A66 Northern Trans-Pennine Project
TR010062

3.4 Environmental Statement Appendix 6.6 Amphibians

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3.4 ENVIRONMENTAL STATEMENT APPENDIX 6.6 AMPHIBIANS

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6.6 Amphibian Survey Report

6.6.1 Introduction

Project background

6.6.1.1 The A66 Northern Trans-Pennine Project is a programme of works to improve the A66 between the M6 at Penrith and A1 at Scotch Corner.

6.6.1.2 Between the M6 and the A1(M) the existing A66 is approximately 80km in length. Along this length it is intermittently dualled, with approximately 30km of single carriageway, in six separate sections, making the route accident prone and unreliable.

6.6.1.3 The route carries high levels of freight traffic and is an important route for tourism and connectivity to local communities. The variable road standards, together with the lack of available diversionary routes when incidents occur, affects road safety, reliability, resilience and attractiveness of the route. For a full Project description see Chapter 2: The Project (Application Document 3.2).

Scope of the document

6.6.1.4 This report presents desk study data and baseline survey results for amphibians. Baseline surveys were conducted between April and June 2021. It is intended that the information in this report will be used in conjunction with data from other surveys to identify and assess potential implications of the Project in relation to amphibians and inform any mitigation and compensation required. This baseline report can be used to accompany any future planning application and associated Environmental Impact Assessment (EIA) for the Project

Great Crested Newt

6.6.1.5 A detailed desk-based assessment and population surveys for great crested newt (GCN) *Triturus cristatus,* comprising Habitat Suitability Index (HSI), environmental DNA (eDNA) and traditional pond surveys was undertaken at waterbodies within the Order Limits of the Project between September 2020 and June 2021. This information was provided to Natural England as part of an application to enter the Project into a District Level Licencing (DLL) scheme.

6.6.1.6 By demonstrating that a DLL scheme for GCN will be used, GCN can be scoped out of baseline analysis to support a detailed assessment in the Environmental Statement (ES). This is because the DLL approach includes strategic area assessment, the identification of risk zones and strategic opportunity area maps, and a mechanism to ensure adequate compensation is provided.

6.6.1.7 The outcome of this assessment is documented within the Impact Assessment and Conservation Payment Certificate (IACPC, provided in Appendix A: Great Crested Newt Impact Assessment). This identified that the impacts associated with the Project equate to 15.6 compensatory ponds (that will be created within strategic locations) and confirms that, as a minimum, the impact to GCN associated with the

Project is unlikely to be significant. Although the species is scoped out of detailed assessment, measures relevant to GCN are included within section 6.9: Essential mitigation and enhancement measures of Chapter 6: Biodiversity (Application Document 3.2).

6.6.1.8 Consequently, baseline information relating to GCN is reported here in summary only as it is not required to support a detailed assessment of this species in the ES.

6.6.2 Legislation and Policy Framework

Legislation

6.6.2.1 The UK supports four common and widespread species of amphibian which are found throughout suitable habitat types in proximity to breeding ponds. These species are:

- common toad *Bufo bufo*
- common frog *Rana temporaria*
- smooth newt *Lissotriton vulgaris*
- palmate newt *Lissotriton helveticus*

6.6.2.2 These species are protected from sale under the Wildlife and Countryside Act 1981 (as amended) (WCA).

6.6.2.3 GCN and its habitat is fully protected in the UK under the combined measures of the Conservation of Habitats and Species Regulations 2017 (Habitat Regulations) and WCA due to large declines in range and abundance across Europe.

6.6.2.4 Natterjack toad *Epidalea calamita* and northern pool frog *Pelophylax lessonae* also receive strict protection, but these species have a highly restricted distribution in the UK and the Project is beyond their known range.

Natural Environment and Rural Communities Act 2006

6.6.2.5 The UK Biodiversity Action Plan (UKBAP) covering 2011 to 2020 has been superseded by the UK Post-2010 Biodiversity Framework. The framework identifies 65 Priority Habitats and 1150 Priority Species that are in need of protection. This list has been used to define habitats and species of 'Principal Importance' (HoPI and SoPI) in England (the Section 41 list) as required by the Natural Environment and Rural Communities (NERC) Act 2006.

