<p>Area of marshy grassland that is not considered a GWDTE and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture).</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	



TR3.HTN28	
<p>Area of marshy grassland that is not considered GWDTE and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture). Additional species recorded include bent grasses, meadow grasses, common nettle and red fescue.</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	
TR3.HTN29	
<p>Area of marshy grassland that is not considered GWDTE and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture).</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	
TR3.HTN30	
<p>Area of marshy grassland that is not considered a GWDTE and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture).</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	

TR3.HTN31	
<p>Area of marshy grassland that is not considered a GWDTE and is assessed to align with NVC community MG10 (<i>Holcus lanatus</i> - <i>Juncus effusus</i> rush-pasture). Additional species recorded include occasional damp-loving herbs such as marsh thistle, creeping buttercup, common nettle and broadleaved dock.</p> <p>Habitat condition (provisional): Not applicable (no assessment required).</p>	
TR3.HTN32	
<p>Semi natural broadleaved woodland adjacent to the river Wenning (TR3.HWC2). The canopy is composed of sycamore, ash, beech, alder, oak and cherry (<i>Prunus</i> sp.). Semi mature and mature trees are present adjacent to river, whereas immature and semi-mature are adjacent to road. The more mature trees are generally ivy clad. The understory is sparse and comprises; elder, bramble, immature hawthorn and tutsan (<i>Hypericum androsaemum</i>). The ground flora comprises; ivy, common hogweed, fern sp., reed canary grass (<i>Phalaris arundinacea</i>), hart's-tongue fern, dog's mercury, moss sp., foxglove and common nettle. There is some fallen deadwood (branches of small diameter). A small glade of grassland/tall ruderal vegetation is present in the centre of the woodland where a pathway and access track runs through. The species composition is as for woodland ground flora.</p> <p>The woodland provides suitable habitat for nesting birds, lay up sites for otter, amphibians, small mammals, large mammals (including badger) as well as roosting / foraging / commuting bats.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR3.HTN33	

Area of proposed road widening (RW05). The area is characterised as species-poor semi-improved grassland and includes; Yorkshire fog, creeping buttercup, dandelion and meadow grass sp.. The adjacent hedgerow is species-rich (TR3.HH42). A well is located within the centre of the grassland, with dry stone walls and is approximately 0.25m high. Running water can be heard within and the walls are vegetated with hart's-tongue fern and male fern.

The grassland and well offer potential for amphibians and small mammals.

Habitat condition (provisional): Poor (Score 1)

TR3.HTN34

No photo.

Cotoneaster growing on a wall within the pub garden. Some cotoneaster species are listed as invasive species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Habitat condition (provisional): Poor (Score 1)

TR3.HTN35



Semi-natural broadleaved woodland located on a steep eastward facing slope within a river valley. Canopy species include; hazel, oak, sycamore, silver birch, larch and rowan. The trees have a varying age structure; mature, semi mature and immature trees present, along with some possible veteran trees. Ivy is present on the more mature trees. The understory of holly, hawthorn and tree saplings, including ash is sparse. The ground flora is composed of; bracken (*Pteridium aquilinum*), wood sorrel (*Oxalis acetosella*), creeping buttercup, cock's foot grass, barren strawberry, moss sp., low lying bramble, meadow grass, wood avens, ivy, lady fern, lesser celandine, common polypody fern, honeysuckle, stitchwort species (*Stellaria*) and opposite leaved golden saxifrage. Some dead branches are present on trees and some fallen limbs are present on the ground. There is limited standing deadwood.

Numerous bird boxes are present on the trees which are numbered and presumably part of a nest box scheme. No evidence of badger was noted, however, the woodland is considered suitable for sett excavation due to the steep gradient and foraging habitats nearby. The woodland also provides suitable habitat for commuting / foraging and roosting bats as well as amphibians and small mammals.

Habitat condition (provisional): Good (Score 3)





TR3.HTN36






Small patches of marshy grassland on the lower, flatter base of valley. These areas were assessed to not be GWDTE habitat and aligns with NVC community MG10 (*Holcus lanatus* - *Juncus effusus* rush-pasture). Species-poor semi-improved grassland surrounds the marshy grassland.

