Haweswater Aqueduct Resilience Programme – Proposed Bowland Section

Volume 6

Proposed Ribble Crossing

Technical Appendix 9A.2: Habitats

June 2021

Haweswater Aqueduct Resilience Programme

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Contents

1. Habitat Survey

1.1 Introduction

1) TEP was appointed by United Utilities to complete an Ecological Impact Assessment (EcIA) for the Haweswater Aqueduct Resilience Programme. The EcIA is required to inform an Environmental Impact Assessment (EIA) and support production of the Environmental Statement (ES)

2) Ecological surveys were undertaken to complete the EcIA. This Appendix is one of a series of Ecological Technical Reports (ETRs) produced to support the EcIA. This ETR documents the methods and findings of the Phase 1 habitat surveys undertaken by TEP.

1.2 Summary of Findings

3) A wider area was surveyed than will be potentially impacted by the proposed works within the Proposed Ribble Section. Consequently only some of the habitats surveyed and presented within the following Technical Appendix, including Target Note descriptions (Appendix A) will be used to inform the EcIA.

4) The habitats which fall within influencing distance of the proposed works which will be included within the EcIA are summarised in Table 1.

Table 1: Habitats within Proposed Ribble Crossing Section

Habitat	Area
Improved grassland	28.59 ha
Semi-improved grassland	0.16 ha
Bare ground/ tall ruderal mosaic	0.14 ha
Dense / continuous scrub	0.18 ha
Running water (River Ribble)	0.50 ha
Buildings	0.12 ha
Bare ground	0.10 ha
Hard standing	<0.01 ha
Linear habitats	
Running water (mesotrophic) *	732 m
Intact native species rich hedgerow	584 m
Intact native species rich hedge and trees	56 m
Intact native species poor hedgerow	584 m
Defunct native species poor hedgerow	468 m
Intact native species poor hedge and trees	167 m
Walls	241m
Wet ditch	534 m
Dry ditch	60 m
Trees	
Scattered broadleaved trees **	205 no. Individual and 97 no. groups

** *Individual tree counts are based on a combination of Jacobs arboriculture survey data and TEP ecology survey data. All trees identified during the arboriculture survey are included alongside TEP trees where TEP had mapped scattered trees but arboriculture survey had identified groups (only where it was not appropriate to re-map the Phase 1 habitat as plantation woodland, scrub or hedge. This ensures no trees fall outside of being assessed, as either an individual tree or part of hedge / plantation / area of scrub.*

1.3 Survey Methods

5) Habitats were subject to survey if they fall within or are adjacent to the Indicative Development Envelope as part of 2020 survey work. Extended Phase 1 habitat survey methods were undertaken in line with JNCC and CIEEM Guidelines.

Limitations

6) The Phase 1 habitat survey was undertaken outside the optimal survey season of late April to early October. Flora is in suboptimal condition for identification outside this season. However, with the majority of the site comprising habitats of relatively low ecological value, the seasonable constraints are not considered to significant limit the survey results. Additionally, the assessment area was extended slightly after the site visit took place and as such, an additional area to the east of the site that was not walked (marked on Figure 9A.5). The habitats were mapped from aerial imagery and knowledge of the existing habitat in the same field, within the surveyed area. Not walking this small section of the site is not considered to have an impact on the overall assessment of the habitats.

7) A variety of weather conditions were encountered during the survey work. None of the conditions were adverse enough to impact negatively on the completion of the survey work.

2. Ecological Designations

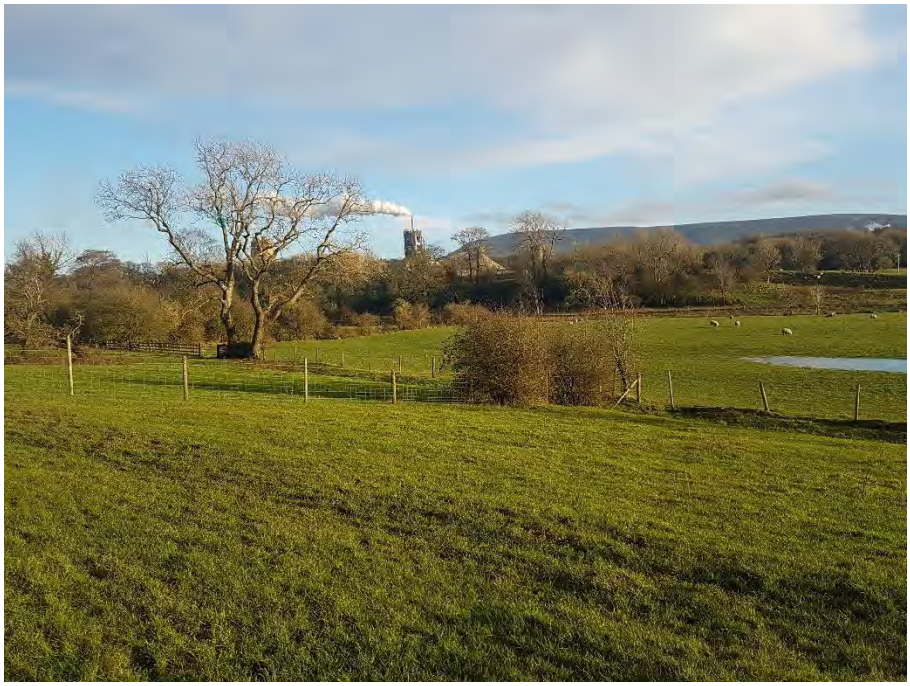
Table 2: Ecological Designations

Is site within close proximity to a statutory or non-statutory protected site?	☒ Yes	☐ No
SAC/SPA/RAMSAR	☐	No SAC/SPA/ RAMSAR
SSSI/NNR	☒	• Coplow Quarry (SSSI) • Salthill and Bellmanpark Quarries (SSSI) • Clitheroe Knoll Reef (SSSI) • Hodden River Section (SSSI) • Little Mearley Clough (SSI) • Cross Hill Quarry (LNR) • Salthill Quarry (LNR)
Biological Heritage Sites (BHS)	☒	• River Ribble from London Road Bridge Preston, in West, to County Boundary, in East • Waddington Brickworks Old Working • Cross Hill Quarry • Hospital Wood • Coplow Quarry and Pimlico Road Grasslands • Dog House Wood • Drakehouse Wood • Sherburn Wood • Boy Bank • Bellman Farm Marsh • Feazer Wood • Salthill Quarry • West Clough Wood • Clitheroe Castle Knoll • Bellman Park Quarry
Important Bird Area (IBA)	☒	• Bowland Fells

3. Habitat Survey Results Overview

8) A description of the habitats listed above (Table 1) are given below, within Table 3.