6.6.2.6 Common toad, GCN, natterjack toad and northern pool frog are listed as SoPI under the NERC Act (2006). All planning decisions must be made with regard for the conservation of S41 species and any priority actions associated with them.

National level policy

National policy statement for national networks

6.6.2.7 The primary policy basis for deciding whether or not to grant a Development Consent Order (DCO) is the *National Policy Statement for*

National Networks (NPSNN) (Department for Transport, 2014)[1], which sets out policies to guide how DCO applications will be decided and how the effects of national networks infrastructure should be considered by the relevant decision maker. The policies for biodiversity and ecological conservation include statements that:

"Biodiversity is the variety of life in all its forms and encompasses all species of plants and animals and the complex ecosystems of which they are a part. Government policy for the natural environment is set out in the Natural Environment White Paper (NEWP). The NEWP sets out a vision of moving progressively from net biodiversity loss to net gain, by supporting healthy, well-functioning ecosystems and establishing more coherent ecological networks that are more resilient to current and future pressures…" (NPSNN paragraph 5.20)

6.6.2.8 The *NPSNN* also advises:

"In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment." (NPSNN paragraph 5.26)

6.6.2.9 Table 1: NPSNN sections of relevance to amphibians identifies the *NPSNN* policies relevant to amphibians.

Table 1: NPSNN sections of relevance to amphibians

Relevant *NPSNN* paragraph reference	Requirement of the *NPSNN* (paraphrase)
5.22	Outline any likely significant effects on internationally, nationally and locally designated sites of ecological or geological conservation importance on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity and that the statement considers the full range of potential impacts on ecosystems.
5.23	Demonstrate how the project has taken advantage of opportunities to conserve and enhance biodiversity conservation interests.
5.29	Ensure proposals mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity are acceptable.
5.33	Development proposals potentially provide many opportunities for building in beneficial biodiversity features. Opportunities to maximise beneficial biodiversity features should be considered. Planning obligations can be used where appropriate in order to ensure that such beneficial features are delivered.
5.34 and 5.35	Individual wildlife species receive statutory protection under a range of legislative provisions. Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales. Undertake measures to ensure these species and habitats are protected from adverse

[1] Department for Transport (2014) National Policy Statement for National Networks

Relevant *NPSNN* paragraph reference	Requirement of the *NPSNN* (paraphrase)
	effects. Where appropriate, requirements or planning obligations may be used in order to deliver this protection.
5.36	Include appropriate mitigation measures as an integral part of their proposed development, including identifying where and how these will be secured
5.37	Consider what appropriate requirements should be attached to any consent and/or in any planning obligations entered into in order to ensure that mitigation measures are delivered.
5.38	Take account of what mitigation measures may have been agreed between the applicant and Natural England and/or the Marine Management Organisation (MMO), and whether Natural England and/or or the MMO has granted or refused, or intends to grant or refuse, any relevant licences, including protected species mitigation licences.

National planning policy framework

6.6.2.10 The *National planning policy framework (NPPF)* (Ministry of Housing, Communities & Local Government, 2021)[2] originally published in March 2012 and most recently updated in July 2021, sets out the government's planning policies for England and provides a framework within which locally prepared plans can be produced. The *NPPF* is *"an important and relevant matter to be considered in decision making for NSIP[3]".*

Regional and local level policy

6.6.2.11 Although the *UK Biodiversity Action Plan (BAP)* has been superseded, BAPs are still widely used at county level to support Biodiversity 2020 (Department for Environment Food and Rural Affairs, 2011)[4].

6.6.2.12 GCN, common toad and natterjack toad are listed as priority species on the *Cumbria BAP* (Cumbria Biodiversity Partnership, 2001)[5].

6.6.2.13 GCN is listed as a priority species on the Durham County Council BAP (2012/13) now listed on North East England Nature Partnership website (North East England Nature Partnership, 2013)[6].