Habitat condition (provisional): Not applicable (no assessment required)



TR3.HTN37	
<p>A dense area of swamp surrounding a small watercourse (TR3.WC4). The habitat is located on flat ground within a shallow valley. Species present include greater tussock sedge (<i>Carex paniculata</i>), soft rush, reed canary grass, common nettle and bittercress species. The swamp is surrounded by an area of marshy grassland on the slopes of the valley and species here include wild angelica, creeping buttercup, marsh willowherb (<i>Epilobium palustre</i>), Yorkshire fog, horsetail species, bittercress species, water mint (<i>Mentha aquatica</i>), jointed rush (<i>Juncus articulatus</i>) and soft rush.</p> <p>The area provides suitable habitat for nesting birds as well as small mammals and amphibians.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
<p><b>The following target note descriptions are from "TR3 Wray Compound Target Note Report V1" (Bowland Ecology, 2020).</b></p>	
TR3.WTN1	 
<p>TR3.WTN1 refers to two areas of the same watercourse which are briefly open outside the culvert channel at opposite sides of the field. The surrounding habitats are grassland dominated, with a hedgerow (TR3.WH1) adjacent to the southern open culvert section.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	
TR3.WTN2	
<p>Brown hare (<i>Lepus europaeus</i>) observed along the field boundary travelling from an area of rough grassland. The rough grassland edges of the fields and hedgerows are suitable areas for laying up and forms.</p> <p>Habitat Condition (provisional): Not applicable (no assessment required).</p>	

TR3.WTN3	
<p>A line of mature scrub and scattered trees along the field boundary. This appears to be a former hedgerow which has grown out. There are signs of the feature having been historically laid. The scrub is dominated by blackthorn (<i>Prunus spinosa</i>) with occasional willow (<i>Salix</i> sp.). This area is suitable habitat for nesting birds, as well foraging / commuting bats, and amphibians / small mammals within the ground flora.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.WTN4	
<p>A section of widened roadside verge which is characteristic of semi-improved neutral grassland. The ground slopes gently up towards the hedgerow (TR3.WH4). Species recorded include; garlic mustard (<i>Alliaria petiolata</i>), common nettle, cow parsley, hedge woundwort (<i>Stachys sylvatica</i>), common hogweed, meadow buttercup (<i>Ranunculus acris</i>), cock's foot grass, meadow grass species (<i>Poa</i> sp.), dandelion species, bramble, creeping thistle, common sorrel and cleavers. Common nettle is locally dominant in patches and the grassland is considered to be rank. In general, the area appears to be infrequently managed, although a narrow strip of the grassland appears to be more frequently maintained directly adjacent to the road. This area is a suitable nectar resource for invertebrates and provides habitat for amphibians and small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.WTN5	



Small section of the roadside verge adjacent to the field entrance, which is particularly species-rich. The habitat is classified as semi-improved neutral grassland. It slopes steeply up to the adjacent hedgerow (TR3.WH3). Species recorded include; hedge woundwort, yarrow, red campion (*Silene dioica*), ribwort plantain, greater plantain, cow parsley, meadow grass, white clover (*Trifolium repens*), vetch species, bramble, cock's foot, common nettle, creeping thistle, red fescue, common knapweed, false oat grass, meadow buttercup and speedwell species (*Veronica* sp.). Similar to TR3.WTN4, the verge is infrequently managed and provides a suitable nectar resource for invertebrates and provides habitat for amphibians and small mammals.

Habitat Condition (provisional): Moderate (Score 2)

**The following target note descriptions are from "TR3 Wray Car Park Target Note Report V1" (Bowland Ecology, 2020a).**

TR3.WCPTN1



Belt of broadleaved trees along the southern banks of River Hindburn (TR3.WCPWC1). The trees are predominantly alder and sycamore, with some hawthorn. All of the trees are of a similar age (young to semi-mature) and some are densely clad with ivy. Beneath the trees is a thick layer of brash, and an understory comprising dog's mercury, ivy, common nettle, common hogweed, cock's foot, Yorkshire fog, bramble, raspberry, rosebay willowherb and ox-eye daisy (*Leucanthemum vulgare*). Some areas of bramble scrub are dense. The tree belt provides potential habitat for nesting birds, small mammals and foraging / commuting bats.

Habitat condition (provisional): Poor (Score 1)




TR3.WCPTN2







A belt of broadleaved trees along the eastern riverbank of River Roeburn (TR3.WCPWC2) that are dominated by willow sp.. The trees have a varied age structure but are predominantly semi-mature to mature. A dense layer of bramble scrub forms the understory. The trees provide potential habitat for nesting birds, small mammals and foraging / commuting bats.