Table 3: Habitat Descriptions

Habitat	Description
Improved grassland	This habitat is present throughout the Proposed Ribble Crossing and across the majority of the site. The intensively sheep grazed fields are dominated by perennial ryegrass *Lolium perenne* with occasional occurrences of other coarse grasses. The sward comprises very few herbs, and those present are nutrient tolerant i.e white clover *Trifolium repens.* Associated Target Notes: TN1 

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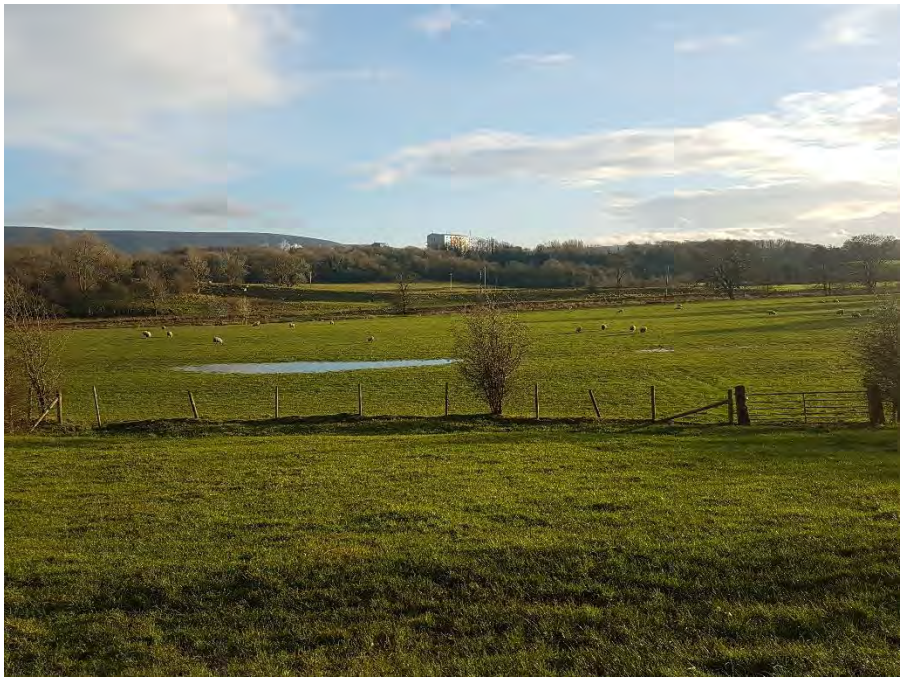
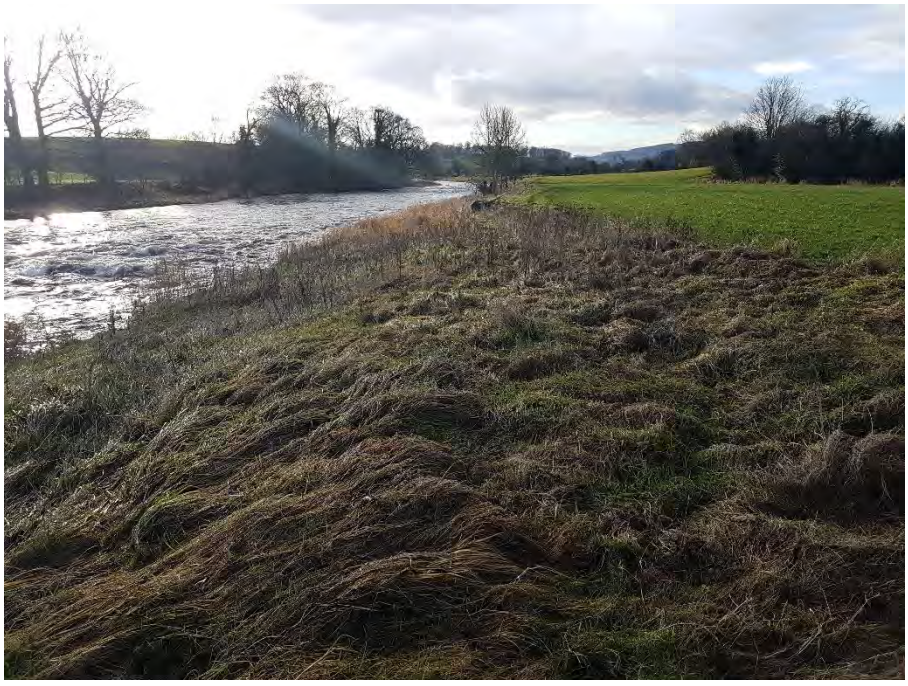
	
Semi-improved grassland	Strips of this semi-improved grassland are present along the edge of the River Ribble (around 6-8m wide on the northern side), as well as along the embankments of Copow Brook (c.2m wide) within the northern part of the site. Left un-grazed and un-cut, the swards of these field and watercourse edges have become dominated by rank, coarse grasses with biennial herbs, indicative of more nutrient rich soils. Associated Target Notes: TN4 