6.6.2.14 The following local planning policies are also relevant to this report:

- *Richmondshire BAP* (Richmondshire District Council, 2014a)[7]
- *Eden Local Plan 2014-2032* (Eden District Council, 2014)[8] Policy ENV1 and Policy ENV4

[2] Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework
[3] Nationally Significant Infrastructure Projects (NSIP)
[4] Department for Environment Food and Rural Affairs (2011) Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services.
Department for Environment, Food and Rural Affairs, London.
[5] Cumbria Biodiversity Partnership (2001) The Cumbria Biodiversity Action Plan
[6] North East England Nature Partnership (2013) Biodiversity Priorities
[7] Richmondshire District Council (2014a) Richmondshire Biodiversity Action Plan
[8] Eden District Council (2014) Eden Local Plan 2014 to 2032

- *County Durham Plan Adopted 2020* (Durham County Council, 2020)[9] Policy 26, Policy 40, Policy 41, Policy 42 and Policy 43
- *Richmondshire Local Plan 2012-2028* adopted 2014 (Richmondshire District Council, 2014b)[10] Core Policy CP12

Other relevant policy and guidance

6.6.2.15 In addition to compliance with the NPSNN and NPPF, this report has been written in accordance with professional standards and guidance. The standards and guidance which relate to the assessment are:

- *Guidelines for Ecological Impact Assessment in the UK and Ireland* (Chartered Institute of Ecology and Environmental Management, 2018)[11]
- *DMRB LA 108 Biodiversity (DMRB LA 108)*, Revision 1, March 2020 (Highways England, 2020a)[12]
- *DMRB LD 118 Biodiversity Design (DMRB LD 118)*, Revision 0, March 2020 (Highways England, 2020b)[13]

Desk study

6.6.2.16 The aim of the desktop study was to develop an understanding of the baseline conditions relating to amphibians. The study area comprised the Order Limits plus a 2km buffer. Table 2: Sources of Information summarises the various sources of information used for the desk study and the information that was obtained.

Table 2: Sources of Information

Source	Information obtained
Ordnance Survey mapping and online aerial imagery	Aerial photography published on commonly used websites was studied to place habitats present within the site boundary in the wider context; identify potential ecological receptors of note for amphibians that may not be evident on the ground during the field survey; identify potential barriers to animal movements (such as road networks, built development and major watercourses); and to assess changes to habitats since baseline information was recorded so that an assessment of reliability can be made. This approach can be useful in determining if such receptors are potentially a key part of a wider wildlife corridor or an important feature in an otherwise ecologically poor landscape. As some receptors are not always apparent on aerial photographs, relevant Ordnance Survey mapping (on MAGIC) was also studied to identify any features of note such as ponds, issues and/or drains, and disused railway lines.

[9] Durham Council (2020) County Durham Plan – Adopted 2020
[10] Richmondshire District Council (2014b) Richmondshire Local Plan 2012 - 2028 Core Strategy (Adopted 9 December 2014)
[11] Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine
[12] Highways England (2020a) Design Manual for Roads and Bridges LA 108 Biodiversity, Revision 1, March 2020
[13] Highways England (2020b) Design Manual for Roads and Bridges LD 118 Biodiversity Design, Revision 0, March 2020

Source	Information obtained
Multi-agency Geographic Information Centre (MAGIC[14]), Cumbria Biodiversity Data Centre (CBDC), Environmental Records Information Centre - North East (ERIC) and North and East Yorkshire Ecological Data Centre (NEYEDC)	The location of any statutory and non-statutory designated sites that list amphibians within their conservation objectives or species inventory, and for historical records of amphibians. NB: any records older than 20 years have been omitted from the results unless specified.
Cumbria Amphibian and Reptile Group (CARG)	ARGWEB amphibian records held by the group.

Field survey

6.6.2.17 GCN HSI and eDNA surveys were undertaken on all accessible ponds and waterbodies within 250m of the Order Limits following relevant guidance (Amphibian and Reptile Groups of the United Kingdom, 2010[15] and Biggs *et al*., 2014[16]). Surveys were not undertaken on ponds and waterbodies scoped out as unsuitable for GCN or separated from the Project by major dispersal barriers such as a dual carriageway.