Habitat condition (provisional): Moderate (Score 2)



TR3.WCPTN3	
<p>At the confluence of two rivers (River Hindburn and River Roeburn; TR3.WCPWC1 and TR3.WCPWC2) the banks have a significant build-up of deposited stone, gravels and sand. The eastern bank has an area of bramble, raspberry and gorse scrub with hawthorn and rose shrubs and two sapling ash trees. The bank forms a cliff in which sand martins (<i>Riparia riparia</i>) have nested. The scrub also provides sheltered and undisturbed nesting bird habitat. Levels of disturbance from dogs and pedestrians on the western stone and gravel bank limits its potential for nesting birds.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR3.WCPTN4	No Photo
<p>Himalayan balsam (<i>Impatiens glandulifera</i>) scattered within the bramble scrub along the riverbank; a Schedule 9 species (Wildlife and Countryside Act, 1981 (as amended)). It is likely to be much more widespread as the majority of plants have died back at the time of the survey.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.WCPTN5	
<p>A stone, single span road bridge over the River Roeburn (TR3.WCPWC2), which is in a good state of repair, with well-sealed mortar work between the stone blocks on the underside of the arch and the side parapet walls. It has negligible potential for roosting bats.</p> <p>Habitat condition (provisional): Not applicable (no condition score necessary)</p>	
TR3.WCPTN6	

<p>Two stands of snowberry. Snowberry is a non-native plant and spreads in the wild (though it is not on Schedule 9, Wildlife and Countryside Act 1981 (as amended)).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>		
<p>TR3.WCPTN7 (TR3.TN1)</p>		
<p>A small area of broadleaved trees and scrub along a dry, moderately steep, west-facing slope. The broadleaved trees are young and semi-mature and are surrounded by some bramble scrub. The area of dense scrub is dominated by gorse with some hawthorn also present. Some of the trees have a sparse ivy covering. Species present include hazel, sycamore, ash, holly, hawthorn and gorse. The ground flora is dominated by ivy with lesser celandine and less frequently, lords-and-ladies. There are also piles of moss covered brash. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>		
<p>TR3.WCPTN8</p>		
<p>An area of semi-improved neutral grassland on a steep north west-facing slope that is likely too steep for machinery and agricultural inputs. It is therefore grazed by livestock and is more species rich than the upper slope, which is enriched with nutrients and species poor.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>		
<p>TR3.WCPTN9</p>		

Semi-natural broadleaved woodland (with one scot's pine) on a steep hillside above the road and supported by a retaining wall. The woodland comprises semi-mature trees with a few mature oak trees along the upper edge, and a limited number of saplings. Species present include; alder, silver birch, hazel, sycamore, English oak, beech, holly and wild cherry (*Prunus avium*). The understory is sparse and dominated by ferns, with dog's mercury, bramble and tufted hair grass. It is likely to have English bluebells in spring. The woodland is considered to be high risk for badger setts, but no setts were visible at the time of the survey. If impacted by the proposals, further survey may be required. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.

Habitat condition (provisional): Moderate (Score 2)

TR3.WCPTN10



The proposed parking area comprises species poor semi-improved grassland, on a grasscrete strengthened base, along with bare ground. Immediately adjacent to the parking area (south) is a bank of rough grassland (also classified as species poor semi-improved) with (cut back) scrub and tall ruderals. A stone retaining wall borders the property. Scattered young broadleaved trees are present around the parking area. The scrub covered embankment has potential for small mammals.

Habitat condition (provisional): Poor (Score 1)

**The following target note descriptions are from "TR3 Ecology Survey Data Report: Target Note Report V3" (Bowland Ecology, 2020b).**




TR3.TN1







A small area of broadleaved trees and scrub adjacent to a hedgerow on a dry, gentle, west facing slope. The trees are young and semi mature with some scrub. Some of the trees have sparse ivy covering. Species present include hazel, sycamore, ash, holly, hawthorn and gorse. The ground flora is dominated by ivy with lesser celandine and less frequently, lords-and-ladies. There are also piles of moss covered brash. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.





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







TR3.TN2	
	<p>Species-rich verge on wide hedge bank with abundant dog's mercury, common bistort (<i>Bistorta officinalis</i>), cow parsley, lesser celandine, meadowsweet, bush vetch (<i>Vicia sepium</i>), common nettle, cleavers, lords-and-ladies, Yorkshire fog, red fescue, barren strawberry, great willowherb (<i>Epilobium hirsutum</i>), common hogweed, wood avens and bracken. Abundant small mammal holes within the verge.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>
TR3.TN3	
	<p>Curlew (<i>Numenius arquata</i>) calling and displaying in species-poor grassland. Ground nesting bird habitat. Potential for net gain through grassland management to more species-rich grassland.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>
TR3.TN4	
	<p>Line of scattered holly, hawthorn and further east, blackthorn scrub running east-west, with a single, mature ivy clad oak (negligible bat potential). Further east, beyond the survey area, this feature grades into a hedgerow which is tall, outgrown and unmanaged to approximately 4 m. There is no notable ground flora as the vegetation at the base of the scrub line is sheep grazed, as is the adjoining field of species-poor neutral grassland. The feature is fenced to the south but not to the north. There is potential for net gain by planting up the gaps within this feature with native scrub species. Potential for nesting birds foraging and commuting bats, amphibians and small mammals.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>