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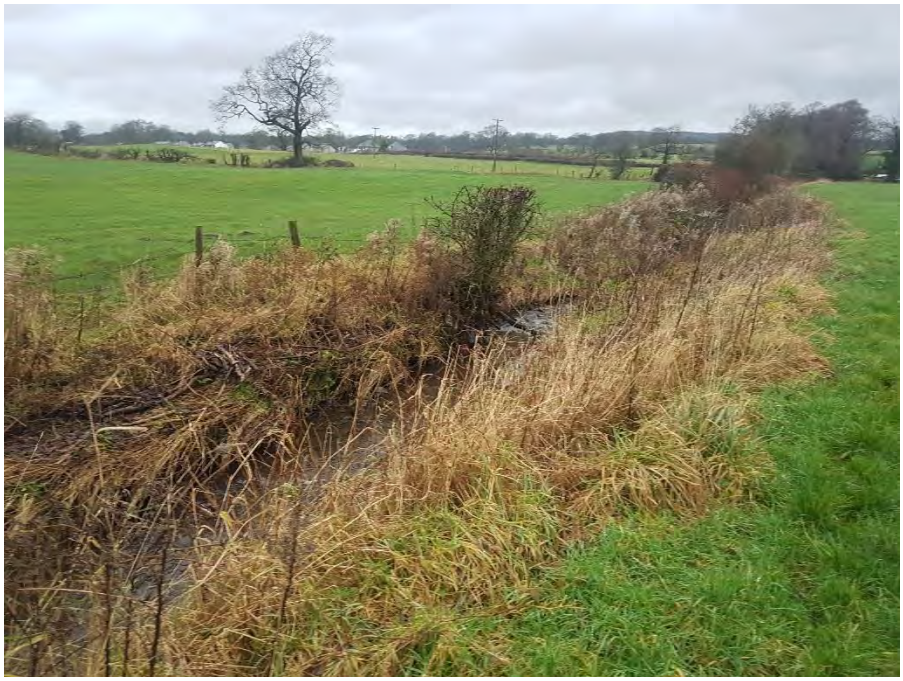
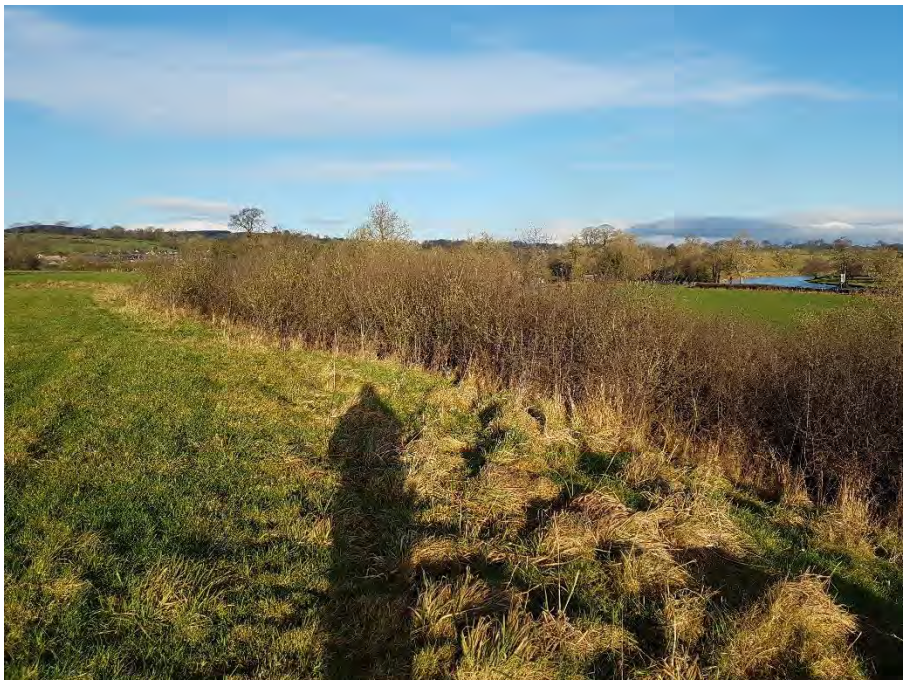
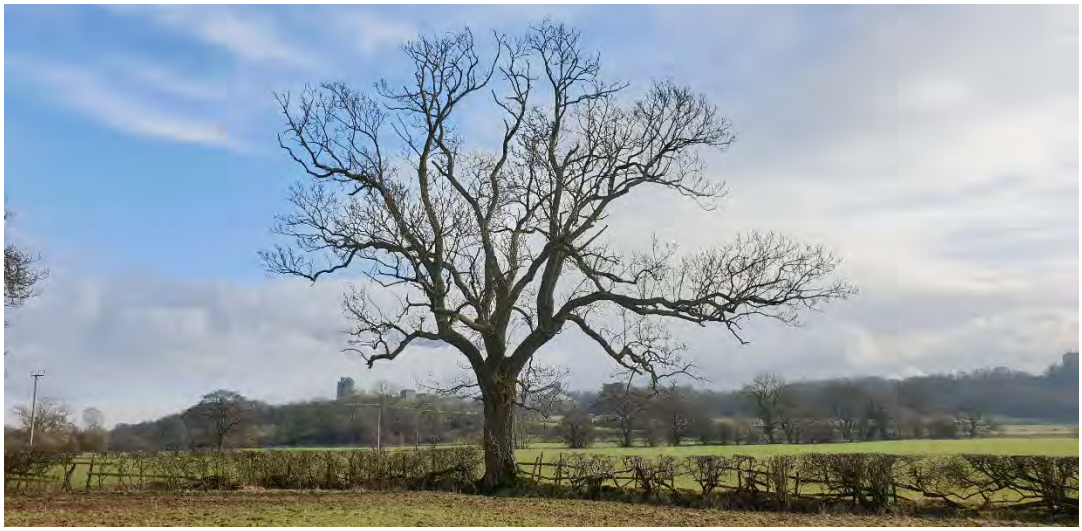
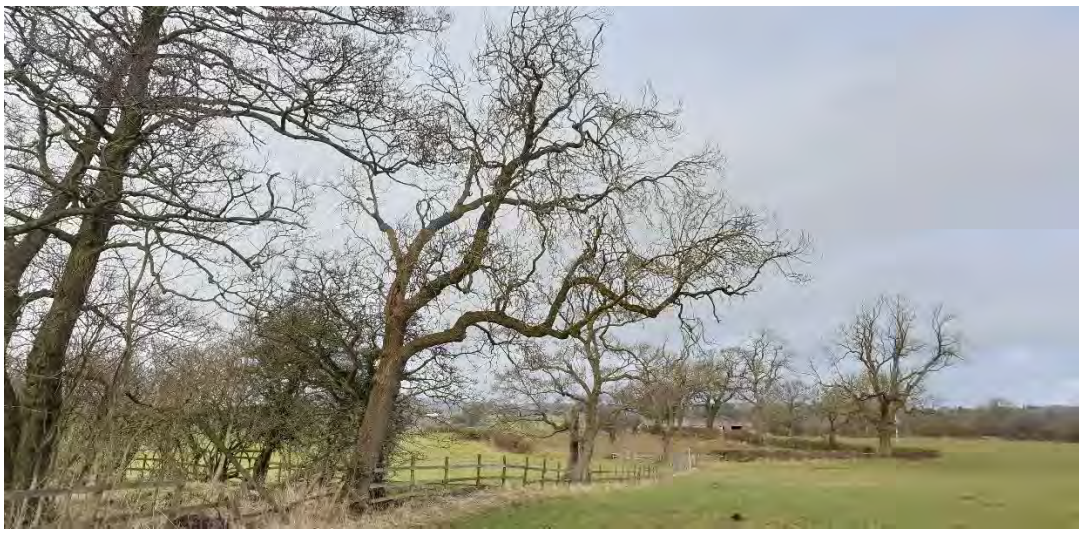
	
Dense/ continuous scrub	This habitat is present within the north east of the site where a thicket of dense blackthorn scrub has encroached from an outgrown species rich hedge. Associated Target Note: TN9 
Buildings	A farm and associated sheds/ out-houses is present just outside the southern boundary of the site, off West Bradford Road The only buildings with the redline line is a barn, situated along the eastern side of Coplow Brook within the north of the site.

Habitat	Description
	Associated Target Note: TN2
Bare ground	This habitat is associated with a track coming from a farm to the west of the site (off B6478), directed towards Coplow Brook.
Bare ground/ tall ruderal	This habitat is along the southern section of the River Ribble. Regularly walked and within the drawdown of the River, the ground has become bare/ muddy with scattered ruderal herbs establishing.
Hard standing	This habitat is associated with the roads that just fall within/ along the site boundaries; including West Bradford Road and an access road off B6478 to a house and onto the barn within the site boundary.
Scattered broad-leaved trees	This habitat was present mainly across the field boundaries (either fence lines or hedgerows) and along the watercourses across the site. Frequently occurring species include ash and alder.  