6.6.2.18 Where GCN presence was indicated by eDNA results, population size class assessments were undertaken using at least two traditional survey methods (English Nature, 2001[17]). These surveys were repeated six times on each waterbody.

6.6.2.19 Ponds occurring between 250m and 500m of the Order Limits were subject to further review for survey requirement, based on their likelihood for impacts from the Project using the Natural England GCN Method Statement for European Protected Species Licensing (Natural England, 2020)[18]. Those with red or amber risk were scoped in for survey. Ponds were scoped out for further survey where pond habitat was not evident or it was dry or unsuitable (for example, a slurry pit), or where GCN were assumed likely absent following a negative eDNA result.

6.6.2.20 Initial HSI assessments were completed in September 2020, following which a total of 82 ponds and waterbodies were subject to amphibian surveys. The surveys were undertaken by appropriately experienced ecologists between April and June 2021. Although the surveys focussed on detecting the presence of GCN, all amphibian species were recorded where present.

[14] MAGIC Interactive Mapping Application.
[15] Amphibian and Reptile Groups of the United Kingdom (2010) Great Crested Newt Habitat Suitability Index. ARG UK Advice Note 5.
[16] Biggs et al. (2014) Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust, Oxford.
[17] English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.
[18] Natural England (2020) Method statement template for great crested newt mitigation licence

6.6.3 Assumptions and Limitations

6.6.3.1 Amphibian data obtained from the desk study was dependent upon records submitted for the area of interest. Desk study data is not likely to be exhaustive and is not up to date in most cases. It is therefore possible that amphibians not identified during the data search do occur within the vicinity of the Project.

6.6.3.2 Ecology surveys are limited by a variety of factors which affect the presence of fauna (for example, climatic variation, season, and species behaviour). The time frame in which the survey is implemented provides a snapshot of activity within the survey area and cannot necessarily detect all evidence of use by a species. However, field surveys were undertaken during the optimum survey window and maximising the likelihood of finding amphibians, if present.

6.6.3.3 Surveys of some ponds and waterbodies within the study area were limited by lack of land access or health and safety concerns. For example, there was no safe access to some of the waterbodies located within an extensive area of reedbed on Ministry of Defence (MOD) land. Furthermore, a full suite of traditional survey visits could not be completed on some ponds and waterbodies due to them drying up as the survey season progressed. The use of eDNA in conjunction with traditional survey methods has helped to mitigate this limitation by providing GCN presence/likely absence data sufficient for the DLL assessment.

6.6.4 Results

Routewide

Desk study

6.6.4.1 The desk study returned records of six species of amphibian within the study area:

- common toad
- common frog
- smooth newt
- palmate newt
- GCN
- alpine newt *Ichthyosaura alpestris*, which is listed on WCA Schedule 9.

6.6.4.2 No amphibian records were returned that were located within the Order Limits of any scheme. However, GCN are thought to be under-recorded in Cumbria and survey data indicates that they can be found anywhere in the low-lying areas below approximately 350m elevation (Cumbria Biological Data Network, 2016)[19]. GCN occupy a variety of habitats including fell tarns, farmland and garden ponds, quarry pools and brownfield sites. The four other native amphibian species are also likely

[19] Cumbria Biological Data Network (2016) Great Crested Newt *Triturus cristatus*. Cumbria Biodiversity Evidence Base information. Version 3.

to be found in similar habitats wherever suitable breeding ponds and waterbodies exist, and the desk study records indicate a patchy distribution of amphibian species across the study area of the Project.

6.6.4.3 The alpine newt records are restricted to an industrial area of Penrith approximately 1.7km from the Order Limits of the M6 Junction 40 to Kemplay Bank scheme.

Field surveys

6.6.4.4 Common toad, common frog, smooth newt, palmate newt and GCN presence within 500m of the Order Limits has been confirmed through the field surveys undertaken in 2021. GCN were recorded within the survey area of four schemes:

- Penrith to Temple Sowerby
- Temple Sowerby to Appleby
- Appleby to Brough
- Stephen Bank to Carkin Moor

6.6.4.5 Of the ponds surveyed, GCN were recorded in 14 ponds, common toad in 14 ponds, common frog in 26 ponds, smooth newt in 13 ponds, and palmate newt in one pond.