TR3.TN5	
<p>A group of roadside sycamore trees (negligible bat potential) and hawthorn, holly and elder scrub on a roadside bank which has a ground flora of abundant dog's mercury, hart's-tongue fern, lords-and-ladies, ivy, cleavers, lesser celandine, honeysuckle and cow parsley. Potential for nesting birds and roosting, commuting and foraging bats.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN6	
<p>A line of five mature ash trees alongside a drystone wall and wide grass verge with abundant springy turf moss (<i>Rhytidiadelphus squarrosus</i>), which may be managed as amenity grassland. The verge supports species such as ivy, lesser celandine, cow parsley, creeping buttercup, dock sp. and dandelion. This feature forms the boundary of farm property. The trees are mature but not of significant size, with some sparse ivy cladding on the main trunks. The trees have been assessed separately for bat roost potential. Potential for nesting birds and commuting bats.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN7	 
<p>A large, stone farm building with a partially collapsed roof and ivy cladding. The barn provides potential bat roosting habitat and potential for birds associated with the building including barn owl, as well as nesting birds in the ivy. The southern part of the building has a pitched, slate tiled roof. The roof is collapsed in places and is covered in parts with corrugated metal sheeting but is still open to the elements. There are gaps in the mortar work providing potential access gaps/roosting crevices for bats. Overall the building is assessed to have moderate roosting potential for bats.</p> <p>Habitat Condition: Not applicable (no assessment required)</p>	



TR3.TN8	
<p>Grassland which appeared less improved than those in surrounding area during Spring surveys (early April 2019). This area was checked during peak flowering season and found not to be species-rich. Potential for net gain through appropriate management to develop a more species-rich sward.</p> <p>Habitat Condition (provisional): Poor (Score 1)</p>	
TR3.TN9	
<p>Sheep grazed species-poor, semi-improved neutral grassland with significant rush (<i>Juncus</i> sp.) cover. It has a gently sloping topography and is likely to be suitable for ground nesting bird species.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN11	 
<p>Small area of wet woodland alongside a minor road. The woodland is positioned on a gentle slope away from the road and includes semi-mature trees and scrub. The ground is damp and drains down the slope to a depression. Canopy species include alder, willow, ash, elder and silver birch. The understory comprises hawthorn, holly, willow, bramble, honeysuckle and rose. The ground flora comprises common nettle, red campion, wood avens, tufted hair grass, lords-and-ladies and meadowsweet. There are brash piles on the ground. Potential for nesting birds, foraging and commuting bats, amphibians and small mammals.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	






TR3.TN12	
<p>Stand of potential <i>Cotoneaster</i> and a stand of Montbretia (<i>Crocsmia x crocosmiiiflora</i>) (Schedule 9 invasive species). These specimens are beside the road, opposite a residential property so ornamentals may have been planted or are garden escapes.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN13	 
<p>Broadleaved woodland on a gentle south-east facing slope. The woodland is bordered on the roadside by an old mossy dry-stone wall. The woodland has a mixed age structure of trees with some large mature oaks, along with semi mature sycamore, silver birch and beech. The shrub layer comprises holly, elder, hawthorn and hazel. There is some natural regeneration as saplings are present and some tree guards are also present in the eastern section, indicating recent planting. The ground flora is composed of ivy, wood avens, lesser celandine, honeysuckle, red campion, garlic mustard, herb Robert, greater stitchwort (<i>Stellaria holostea</i>), barren strawberry, lords-and-ladies and, at the base of slope, opposite leaved golden saxifrage. A small stream runs through the woodland (TR3.W5) and east of watercourse carpets of English bluebell area present. There are also numbered bird nesting boxes in this area. The woodland continues along edge of the road south, sloping steeply down (south west facing slope) to a watercourse. Holly scrub is more abundant in this section on the steep slope. Potential for nesting birds, roosting, foraging and commuting bats. Potential for badger though no evidence found. Potential for small mammals and as terrestrial habitat for amphibians.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN14	