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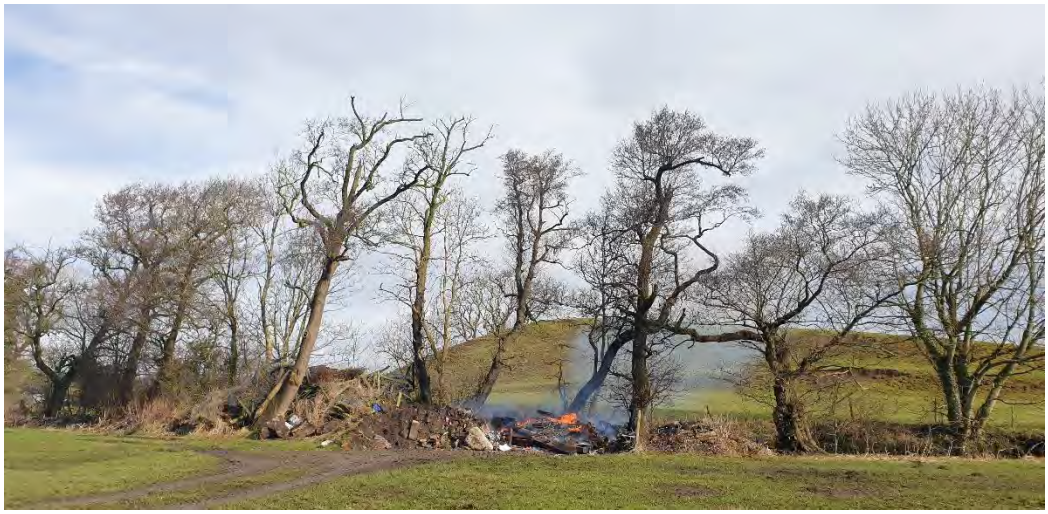
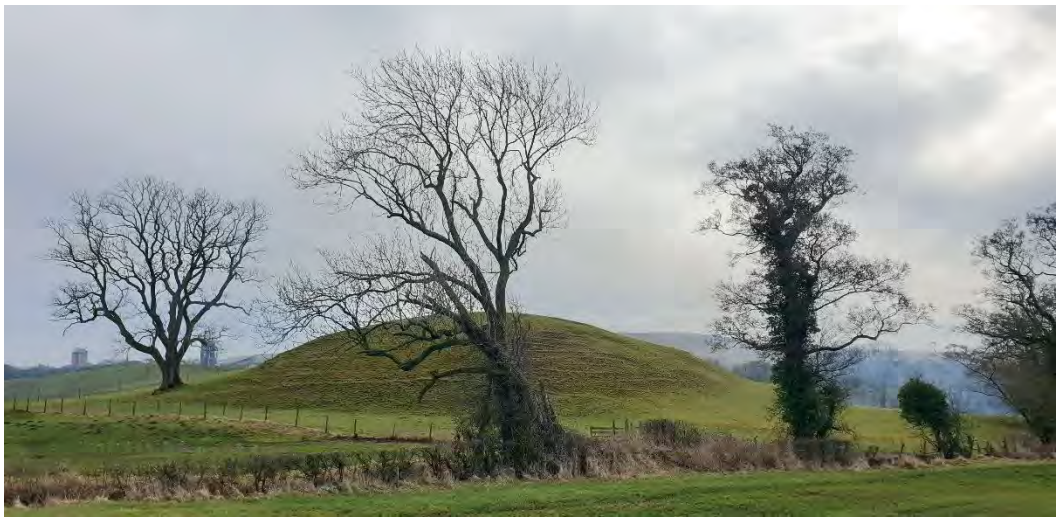
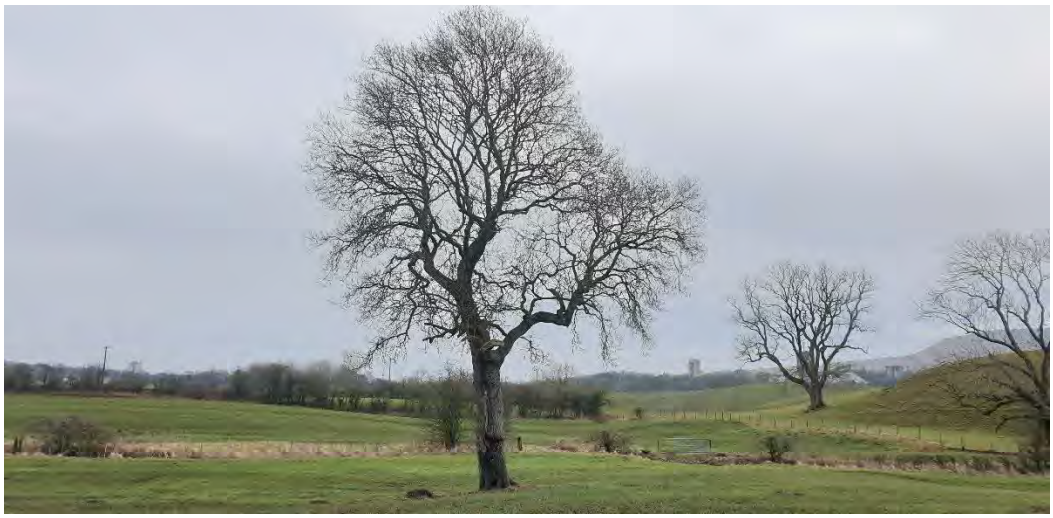
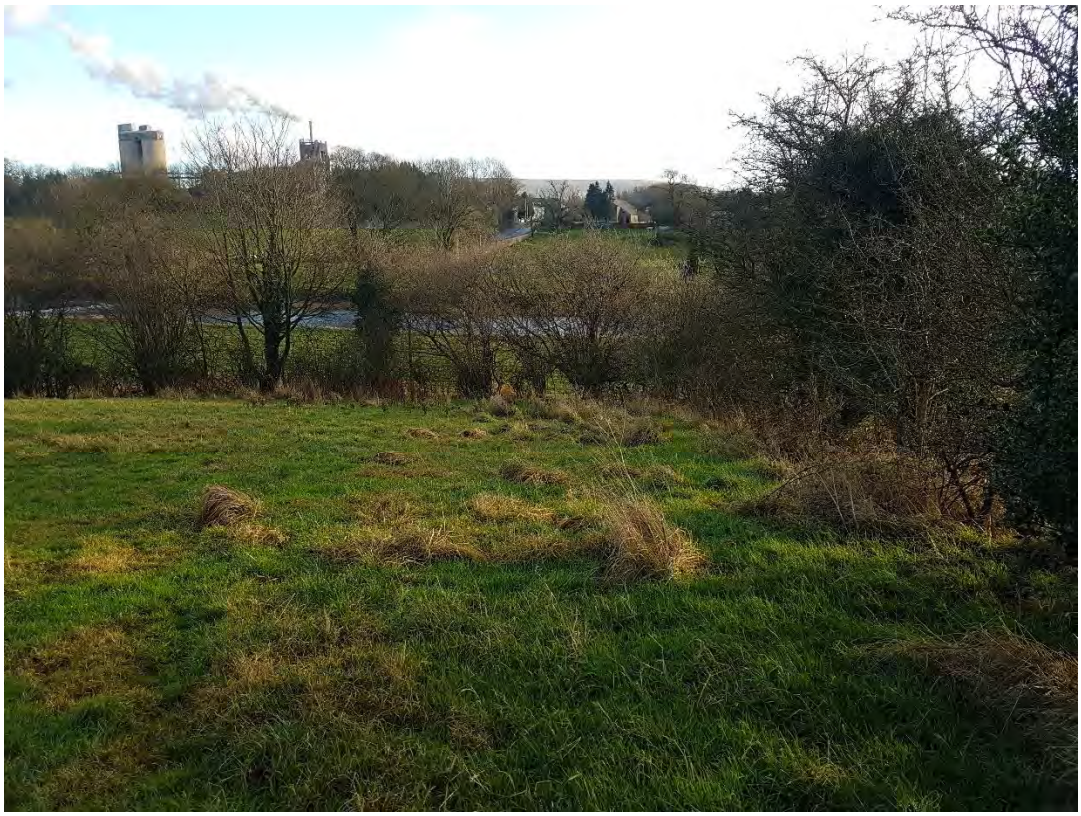
	
	
	
Scattered scrub	Pockets of scattered scrub are present. Along the edge Coplow Brook lies some bramble scrub scattered along the embankment, within the poor-semi improved grassland sward and

Habitat	Description
	tall ruderal mosaic. Small patches of hawthorn scrub lie along the edge of one of the central fields, likely the remains of an old remnant hedge.
Native hedgerows	There are a 14 native hedgerows across the field boundaries associated with the site and along the site boundary. These range in their species diversity and associated features, including stream and wet/ dry ditch. Of the 14 hedgerows: • There are four native species rich, intact hedges; HRC.H22, HRC.H20, HRC.H18, HRC.H17, which concentrated in the east of the site, north of River Ribble. Associated target notes include TN5, TN6, TN7. • There is one species poor hedge and trees (HRC.H1) • There is one species rich hedge and trees (HRC.H16) along Greg Sike - associated target note - TN10. • There are four species-poor intact hedges; HRC.H19, HRC.H11, HRC.H21 and HRC.H5 (TN8). • There are four species poor, defunct hedgerows; HRC.H3, HRC.H4, HRC.H12 (along the southern section of Coplow Brook), and HRC.H10 