M6 Junction 40 to Kemplay Bank

Desk study

6.6.4.6 There are records of small numbers of palmate newt, smooth newt and common frog in the Penrith area. There are two alpine newt records at Gilwilly Industrial Estate, which is separated from the scheme by the built-up areas of Penrith.

Field surveys

6.6.4.7 Within the survey area for this scheme, two ponds were surveyed. Both were found to be drying out during surveys and no amphibians were recorded.

Penrith to Temple Sowerby

Desk study

6.6.4.8 A single record of over 50 adult common toad (likely due to aggregation and migration) was returned from Broughton Old Bridge on the River Eamont.. There are records for all native amphibian species within Whinfell Forest (located 600m south of the existing A66) which contains breeding ponds and extensive terrestrial habitat.

Field surveys

6.6.4.9 Of the nine ponds surveyed within the survey area for this scheme, two to the south of the existing A66 were found to support GCN. Both ponds have good adjacent terrestrial habitat for amphibians and some connectivity to further areas of good habitat within Whinfell Forest. Common toad and common frog were also recorded in most of the ponds surveyed.

Temple Sowerby to Appleby

Desk study

6.6.4.10 There are records for all native amphibian species at Acorn Bank County Wildlife Site, and for common toad and common frog at Temple Sowerby SSSI. Both sites are connected to the western end of the scheme by semi-natural habitat.

6.6.4.11 There are records for GCN, smooth newt, common frog and common toad in ponds to the north-west and south-east of British Gypsum, which lies immediately to the north of the Order Limits of the scheme. There are records for GCN, common toad and palmate newt at Colby, 1km south of the Order Limits of this scheme, but the River Eden is likely to act as a barrier to amphibian movement.

Field surveys

6.6.4.12 Twenty-four ponds were subject to amphibian survey. GCN were recorded in five ponds within a cluster on farmland to the south-east of British Gypsum (350m from the Order Limits of this scheme) and one pond at the entrance to the British Gypsum site. Hedgerows and other landscape features provide good connectivity to the scheme. Common toad, common frog and smooth newt were also recorded.

Appleby to Brough

Desk study

6.6.4.13 There are very few amphibian records within 2km of the Order Limits of this scheme, which are mainly historic records for common frog and common toad at the western and eastern ends of the scheme. The many small streams on the hill sides of the Pennines provide connective corridors across this area.

Field surveys

6.6.4.14 Twenty-two ponds were subject to amphibian survey. GCN were confirmed in five ponds, all located on MOD land to the north of the existing A66 and three of which form part of a cluster within an extensive area of wetland habitat. Common toad, common frog and smooth newt were recorded frequently, along with palmate newt in one of the surveyed ponds.

Bowes Bypass

Desk study

6.6.4.15 The only desk study record returned is for GCN in lagoons to the north-west side of Hulands Quarry at the eastern end of this scheme (500m from the Order Limits). Connective habitat to the scheme is provided by the quarry fringes, hedgerows and stone walls.

Field surveys

6.6.4.16 Three ponds were surveyed within the survey area of this scheme, two of which are within the quarry. No amphibians were recorded.

Cross Lanes to Rokeby

Desk study

6.6.4.17 No records were received for any amphibian species within 2km of the Order Limits of this scheme.

Field surveys

6.6.4.18 Eight ponds were subject to amphibian survey. The only species recorded was common frog in one pond to the north-west of the existing A66 Cross Lanes junction (adjacent to the Order Limits of this scheme).

Stephen Bank to Carkin Moor

Desk study

6.6.4.19 There are records for smooth newt and GCN in a pond immediately to the west of the Order Limits of this scheme and connected by good terrestrial habitat. There are also records for common frog and common toad to the north-west of the scheme, and a large population of GCN associated with quarry lagoons at East Layton, approximately 1km to the north of the Order Limits of this scheme.