<p>Sloping roadside bank approximately 1 m to 1.5 m with interesting flora including; pignut (<i>Conopodium majus</i>), barren strawberry, wood sage (<i>Teucrium scorodonia</i>), wood sorrel, English bluebell, wood avens, lesser celandine, field woodrush (<i>Luzula campestris</i>), germander speedwell (<i>Veronica chamaedrys</i>) and broad buckler fern. Scattered scrub of holly, hawthorn and honeysuckle is also present. Potential for nesting birds, small mammals and as terrestrial habitat for amphibians.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN15	No photo
<p>Species-poor semi-improved grassland with pair of oystercatchers (<i>Haematopus ostralegus</i>) and calling curlew. Potential for net gain through management to develop a more species-rich grassland.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	
TR3.TN16	
<p>Steep bank approximately 2.5 m tall, south-west facing on a sharp bend in the road. Greater stitchwort, wood sage, bluebell, foxglove, ivy, creeping buttercup, wood avens, hogweed, Yorkshire fog, young fern fronds, red fescue, cow parsley, lesser celandine, garlic mustard, common nettle, cleavers, herb Robert and broad buckler fern are present. A mammal run was noted beneath a post and wire fence. To the north, it transitions into a line of roadside trees and scrub including ash, holly, hawthorn, with the ground flora dominated by bluebell along with barren strawberry, bush vetch and violet. Small mammal runs throughout. Potential nesting bird habitat and bat roosting and commuting habitat. Could also provide suitable terrestrial habitat for amphibians and habitat for small mammals.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	
TR3.TN17	
<p>A line of roadside trees and scrub on a steep south-westerly bank. Canopy species include ash, sycamore, silver birch, hazel and oak. The understory includes holly, hawthorn, honeysuckle and bramble. There is some evidence of natural regeneration. The ground flora is patchy, mossy and bare in places but includes occasional ivy, bluebell, lords-and-ladies, garlic mustard, rose sp., lesser celandine, common dog violet, wild strawberry (<i>Fragaria vesca</i>), herb Robert, wood sage, primrose (<i>Primula vulgaris</i>), red campion, foxglove, nipplewort, broad buckler fern, greater stitchwort, bush vetch, germander speedwell and wood sorrel. There are mammal pathways throughout some of which enter nearby fields under the wire fence. Potential nesting bird habitat and bat roosting, foraging and commuting habitat. Could also provide suitable terrestrial habitat for amphibians and habitat for small mammals.</p> <p>Habitat Condition (provisional): Good (Score 3).</p>	







TR3.TN18	
<p>A narrow band of roadside woodland. This habitat is on level ground with a ditch along the roadside edge (TR3.WC3). Canopy species include oak, rowan, ash, willow and silver birch. The understory includes holly, hawthorn and bramble. The ground flora is composed of rush, cow parsley, ivy, meadowsweet, creeping buttercup, red campion, mosses, lesser celandine, hedge woundwort (<i>Stachys sylvestris</i>), rosebay willowherb and great willowherb. To the north-west the woodland splits and transitions into two separate mature tree lines. Between the tree lines the habitat is grassland dominated by tufted hair grass. Potential nesting bird habitat, bat roosting, commuting and foraging potential. Could also provide suitable terrestrial habitat for amphibians</p> <p>Habitat Condition (provisional): Moderate (Score 2)</p>	
TR3.TN19	
<p>Grazed pasture with a high percentage of rushes with a pair of displaying lapwing, curlew calling and four oystercatchers flushed during the survey. The percentage of rush cover is 50 to 60 %, mainly soft rush but some hard rush (<i>Juncus inflexus</i>) also present. This habitat is on fairly level ground. Ground nesting bird habitat. The habitat also has potential for brown hare (<i>Lepus europaeus</i>) laying up sites. Potential for net gain in this section by planting hedgerows and reinstating two dried up ponds.</p> <p>Habitat Condition (provisional): Moderate (Score 2).</p>	
TR3.TN20	
<p>Improved grazed pasture on fairly level ground. A mixed flock of 40 to 50 fieldfare (<i>Turdus pilaris</i>) and redwing (<i>Turdus iliacus</i>). Potential ground nesting bird habitat/passage and foraging habitat.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>	






TR3.TN21	
	<p>Wide roadside verge vegetated with tall ruderals, scrub and a small number of trees. The verge is approximately 4 m wide and separated from the adjacent improved grassland by a post and wire fence. The verge is mounded and uneven. The tall ruderal vegetation comprises; dominant broad-leaved dock, lesser burdock (<i>Arctium minus</i>), cow parsley, creeping buttercup, common nettle, common sorrel, hogweed, cleavers, garlic mustard, dandelion, bent grass (<i>Agrostis</i> sp.), cock's-foot and soft rush. There is also patchy bramble, with occasional honeysuckle. Scrub comprises; hawthorn, elder, holly and willow with two small scrubby ash trees (negligible bat roost potential). The majority of scrub is along the fence line and is possibly an old, outgrown hedgerow. Potential reptile (slow worm (<i>Anguis fragilis</i>)) habitat if present in the area. Potential for nesting birds, and potential terrestrial habitat for amphibians.</p> <p>Habitat Condition: Poor (Score 1)</p>
TR3.TN22	
	<p>Species-poor semi-improved grassland with two pairs of oystercatchers using the dry stone wall as post to call from. Potential for net grain through management to a more species diverse grassland sward.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>
TR3. TN23	
	<p>Scattered rushes within a species-poor semi-improved large open grassland field with at least two lapwing pairs and calling skylark (<i>Alauda arvensis</i>). Anecdotal evidence from a member of public who lives nearby noted that a large flock of golden plover (<i>Pluvialis apricaria</i>) were present within the field during the last week of March and there are also common sightings of meadow pipit (<i>Anthus pratensis</i>). Potential ground nesting bird/passage and foraging habitat. Potential for brown hare laying up sites.</p> <p>Habitat Condition: Not applicable (no assessment required).</p>