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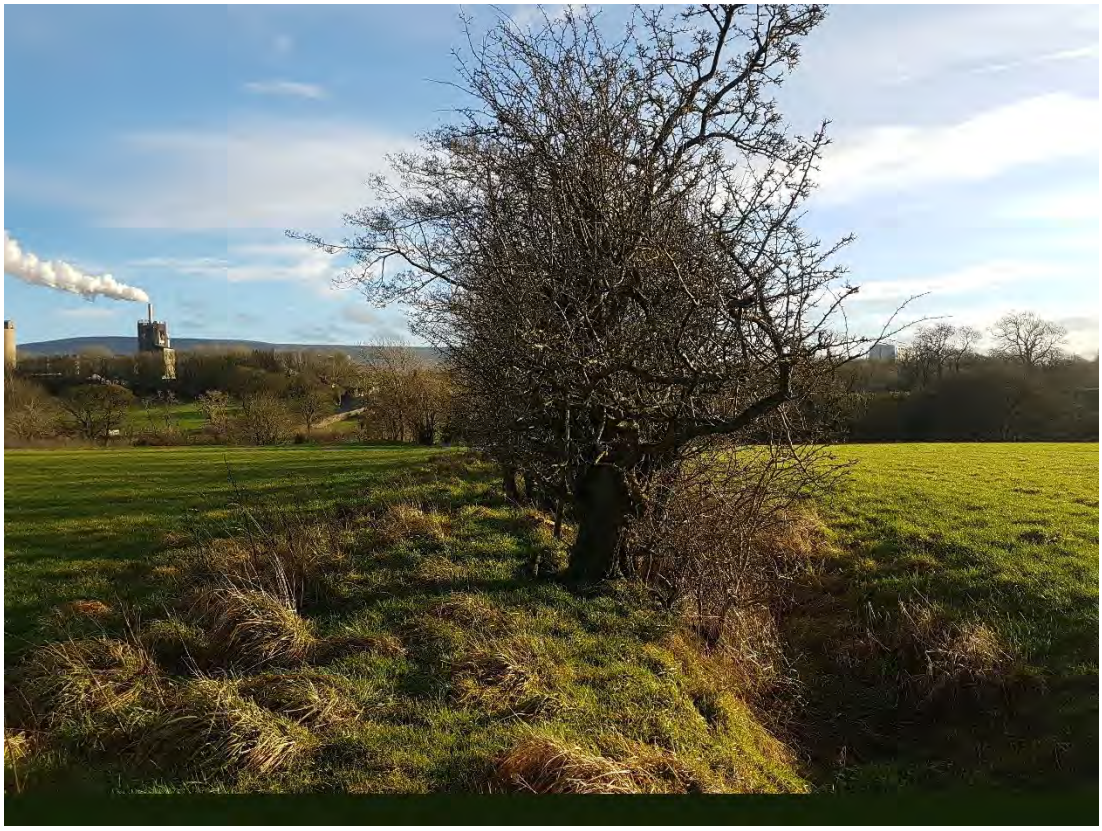
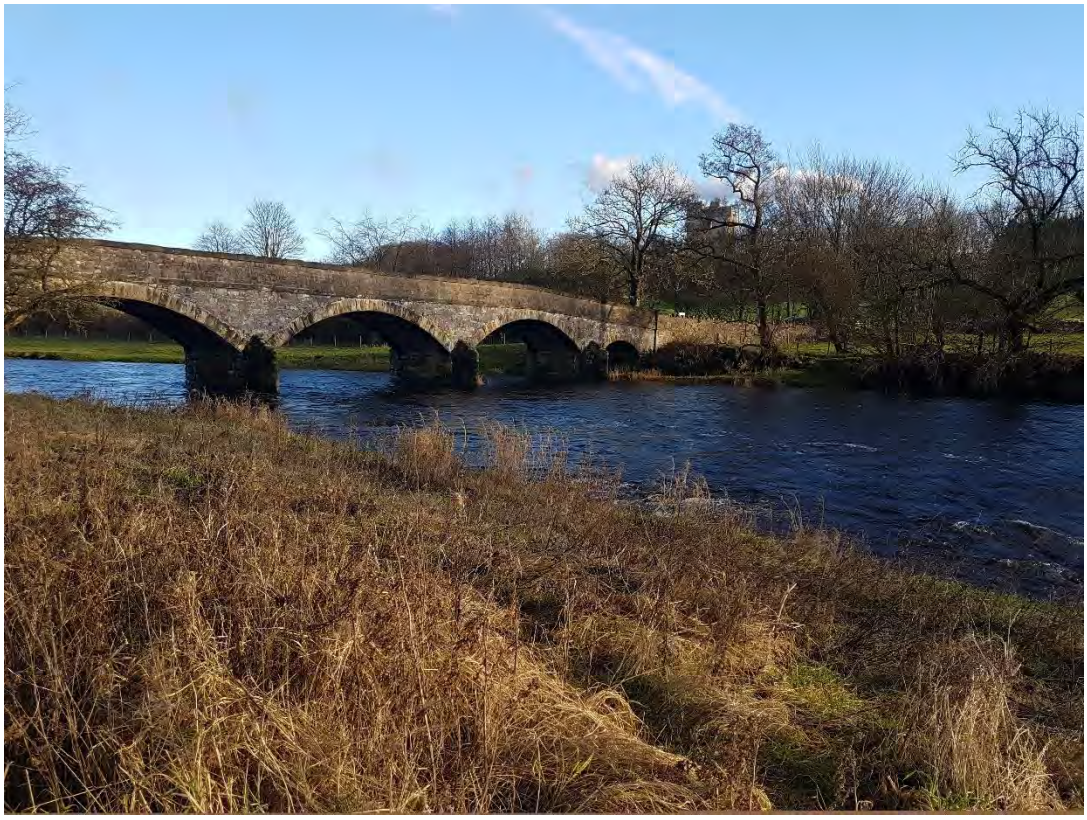
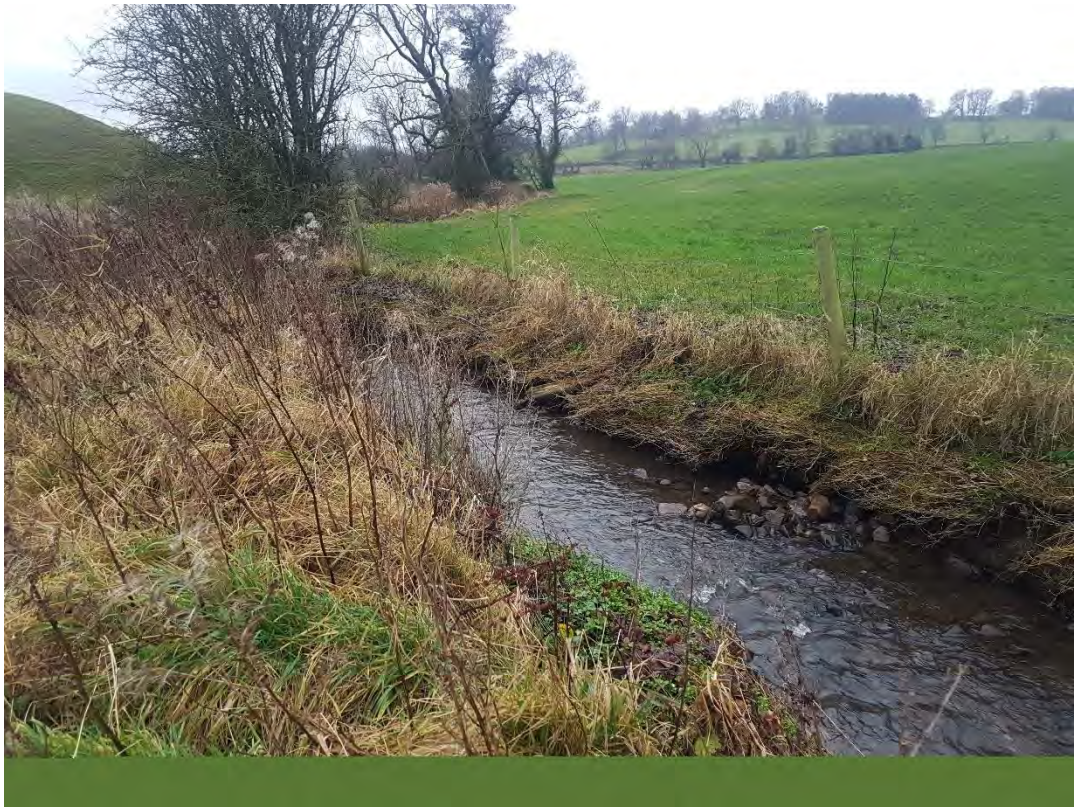
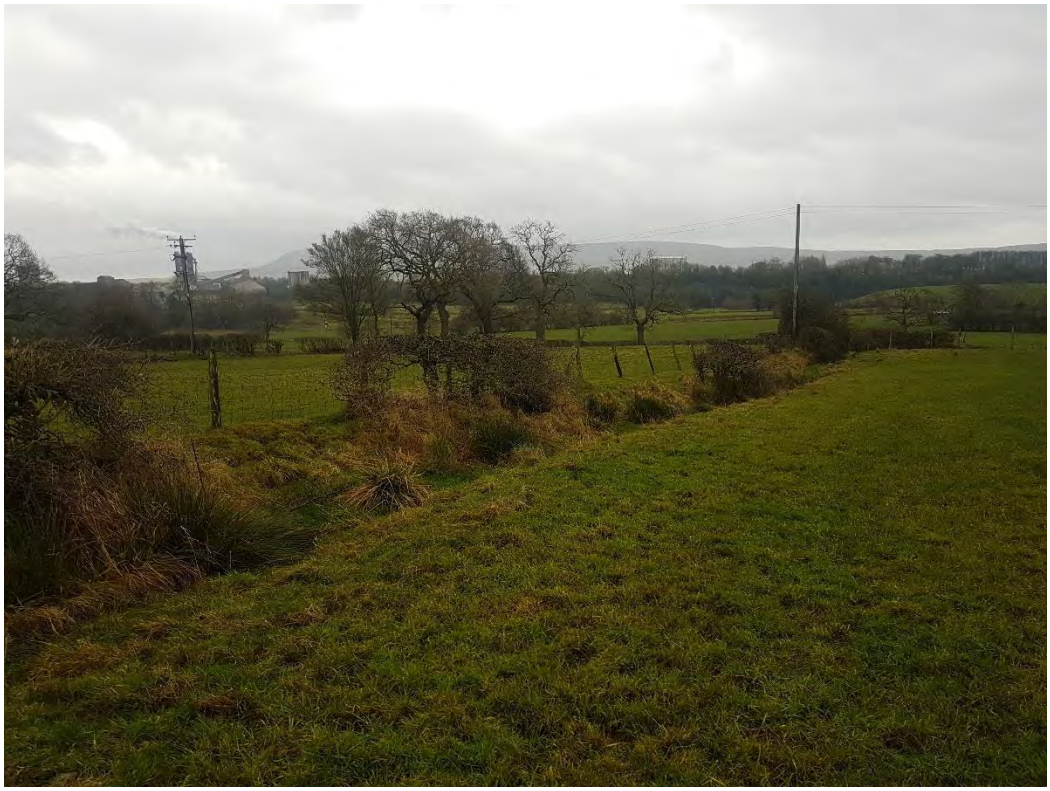
	
