



THE
ENVIRONMENT
PARTNERSHIP

Haweswater Aqueduct Resilience Programme – Proposed Marl Hill Section

Volume 6

Proposed Ribble Crossing

Technical Appendix 9A.5: Amphibians

June 2021



Water for the North West

Haweswater Aqueduct Resilience Programme

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Appendix A. Great Crested Newt eDNA Survey Report

1. eDNA Appendix


1.1 Introduction




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

1.2 Summary of Findings

- 3) A wider area was surveyed than will be potentially impacted by the proposed works within the Proposed Ribble Crossing Section. The ponds which fall within potential influencing distance (500 m) of the Proposed Ribble Crossing Section which will be considered within the EclA are:
 - Pond 1 – Large U-shaped pond approximately 40 m east
 - Pond 2 – Small ornamental pond approximately 190 m southeast
 - Pond 3 - Dry approximately 270 m north
 - Pond 4 - Dry approximately 170 m northeast
- 4) The locations of these ponds are illustrated at Figure 9A.12.
- 5) Ponds 3 and 4 were dry at the time of the survey and therefore no eDNA sample was taken.
- 6) Ponds 1 and 2 tested negative for great crested newt eDNA.

Appendix A. Great Crested Newt eDNA Survey Report

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:	Ribble Crossing Ecology Survey Data Report – eDNA report	Date:	V1: 10.06.2021
2 Project Drawings			
Ribble Crossing Pond Plan		BOW167_HARP_PONDS_RIBBLE_CROSSING	
3 Ecology Surveys			
Surveyors:	Mark Breaks (Natural England Class I Survey licence 2016-26714-CLS-CLS) and Eve Loxham (Natural England Class I Survey licence 2017-27825-CLS-CLS).		
Survey date(s):	06.05.2021		
Survey Method:	eDNA sampling methods followed Biggs <i>et al.</i> 2015 and samples were sent to Surescreen, a Natural England accredited laboratory for DNA analysis.		
Weather Conditions:	06.05.21 – Slight breeze (1/12 Beaufort scale), cloud changeable ranging from overcast to 3/8 cloud cover, light intermittent rain.		
4 Pond Descriptions			
Pond 2:			
		<p>Large 'U' shaped pond which is fenced off from the surrounding sheep-grazed fields, and surrounded by amenity grassland and woodland providing approximately 70% shade. Woodland species include alder (<i>Alnus glutinosa</i>), hornbeam (<i>Carpinus betulus</i>), willow species (<i>Salix</i> sp.) and cherry species (<i>Prunus</i> sp.). Some gaps in the canopy are present around the pond edges and here the vegetation is dominated by grasses.</p> <p>Emergent vegetation includes flag iris (<i>Iris pseudacorus</i>), bulrush (<i>Typha latifolia</i>), water mint (<i>Mentha aquatica</i>) and willowherb species (<i>Epilobium</i> sp.) and this covers approximately 10% of the pond surface at the edges. Bankside vegetation includes cuckoo flower (<i>Cardamine pratensis</i>), meadowsweet (<i>Filipendula ulmaria</i>), lesser celendine (<i>Ranunculus ficaria</i>), common hogweed (<i>Heracleum sphondylium</i>), Himalayan balsam (<i>Impatiens glandulifera</i>) and lords and ladies (<i>Arum maculatum</i>).</p> <p>The banks are steep on the south-eastern side and more gradual to the north-west.</p> <p>Water fowl have a minor impact. Grey heron (<i>Ardea cinerea</i>) and moorhen (<i>Gallinula chloropus</i>) were observed using the pond. An abundance of tadpoles (not identified to species) were also observed around shallow edges of the pond on the northern side. The water quality appears to be good as there were several invertebrate species identified at the pond edges during sampling including whirligig beetles (Gyrinidae) and pond skaters (Gerridae). Fish presence is possible and the pond likely doesn't dry out at all.</p>	

5 eDNA survey results		
Pond ID	Results	Limitations
Pond 1:  <p>Small ornamental pond close to the entrance of Hanson Cement, set within an area of amenity grassland and close to ornamental tree and shrub planting. The pond is stone lined and has a central rocky island with a working fountain. The base of the pond is visible and the pond is shallow. There is no aquatic vegetation present. Nearby ornamental tree planting shades the pond by approximately 40%. There is the possibility of fish being present and negligible waterfowl impacts. The pond does not dry.</p>		
Pond 3:  <p>Small woodland pond which has been filled with litter and farm waste including machinery and filled bin bags. The small pockets of water present are discoloured to a rusty red and there is no observed aquatic vegetation or aquatic invertebrates. The surrounding woodland includes ash (<i>Fraxinus excelsior</i>), sycamore (<i>Acer pseudoplatanus</i>), willow species and oak species (<i>Quercus</i> sp.). There is a negligible impact from waterfowl and fish. The pond may dry yearly due to being infilled with waste.</p> <p>Pond not sampled due to being unsuitable and filled with litter.</p>		
Pond 4:  <p>Small, circular and dry pond within cattle grazed species-poor semi-improved grassland. The area is cattle poached and there is no observed aquatic vegetation. The pond likely dries out yearly, filling with water rarely and there is poor water quality (no observed invertebrates). There is no shading to the pond.</p> <p>Pond not sampled due to being dry.</p>		
Pond ID	Results	Limitations
Pond 2	Negative	Access limited on the south-eastern edge where the pond embankments were very steep.
Pond 1	Negative	N/A
Pond 3	N/A	Filled in with litter and drying out, not sampled.
Pond 4	N/A	Dry, not sampled.

References

Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Dejean, T., Griffiths, R. A., Foster, J., Wilkinson, J. W., Arnell, A., Brotherton, P., Williams, P. & Dunn, F. (2015). *Using eDNA to develop a national citizen science-based monitoring programme for the great crested newt (Triturus cristatus)*. *Biological Conservation*. **183**, 19-28.