Watercourses	
TR3.HWC1	 <p>Moderate flowing stream approximately 1.5 to 5 m wide. 0.1-0.5 m deep with some pools and riffles. Flowing over cobbles, stones, gravels and silt. Shallow banks are earth and stone, with some larger rocks. Downstream the watercourse has some sections of much steeper embankments, which are bare rock with some vertical and undercut areas. Bordered by broadleaved woodland on the eastern bank and species-poor semi-improved grassland, with some small areas of marshy grassland and possible semi-improved neutral grassland to the west. The watercourse flows in a northerly direction. Potential for salmonids, otter, and white-clawed crayfish (<i>Austropotamobius pallipes</i>) but is low risk for water vole (<i>Arvicola amphibius</i>).</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HWC2	 <p>River Wenning. A fast flowing river approximately 18 m wide and up to 0.5 m deep. Flows over a bed of boulders, cobbles, small stones and gravels. Banks are steep to vertical, earth, rock and boulders with engineered banks as it passes beneath the bridge and upstream of bridge close to RW08. Bordered by broadleaved woodland on the east bank downstream of bridge with scattered conifer and broadleaved trees on the west bank. Upstream of bridge both banks are dominated by broadleaved woodland. The bridge itself is well mortared (viewed from the side) and assessed to provide low bat roosting potential, and would need further survey if impacted by works. A mid-stream gravel bank is present upstream of bridge.</p> <p>Further downstream close to RW07, the river is approximately 20 m wide, with an unknown depth and a moderate flow. the embankment to north is broadleaved woodland and semi-improved sheep-grazed field to the south. Roots of trees are present in the watercourse which provide suitable holt locations for otter.</p> <p>Further downstream, within Wennington close to RW06, the river is approximately 20 m wide and up to approximately 1 m deep. The riverbed is as above and the banks range from steep and undercut to shallow (maximum 1 m high) and composed of earth and sand. No root systems present within channel at this location.</p> <p>Overall the river has potential for salmonids, otter, kingfisher (<i>Alcedo atthis</i>) and other nesting birds. Low risk for water vole and white-clawed crayfish due to the fast speed of flow.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>



TR3.HWC3	 
<p>A small watercourse flowing through fields along a field boundary, then is culverted underneath the road before flowing through the woodland and joining River Wenning (TR3.HWC2). It is approximately 0.3 m wide and 0.1 m deep where it flows through the field east of the road. It has moderately steep earth banks, likely to be poached by sheep/livestock in summer. Bed of silt, gravels and occasional large rocks. Within the woodland the bed comprises cobbles and slopes steeply down to river. Low potential for protected species due to low flow, culvert and steep profile through woodland. Dominated by grasses with brooklime (<i>Veronica beccabunga</i>) within the field.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HWC4	No photo.
TR3.HWC5	  <p>Moderate to slow flowing stream that is heavily silted with poor water quality. Likely to be polluted with slurry effluent/runoff from the nearby fields. Approximately 2 m wide and 0.5 m deep. Flows over a bed of stones, occasional boulders and silt. Banks are steep to vertical and bordered by a hedgerow and mature trees on the north bank, with species-poor semi-improved grassland and scrub on the south bank. There is no instream vegetation.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
<p>Small stream, approximately 0.5 m wide and 20 cm deep, culverted beneath road and flows into the River Wenning (TR3.HWC2). Bed of stone, earth banks which are approximately 0.5 m deep and near vertical. No aquatic vegetation is present and the bankside vegetation comprises bramble, ivy and dog's mercury. A collapsed footbridge partially blocks the watercourse. Negligible protected species potential. Flowing from roughly north-east to south-west. Further upstream the watercourse flows along a hedgerow between species-poor semi-improved grazed fields. Here the width is 30 cm and depth 4 cm. The substrate is pebbles and sand/soil. Negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	