Walls	A dry stone walls is present along the site boundary in the south of the site, leading from the farm north to the River Ribble.
River	The River Ribble flows west across the southern section of the site. At the time of survey the river was in spate.

Habitat	Description
	
Streams/ ditches	A number of streams and ditches are present along field boundaries, some at the base of the hedgerows. Coplow Brook flows south from West Bradford Road within the west of the site, down to the River Ribble. Greg Sike also flows south into the River Ribble, down the centre of the site. Associated Target Notes: TN6, TN7, TN4, TN11

Habitat	Description
	
Dry ditches	All ditches on site held water apart from a dry ditch that is present along a field boundary within the centre of the site. 

3.1 Priority and notable habitats

9) The improved grassland across the Proposed Ribble Crossing survey area (and small section of poor-semi improved grassland), by their very nature is lacking in the species diversity to be considered good quality grassland and as such does not qualify as S41 lowland meadow habitat.

10) The river and streams across the Proposed Ribble Crossing survey area qualify as S41 habitats and Local BAP habitat in Lancashire.

11) Native hedgerows recorded across the Proposed Ribble Crossing survey area qualify as S41 habitat. Native hedgerows across the survey areas could also qualify as Important under the Hedgerow Regulations (1997), at the time of writing this report, no hedgerow assessments had been undertaken.

3.2 Schedule 9 invasive plant species

12) Invasive species Himalayan balsam, was noted within the Proposed Ribble Crossing. The location of Himalayan Balsam is illustrated at Figure 9A.5.

3.3 Protected plant species

13) No protected plant species were noted throughout the survey area.

4. References

Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey*, Joint Nature Conservation Committee, Peterborough

Chartered Institute for Ecology and Environmental Management (2017), *Guidelines for Preliminary Ecological Appraisal, CIEEM*

Appendix A. Target Notes Report

Ecology Survey Data Report: Target Notes

1. Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme – Proposed Ribble Crossing	Project Number:	**B27070CT**
Written:	Fleur Wilson *Senior Ecologist.*	Approved:	Val Gateley, *Principal Ecologist*
Report reference:	7478.02.063	Date:	01/03/2020
2. Project Drawings			
G7478.02.104 – Ribble Crossing, Phase 1 Habitat Survey			
3. Ecology Surveys			
Surveyors:	Fleur Wilson		
Survey date(s):	15th/ 16th December 2020		
Survey Method:	Target Notes were recorded following Extended Phase 1 habitat survey methods in line with JNCC and CIEEM Guidelines.		
Weather Conditions:	Variety of weather conditions were encountered during the survey work. None of the conditions were adverse enough to impact negatively on the completion of the survey work.		
Limitations to the survey:	The Phase 1 habitat survey was undertaken outside the optimal survey season of late April to early October. Flora is in suboptimal condition for identification outside this season. However, with the majority of the site comprising habitats of relatively low ecological value, the seasonable constraints are not considered to significant limit the survey results. Additionally, the assessment area was extended slightly after the site visit took place and as such, an additional area to the east of the site that was not walked. The habitats were mapped from aerial imagery and knowledge of the existing habitat in the same field, within the surveyed area. Not walking this small section of the site is not considered to have an impact on the overall assessment of the habitats.		

4. Target Notes

Target Note 1

Improved grassland fields, grazed short by sheep at the time of survey. The sward is dominated by perennial ryegrass *Lolium perenne* with occasional tufts of cock's-foot *Dactylis glomerata* present. Rare occurrences of nutrient/ wet tolerant herb species noted and where the ground is wetter, including soft rush *Juncus effusus.*

Lolium perenne	Perennial Ryegrass	D
Dactylis glomerata	Cock's-foot	O
Urtica dioica	Nettle	O
Bistorta officinalis	Bistort	R
Juncus effusus	Soft Rush	R
Ranunculus repens	Creeping Buttercup	R
Trifolium repens	White Clover	R

Target Note 2

Bricked barn/ farm building with slate roof. The structure has potential to support both roosting bats and barn owl due to the features produced by the build and slight deterioration of the building.

Target Note 3

Outgrown defunct, unmanaged hedge with trees bordering along the stream. The stream is fairly shaded by the overhanding trees, a number of which are dominantly ivy clad Alder trees with some showing signs of decay/ cracks, presenting bat roosting features.

Target Note 4

Stream edge with no distinct aquatic or marginal vegetation but grassy sward along embankment comprising coarse, unmanaged grasses with tall ruderal species. The stream edge habitat is distinctly different from the improved, perennial rye grass dominated sward within the fields though which the stream flows.

Chamaenerion angustifolium	Rosebay Willowherb	F
Dactylis glomerata	Cock's-foot	F
Heracleum sphondylium	Hogweed	F
Holcus lanatus	Yorkshire-fog	F
Lolium perenne	Perennial Ryegrass	F
Rumex obtusifolius	Broad-leaved Dock	F
Arrhenatherum elatius	False Oat-grass	O
Urtica dioica	Nettle	R

The edge of the Ribble River comprises similar sward of rank grassland with tall ruderal species. In addition to the above species, *Jacobaea vulgaris* Common Ragwort (O) and *Ranunculus repens* Creeping Buttercup (O) are also present.