Field surveys

6.6.4.20 Nine ponds were surveyed within the survey area of this scheme. GCN, smooth newt, common toad and common frog were recorded in a pond at Ravensworth, approximately 500m to the south of the Order Limits of the scheme. Common frog was also recorded in a balancing pond at the eastern end of the scheme, within the Order Limits.

A1(M) Junction 53 Scotch Corner

Desk study

6.6.4.21 There are records for smooth newt from a cluster of ponds located to the north-east of the A1M Junction 53, approximately 800m from the Order Limits.

Field surveys

6.6.4.22 Five ponds were surveyed within the survey area of this scheme. Common frog was recorded in two of them which were located 100m and 175m from the Order Limits.

6.6.5 Future Baseline

6.6.5.1 The ecological baseline conditions described above represent those which exist in the absence of the Project and at the time of survey. As stated in Section 3 of CIEEM's Guidelines for Ecological Impact

Assessment in the UK and Ireland[20], potential changes in baseline conditions also need to be identified in order to assess impacts.

6.6.5.2 Based on the survey data collected and land use at the time of survey, the future baseline in the absence of the Project is unlikely to change significantly by 2040. Subtle changes are expected due to climate change, such as localised movement of amphibians and local population changes, however, the overall habitats and species composition in the study area are expected to be broadly similar to that of the existing baseline. Therefore, the future baseline would remain the same as set out in the existing baseline.

6.6.6 Discussion

6.6.6.1 The desk study and field surveys have confirmed the presence of GCN, smooth newt, palmate newt, common toad and common frog within 500m of the Order Limits of the Project. There are also records of the non-native alpine newt more than 1km from the Order Limits of the Project, at Penrith.

6.6.6.2 The results indicate that native amphibians appear to be widespread throughout the survey area where suitable breeding ponds occur in combination with good terrestrial habitat such as rough grassland, woodland, hedgerows and scrub.

6.6.6.3 Small to medium sized aggregations of toads, frogs and newts were recorded during pond surveys. Large aggregations were not recorded and are likely to be limited to particularly favourable habitat within the wider study area, such as disused quarry workings.

6.6.6.4 The presence of multiple ponds and waterbodies with confirmed amphibian populations within the environs of each of the schemes indicates that individual common frog, common toad, smooth newt, palmate newt or GCN are likely to be encountered within the Order Limits during site clearance and construction activities. These species will readily colonise standing water, including balancing ponds and wetlands, wherever there is connected habitat to existing amphibian populations.

6.6.7 References

JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) UK Post-2010 Biodiversity Framework

Natural Environment and Rural Communities Act 2006

Priority Actions for S41 Species

Department for Transport (2014) National Policy Statement for National Networks,

Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework

[20] Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine

DEFRA (2011) Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services. Department for Environment, Food and Rural Affairs, London

Cumbria Biodiversity Partnership (2001) The Cumbria Biodiversity Action Plan,

North East England Nature Partnership (2013) Biodiversity Priorities

Richmondshire District Council (2014a) Richmondshire Biodiversity Action Plan,

Eden District Council (2014) Eden Local Plan 2014 to 2032

Durham Council (2020) County Durham Plan – Adopted 2020

Richmondshire District Council (2014b) Richmondshire Local Plan 2012 - 2028 Core Strategy (Adopted 9 December 2014)

Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine

Highways England (2020a) Design Manual for Roads and Bridges LA 108 Biodiversity, Revision 1, March 2020

Highways England (2020b) Design Manual for Roads and Bridges LD 118 Biodiversity Design, Revision 0, March 2020

MAGIC Interactive Mapping Application

Amphibian and Reptile Groups of the United Kingdom (2010) Great Crested Newt Habitat Suitability Index. ARG UK Advice Note 5.

Biggs et al. (2014) Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust, Oxford.

English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

Natural England (2020) Method statement template for great crested newt mitigation licence

Cumbria Biological Data Network (2016) Great Crested Newt Triturus cristatus. Cumbria Biodiversity Evidence Base information. Version 3.

A Appendix A: Great Crested Newt Impact Assessment and Conservation Payment Certificate (IACPC)