TR3.HWC6	
	<p>Slow to stagnant flowing stream within woodland that flows into the River Wenning (TR3.HWC2). The channel is choked by leaf litter and completely shaded by overhanging mature trees. The watercourse is likely to have variable water levels depending on rainfall. Steep, muddy banks which are vegetated with hart's-tongue fern, ivy and leaf litter on embankment. Width is approximately 1 m and depth 5 cm at the time of survey. The stream culverts under a stone bridge before reaching the river. Possible otter use for foraging or access to woodland lie-up sites.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>
TR3.HWC7	
	<p>Moderately flowing stream adjacent to road and flowing between a mixed plantation woodland. A stone wall is present on the north-western side. Width varies from 1 m to 3 m in places and depth of 30 cm, deeper in places where the stream pools. Rocky substrate. A shallow stone bridge is present with two channels. If impacted by works, further checks for bat roosting potential may be necessary. Further upstream, the watercourse meanders with snowberry and elder scrub and mature oaks on western bank. Sheep grazed species-poor semi-improved grassland borders the east. Banks are rocky and vegetated with ivy.</p> <p>The watercourse provides suitable habitat for commuting otter, although it is considered to have negligible potential for white-clawed crayfish and water vole.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>
TR3.HWC8	

<p>Moderate to fast flowing wet ditch adjacent to TR3.HH29 and grassland field, flowing in a northerly direction. The watercourse culverts under the road for approximately 40 m. Banks and substrate are soil and sand. The width is up to 1 m in places and 30 cm tall. No aquatic vegetation was noted. Negligible potential for otter, water vole or crayfish due to the culvert. Upstream of the culvert, the watercourse runs adjacent to a stone wall and species-poor semi-improved grassland field. Here the watercourse is slower flowing and approximately 50 cm deep.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HWC9	No photo.
<p>Small stream running along the edge of broadleaved woodland. Dense scrub surrounds the water course, restricting visibility. The dense scrub is comprised of bramble, elder and hawthorn. The watercourse is culverted at both ends. The watercourse has negligible protected species potential.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HWC10	
<p>Small stream running parallel to the road. Approximately 0.5 m wide and max 20 cm deep. The substrate is cobbles, small stone and gravel. Stone wall bank is present on one embankment and the other is an earth bank (approximately 30cm deep, vertical). No aquatic vegetation was noted. Hart's tongue fern and ground ivy are growing out of the stone wall. The watercourse is adjacent to species-poor semi-improved grassland. Negligible potential for protected species due to close proximity of road and presence of culvert through which it flows.</p> <p>Habitat condition (provisional): Poor (Score 1)</p>	
TR3.HWC11	
<p>Watercourse flowing roughly from southeast to northwest through an area of broadleaved woodland. The watercourse is moderately fast flowing and has slightly turbid water at time of survey, likely due to recent heavy rainfall. Approximately 2 m wide, and ranging from approximately 0.2 m to 0.75 m deep. There are some areas of deeper pools as well as some areas of riffles which are shallower. The stream flows over cobbles, stone and gravel. The majority of the watercourse embankments are bare, exposed bedrock which ranges from approximately 0.25 to 1.5 m tall, with most areas vertical to undercut. Vegetation on the banks include tufted hair grass, moss species, wood avens and fern species. No aquatic vegetation was noted. Numerous trees are growing adjacent to watercourse providing shade. Many of the trees have root systems growing on the stone banks.</p> <p>The watercourse has potential for otter, including holt locations. There is negligible potential for water vole and crayfish due to the fast flow rate and heavily shaded by trees.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	
TR3.HWC12	No photo.
<p>Short section of a fast flowing stream, flowing roughly from south to north, along a northward facing slope. Approximately 30 cm wide and 20 cm deep. The bed and banks of the stream comprise earth; the banks range from approximately 30 cm tall to 5 cm, from near vertical to very shallow. No aquatic vegetation was noted, and the bankside vegetation includes soft rush, common nettle, moss species and Yorkshire fog. Negligible protected species potential. The channel is at times indistinct and flows beneath the ground before re-appearing as small springs further down the slope. It flows into TR3.WC4 at the western end.</p> <p>Habitat condition (provisional): Moderate (Score 2)</p>	

*The following watercourse descriptions are from "TR3 Wray Compound Target Note Report V1" (Bowland Ecology, 2020).*

TR3.WWC1



A slow to moderately flowing watercourse which emerges from a culvert and flows roughly east to west along a field boundary at the edge of the survey area. The embankments are vertical dry-stone walls, apart from a small section which is livestock poached where the embankments are shallower. The watercourse is mostly fenced on both sides apart from the small section with livestock access. The width is approximately 1.2 m and depth approximately 30 cm. Brooklime occurs rarely along the surveyed length and otherwise there is no in-channel vegetation. The embankments are vegetated with mature blackthorn and hawthorn scrub, with occasional opposite-leaved golden saxifrage, hart's-tongue fern, male fern, bramble and common nettle. At the eastern edge of the watercourse is a mature English oak. There is negligible potential for protected aquatic species, although foraging bats may utilise the embankment vegetation.