Target Note 5

Outgrown, unmanaged hedge with a small ditch flowing along the southern edge. At the time of survey, the water quality of the ditch was poor and heavily silted with a shallow flow. Reed canary-grass *Phalaris arundinacea* formed dominant patches across the silted stream. With five woody species present within the hedge, it has been categorised as species rich.

Alnus glutinosa	Alder	F
Crataegus monogyna	Hawthorn	F
Hedera helix	Ivy	F
Phalaris arundinacea	Reed Canary-grass	F
Salix species	Willow species	F
Prunus spinosa	Blackthorn	R

Target Note 6

Double hedge with ditch flowing within the middle; Ditch is heavily shaded as a result. At time of survey, the water level of the ditch was low, at around 2cm deep and about 0.5m wide.

Alnus glutinosa	Alder	F
Crataegus monogyna	Hawthorn	F
Rubus fruticosus agg.	Bramble	F
Ilex aquifolium	Holly	O

Prunus spinosa	Blackthorn	O
Quercus robur	English Oak	R

Target Note 7
Species rich hedge with ditch flowing along the base.

Betula pendula	Silver Birch	A
Hedera helix	Ivy	A
Crataegus monogyna	Hawthorn	F
Prunus spinosa	Blackthorn	F
Rubus fruticosus agg.	Bramble	F
Ilex aquifolium	Holly	O
Rosa Canina.	Dog rose	R

Target Note 8
Brown hare noted running across field.

Target Note 9
Thicket of dense blackthorn scrub which has encroached from the outgrown hedge to the south.

Target Note 10

Hedge with dry ditch at base (although damp in northern section).

Crataegus monogyna	Hawthorn	A
Alnus glutinosa	Alder	F
Ilex aquifolium	Holly	O

Target Note 11

Coplow Brook, flowing south into Ribble River. Around 1m wide and fairly shallow. No distinct marginal vegetation along the banks, only thin strips of tall ruderal vegetation.

Target Note 12

Footprints and snuffle holes/ foraging signs were observed within Cross Hill Wood LNR and along the field boundaries south of the River Ribble (just outside the redline boundary). Observations from the local farmer confirmed badger presence within Cross Hill Wood. A partially active outlier sett was noted within the north western corner of the woodland. No hairs, prints or other signs were recorded but the entrances holes (at SD74357 43312 & SD 74360 43316) were of sufficient size and shape to accommodate badger. The topography and steep embankment of the woodland in this area is suitable for sett creation. However with the dense scrub present it was not possible to complete a through survey to confirm the presence of other setts.

Target Note 13

North of the River Ribble, at SD 73604 43764, within the northern facing slope of a mound, three mammal holes were observed. These are likely in use by rabbit but due to the size of the entrance holes a precautionary approached is advised to monitor these further to confirm the mammal utilising the sett and level of activity, if impact will encroach within 30m. No other signs of badger (or other mammals) were observed but the heavy rain was a limitation to the survey and possibly washed away any signs.

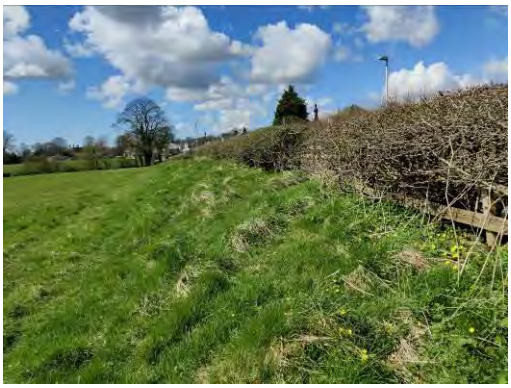
References

Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey*, Joint Nature Conservation Committee, Peterborough

Chartered Institute for Ecology and Environmental Management (2017), *Guidelines for Preliminary Ecological Appraisal*, CIEEM

Appendix B. Hedgerow Survey Report

HARP: Ribble Crossing Ecology Survey Data Report: Hedgerow survey report

1 Project Details			
Project Name:	Haweswater Aqueduct Resilience Programme	Project Number:	80061155
Written:	Eve Loxham, *Ecologist*	Approved:	Alice Helyar, *Principal Ecologist*
Report reference:	TR4 West Bradford Bypass Hedgerow Survey Report V1 HARP Ribble Crossing Hedgerow Survey Report V2 HARP Ribble Crossing Hedgerow Survey Report V3	Date:	V1: 05/05/2021 V2: 21/05/2021 V3: 26/05/2021
2 Project Drawings			
Ribble Crossing Hedgerow Plans		BOW167_HARP_9.5_HEDGEROWS_TR4_RIBBLE_CROSSING	
3 Ecology Surveys			
Surveyors:	Eve Loxham MBiolSci (Hons) Mark Breaks BSc (Hons)		
Survey date:	09/04/2021		
Survey Method:	Hedgerows were assessed in accordance with The Hedgerow Regulations 1997. This report details all hedgerows currently identified in the Ribble Crossing survey area, all of which have been subject to full assessment against the Hedgerow Regulations 1997.		
Weather Conditions:	09/04/2021 – 4/8 Cloud cover, Beaufort F2 wind, dry, 10°C.		
Limitations to the survey:	Hedgerows at the survey boundary were viewed from one elevation due to lack of access to the other side.		
4 Survey Results			
RC.H2			

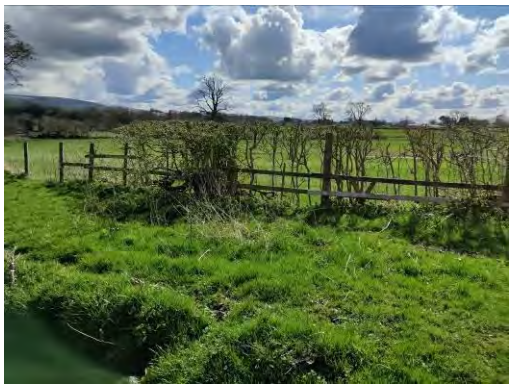
This roadside hedgerow is approximately 266 m in length, on average is 1 m tall and 2 m wide. There are 4 associated gaps accounting for approximately 10% of the length. There is one associated mature tree and no ditch. There is a supporting wall or bank. There are no connections to woodland, ponds or other hedgerows. There is a parallel hedgerow within 15 m. The hedgerow is well established and greater than 30 years in age.

The dominant woody species is blackthorn (*Prunus spinosa*) with additional hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), rose species (*Rosa* sp.), elder (*Sambucus nigra*), elm species (*Ulmus* sp.) and sycamore (*Acer pseudoplatanus*; total seven woody species excluding sycamore). Schedule 2 ground flora species include; lords and ladies (*Arum maculatum*), herb Robert (*Geranium robertianum*), dog's mercury (*Mercurialis perennis*), pignut (*Conopodium majus*), barren strawberry (*Waldsteinia fragarioides*), and wood avens (*Geum urbanum*). Additional ground flora recorded include; lesser celandine (*Ranunculus ficaria*), dandelion (*Taraxacum officinale* agg.), ivy (*Hedera helix*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), common nettle (*Urtica dioica*), cock's foot grass (*Dactylis glomerata*), cleavers (*Galium aparine*), tufted hair grass (*Deschampsia cespitosa*), cow parsley (*Anthriscus sylvestris*), garlic mustard (*Alliaria petiolata*), snowdrops (*Galanthus nivalis*), common hogweed (*Heracleum sphondylium*), crosswort (*Cruciata laevipes*), cuckoo flower (*Cardamine pratensis*), vetch species (*Vicia* sp.), common knapweed (*Centaurea nigra*) and meadowsweet (*Filipendula ulmaria*).

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.

RC.H3



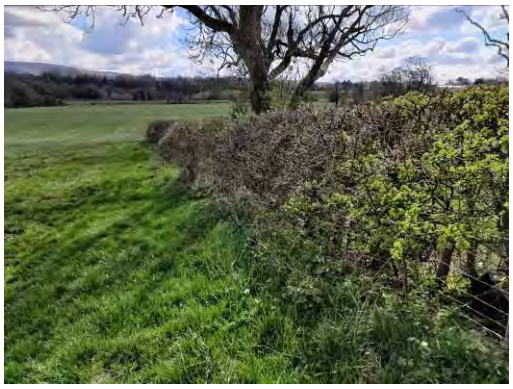
This hedgerow is approximately 118 m in length, on average is 1 m tall and 1 m wide. There are four gaps along the hedgerow which account for approximately 10% of the length. There is one associated mature tree along with a dry ditch on the southern elevation (which extends along less than half the hedgerow length). There is no supporting bank or wall. There are no connections to woodland, ponds or other hedgerows, and there are no parallel hedgerows. The hedgerow is well established and greater than 30 years in age.

The dominant woody species is blackthorn with additional hazel, hawthorn, rose species and elm species (total five woody species). Schedule 2 ground flora species recorded include; lady fern (*Athyrium filix-femina*), primrose (*Primula vulgaris*) and lords and ladies. Additional ground flora species recorded include; stitchwort (*Stellaria* sp.), reed canary grass (*Phalaris arundinacea*), red campion (*Silene dioica*), cleavers, soft rush (*Juncus effusus*), bittercress species (*Cardamine* sp.), Yorkshire fog, tufted hair grass, Himalayan balsam (*Impatiens glandulifera*), common nettle, self-heal (*Prunella vulgaris*), hedge woundwort (*Stachys sylvatica*), broadleaved dock (*Rumex obtusifolius*), lesser celandine, creeping buttercup (*Ranunculus repens*), willowherb species (*Epilobium* sp.), bramble (*Rubus fruticosus agg.*), meadowsweet and foxglove (*Digitalis purpurea*).

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

A disused birds nest (unidentified species) was noted within the hedgerow.

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

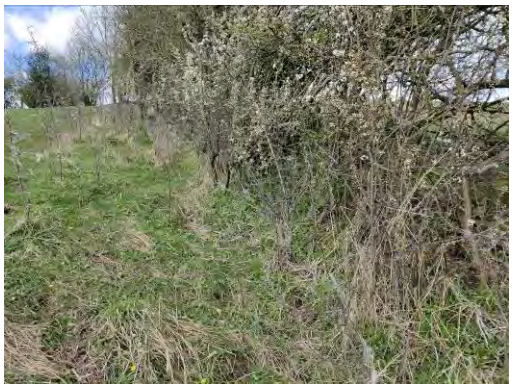
RC.H11	

This hedgerow is approximate 81 m in length, on average is 1 m tall and 1 m wide. There are three gaps accounting for approximately 5% of the hedgerow length. There are four associated mature trees along with a dry ditch on the northern elevation. There is no bank or supporting wall, and there are no connections to ponds, woodland or other hedgerows, nor any parallel hedgerow. The hedgerow is well established and greater than 30 years in age. The hedgerow is well maintained and has previously been laid.

The dominant woody species is hawthorn with additional blackthorn and elder (total three woody species). Schedule 2 ground flora recorded include; lords and ladies, herb Robert, and dog's mercury. Additional ground flora recorded include; red campion, bramble, lesser celandine, burdock (*Arctium lappa*), creeping bent, ivy, cleavers, common nettle, common hogweed, Yorkshire fog, garlic mustard, broadleaved dock, creeping buttercup and cow parsley.

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.

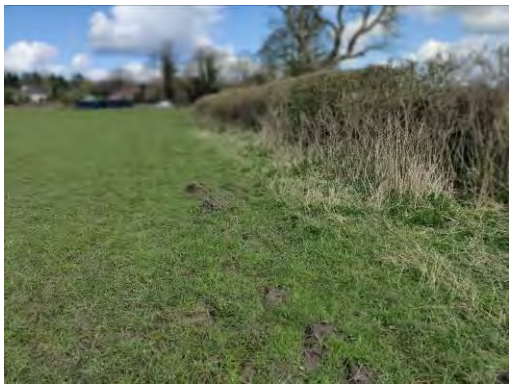
RC.H20	

This hedgerow is approximately 187 m in length, on average is 3.5 m tall and 1.5 m wide. There are three gaps accounting for approximately 5% of the length of the hedgerow. There are six mature trees and a wet ditch is present on the northern elevation. There is a supporting bank or wall. The hedgerow connects to a small area of woodland at the western edge. There are no parallel hedgerows. The hedgerow is well established and greater than 30 years in age.

The dominant woody species is blackthorn with additional willow species (*Salix* sp.), rose species, holly, ash (*Fraxinus excelsior*), and hazel (total six woody species). Schedule 2 ground flora species recorded include; wood anemone (*Anemone nemorosa*), lords and ladies, lady fern, pignut, male fern (*Dryopteris filix-mas*), wood avens, English bluebell (*Hyacinthoides non-scripta*), dog's mercury, hart's tongue fern (*Phyllitis scolopendrium*) and early dog violet (*Viola reichenbachiana*). Additional ground flora recorded include; common nettle, tufted hair grass, cock's foot grass, Himalayan balsam, opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*), bramble, red campion, lesser celandine, creeping thistle (*Cirsium arvense*), cleavers, willowherb species, self-heal and wild thyme (*Thymus polytrichus*).

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

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

RC.H27	

This roadside hedgerow is approximately 38 m in length, on average is 1.5 m tall and 1.5 m wide. There are no gaps, mature trees or ditches associated with the hedgerow. There is a supporting bank or wall. There are no connections to woodlands, ponds or other hedgerows. There are no parallel hedgerows within 15m. The hedgerow is well established and greater than 30 years in age.

The dominant woody species is blackthorn, with additional hazel, hawthorn, ash and elm species (total five woody species). Schedule 2 ground flora species recorded include lords and ladies, lady fern, dog's mercury, moschatel (*Admoxa moschatellina*), ramsons (*Allium ursinum*) and primrose. Additional groundflora species recorded include common nettle, ivy, lesser celandine, creeping buttercup, broadleaved willowherb (*Epilobium montanum*), cleavers, wild daffodil (*Narcissus pseudonarcissus*), Himalayan balsam, hedge woundwort and garlic mustard.

A disused birds nest (unidentified species) was noted within the hedgerow.

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

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

5 Hedgerow Summary

Of the five hedgerows within the survey area, three are classified as Important under ecological criteria in accordance with The Hedgerow Regulations 1997. These include; RC.H2, 20 and 27.

The most frequently recorded dominant woody species is blackthorn which accounts for four hedgerows, followed by hawthorn which accounts for one. Additional woody species recorded include; hazel, ash, elm species, rose species, willow species, holly, elder and sycamore. A number of Schedule 2 ground flora species were recorded during the surveys including; moschatel, ramsons, wood anemone, lords and ladies, lady fern, pignut, male fern, herb Robert, wood avens, English bluebell, dog's mercury, harts tongue fern, barren strawberry, primrose and early dog violet.

English bluebell are afforded protection and listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This plant was noted within the ground flora of RC.H20.

Himalayan balsam, a Schedule 9 listed invasive plant of the Wildlife and Countryside Act 1981 (as amended), was noted within the ground flora of three hedgerows; RC.H3, 20 and 27.

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

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