Habitat Condition (provisional): Poor (Score 1)

TR3.WWC2



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

Habitat Condition (provisional): Poor (Score 1)



The following watercourse descriptions are from "TR3 Wray Car Park Target Note Report V1" (Bowland Ecology, 2020a).

TR3.WCPWC1



The River Hindburn; a fast flowing river approximately 8-10 m wide and over 2 m deep in places. It flows over a bed of boulders, cobbles, small stones and gravels. The north eastern bank is more gradual with a small sand cliff set back from the river, in which sand martin nest holes are present (breeding bird risk). The south western bank is steep to vertical or undercut in places and vegetated with a belt of broadleaved trees, comprising alder, sycamore and willow. The ground flora comprises great woodrush (*Luzula sylvatica*), bramble, tufted hair grass, wood avens, dog's mercury, herb Robert, red campion, hart's tongue fern, ivy and cow parsley. The river provides habitat for salmonids, otter and breeding birds, including kingfisher. It is considered to be low risk for water vole and white clawed crayfish due to the high speed and depth of flow. Tree root plates, overhanging the watercourse provide lie up sites for otter. The works may have the potential to cause pollution of the watercourse.

Habitat condition (provisional): Moderate (Score 2)

TR3.WCPWC2



The River Roeburn; a fast flowing river that flows over a bed of boulders, cobbles, large stones and gravels. It is approximately 5-6 m wide and up to 0.5 m deep. The banks are steep to gradual earth and stone banks, with some sections of both banks being engineered and reinforced with large boulders as well as mortared stone walls. The watercourse is considered to be high risk for otter and salmonids, and low risk for water vole and white clawed crayfish. There is little/ no instream vegetation within the section surveyed and the bankside vegetation comprises broadleaved trees (woodland belt), bramble scrub and plants characteristic of broadleaved woodland understory. This river flows into the River Hindburn (TR3.WCPWC1) within the survey area at TR3.WCPTN1.

Habitat condition (provisional): Moderate (Score 2)

*The following watercourse descriptions are from "TR3 Ecology Survey Data Report: Target Note Report V3" (Bowland Ecology, 2020b).*

TR3.WC1



A shallow, slow flowing stream between a row of mature trees and roadside hedgerow. The width is less than half a metre, and the depth is less than 5 cm. The banks are steep earth and are bare of vegetation, with rocks and dead wood abundant. There appears to be a drain present as broken clay pipes were observed. It is not fenced from the adjacent sheep grazed field and therefore heavily poached. It possibly flows beneath a road and the watercourse is likely heavily shaded when the trees are in leaf. Unsuitable for water vole, otter and white-clawed crayfish.

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

TR3.WC2



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

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

TR3.WC3



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

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

TR3.WC4



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

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

TR3.WC5





A narrow ditch approximately 30 cm wide and unfenced from the surrounding rush pasture. As such, the banks are poached. The ditch is unshaded with only occasional bankside mature oak trees. The water flow is moderate and depth is up to 10 cm. Water clarity is good and the substrate is silty. There is some filamentous algae within the water column. The banks are 0.8 m high and vegetated with grasses and patches of soft rush with common nettle. The ditch flows into a circular pipe beneath the road. It is a marshy seepage inflow into the watercourse from the adjacent field which originates from a pipe set in a concrete block. There are patches of aquatic vegetation including floating sweet grass (*Glyceria fluitans*), water starwort species, crowfoot species (*Ranunculus sp.*), brooklime and, at the water's edge, blinks. Negligible protected species potential.

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

TR3.WC6



A ditch which flows beneath the road. There are occasional bankside hawthorn but other than that the watercourse is unshaded. To the east the watercourse is approximately 1 m wide with a moderate flow of clear water, to a depth of 10 to 15 cm. The banks are tall in places, up to 2 to 3 m and steep sided, comprised of mud and rocks. The banks are vegetated with the species of the surrounding field i.e. dominant soft rush. The base of the stream comprises rocks of various sizes and it is unfenced from adjacent sheep-grazed fields. To the west of the road the channel is less rocky and densely vegetated with soft rush such that the channel is indistinguishable in places. In slower flowing sections, particularly where the stream changes direction abruptly and flows along the edge of the road there are shallower sections vegetated with the same species as at TR3.WC5 i.e. crowfoot sp., floating sweet grass, blinks and water starwort species. A pair of snipe were flushed from the banks during survey. Potential nesting bird habitat. Potential for water vole or potential reintroduction site to provide net gain. Some potential for white-clawed crayfish in sections. Otter may forage and commute through the watercourse but there are no suitable holt or couch locations in the survey area.

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

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Bowland Ecology. (2020). *TR3 Wray Compound Target Note Report V1*.

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