

Global Centre for Rail Excellence

Phase 1A

2022 Riparian Mammal and Badger
Survey Report

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1 Introduction

Description of project

- 1.1 The Global Centre of Rail Excellence (GCRE) is a rail testing centre project that will be delivered by GCRE Ltd on behalf of the Welsh Government. The GCRE site occupies 475 hectares of land within and surrounding the Nant Helen Surface Mine and Onllwyn Coal Washery (approximate centroid Ordnance Survey Grid Reference (OSGR) SN 82890 10976). It is located within the counties of Powys and Neath Port Talbot.
- 1.2 The first phase of the development, "Phase 1A", is contained within the northern extent of the Onllwyn Coal Washery site and will involve the construction of rolling stock storage sidings, along with supporting 25 kV overhead line infrastructure. The extent of the Phase 1A Site is illustrated on **Figure 1** in **Appendix 1**.

Background to commission

- 1.3 Ove Arup & Partners Ltd (Arup) carried out riparian mammal and badger surveys within the Phase 1A Site in 2019 to inform an assessment of impacts as part of the Environmental Impact Assessment (EIA) process.
- 1.4 BSG Ecology were commissioned by Dalcour Maclaren in April 2022 to update the aging baseline survey data to inform the scope of the ecological protection and habitat management plans for the Site.

Aims of the Survey

- 1.5 The survey work aimed to:
- Record evidence of use of the watercourse along the northern boundary of the Phase 1A Site by otter *Lutra lutra* and water vole *Arvicola amphibius*.
 - Record evidence of foraging or commuting badger, or the presence of badger *Meles meles* setts within 50 m of the Phase 1A Site.

2 Methods

Field survey

- 2.1 The otter and water vole survey area included a watercourse / ditch which runs along the northern boundary of the Site, plus all watercourses / suitable habitats within a 100 m buffer of it.
- 2.2 The badger survey area included all suitable habitats within a 50 m buffer of the Site boundary.
- 2.3 The survey areas and watercourses are shown on **Figure 1**.

Otter survey

- 2.4 The otter surveys were completed by Joanne Conway, Becky Gibbs and James Garside in June and August 2022. The survey was undertaken in accordance with industry standard guidance (Chanin, 2003), and involved searching for evidence of otter along the watercourses, their margins and other suitable habitat. Such evidence may include spraints (droppings), footprints, runs (paths worn through vegetation adjacent to the water), couches (areas used by otters to rest and feed), slides (areas of steep bank showing signs of regular use by otters to access the water) and holts (burrows).
- 2.5 Otters often use conspicuous features as sprainting sites (Lampa *et al.*, 2015). Therefore, particular attention was paid to prominent bankside or in-stream features such as tree trunks, branches, rocks, areas of bare ground, culverts and inflowing ditches or pipes.

Water vole survey

- 2.6 The water vole survey was conducted during the same visits as the otter survey, taking into account industry standard guidance (Dean *et al.* 2016). Water margins and other suitable habitats were searched for evidence of water vole, including entrances to burrows, droppings, latrine sites, footprints, runs and feeding stations. The habitats present were also assessed for their suitability to support the species (being classed as suitable or not suitable based on characteristics of the watercourse shoreline and vegetation cover).

Badger survey

- 2.7 A survey for signs of badger was completed during the otter and water vole survey visit in June 2022.
- 2.8 During the badger survey, a 50 m perimeter around the Site boundary was searched for evidence of badger activity such as sett entrances, footprints, latrines, dung pits, snuffle holes, hairs and runs with evidence of use by badgers. Particular attention was paid to the hedgerows, ditches, woodland parcels and margins/ fence lines within the search areas.
- 2.9 The primary aim of the survey was to identify the presence of badger setts, as defined in **Table 1** below (informed by Neal and Cheeseman, 1996; Harris *et al.*, 1994, Harris, Creswell & Jeffries, 1989).

Table 1: Badger Settle Definitions

Sett Type	Definition
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances. Normally the breeding sett, and in continuous use.
Annexe	Normally less than 150 m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active. Usually connected to the main sett by one or more obvious well-worn paths.
Subsidiary	Usually at least 50 m from main sett. Often have only a few holes. Do not have an obvious path connecting with another sett and are not continuously active.
Outlier	Often one-two holes. These often have little spoil outside the holes, have no obvious path connecting them with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or rabbits.

Survey details

- 2.10 The details of the surveys, including dates, times and weather conditions are detailed in **Table 1** below.

Table 1: Mammal survey dates, times, and weather conditions

Date	Time of survey	Survey completed	Surveyor	Weather conditions
16/06/2022	10:41 – 15:00	Otter, water vole and badger survey	Joanne Conway and Becky Gibbs	16-20°C, sunny, dry
08/08/2022	10:00 – 13:30	Otter and water vole survey	Joanne Conway and James Garside	20-26°C, sunny, dry

Limitations to methods

- 2.11 Three sections of watercourse were inaccessible or had limited access during the survey due to lack of permissions and safety reasons. One section (approximately 130 m in length) was fenced off, one section (approximately 258 m in length) was fenced off and within a different land holding, and one section (approximately 430 m in length) had limited access due to dense vegetation and steep banks preventing safe access. These areas are displayed on **Figure 1**.
- 2.12 All of the inaccessible / limited access sections were a part of a larger network / stretch of watercourse, which was otherwise accessible and successfully surveyed. Otters and water vole are both mobile species: otters can have home ranges extending over tens of kilometres (Chanin, 2003) and water voles have home ranges up to 300 m (PTES, 2019). Therefore, if otter or water vole were present in either of the inaccessible sections, it is likely that evidence of the species would also be present in the adjacent sections of surveyed. This is therefore not considered a limitation to the work.

Personnel

- 2.13 The team for this project included the following members of staff:
- 2.14 Joanne Conway PG Cert, BSc (Hons) has worked in Ecological Consultancy since 2017. She has experience in numerous ecological assessments including otter and water vole surveys for small-

and large-scale projects. Joanne co-ordinated and completed the survey work and is the author of this report.

- 2.15 Becky Gibbs BSc (Hons) has worked as an ecologist since 2020. Becky has experience undertaking otter survey and has previously worked alongside Cardiff University Otter Project. Becky was involved in carrying out the field surveys.
- 2.16 James Garside BSc (Hons) has worked as an ecologist since 2016. James has experience undertaking otter survey and was involved in carrying out the otter and water vole surveys for this project.
- 2.17 Gareth Lang MSc, BSc (Hons) ACIEEM has worked in Ecological Consultancy since 2013. Gareth has co-ordinated programmes of protected species survey and monitoring for development projects throughout the UK. Gareth planned the survey work and completed the technical review of this report.

3 Results

- 3.1 Full survey results are detailed in **Appendix 1**. A summary of the key results is provided below, and the location of otter field signs recorded during the surveys are shown on **Figure 1**. Photographs of field signs are provided in Section 7.

Otter

- 3.2 Multiple probable otter spraints and feeding remains (fragments of fish bones and scales) were recorded in one area of the watercourse during the survey in August 2022 (**Photographs 1 - 2**). This area of watercourse was open, deeper than other areas of the watercourse and slow flowing with large rocks within the channel. Eight probable otter runs / slides were also recorded in the area (**Photographs 3 - 4**).
- 3.3 No other evidence of otters (footprints, lay-ups, holts or couches) was recorded during the survey.
- 3.4 The locations of otter evidence are illustrated on **Figure 1**.

Water vole

- 3.5 No evidence of water vole was recorded during the surveys.

Badger

- 3.6 No evidence of badger activity was recorded during the survey.

4 Conclusions and Recommendations

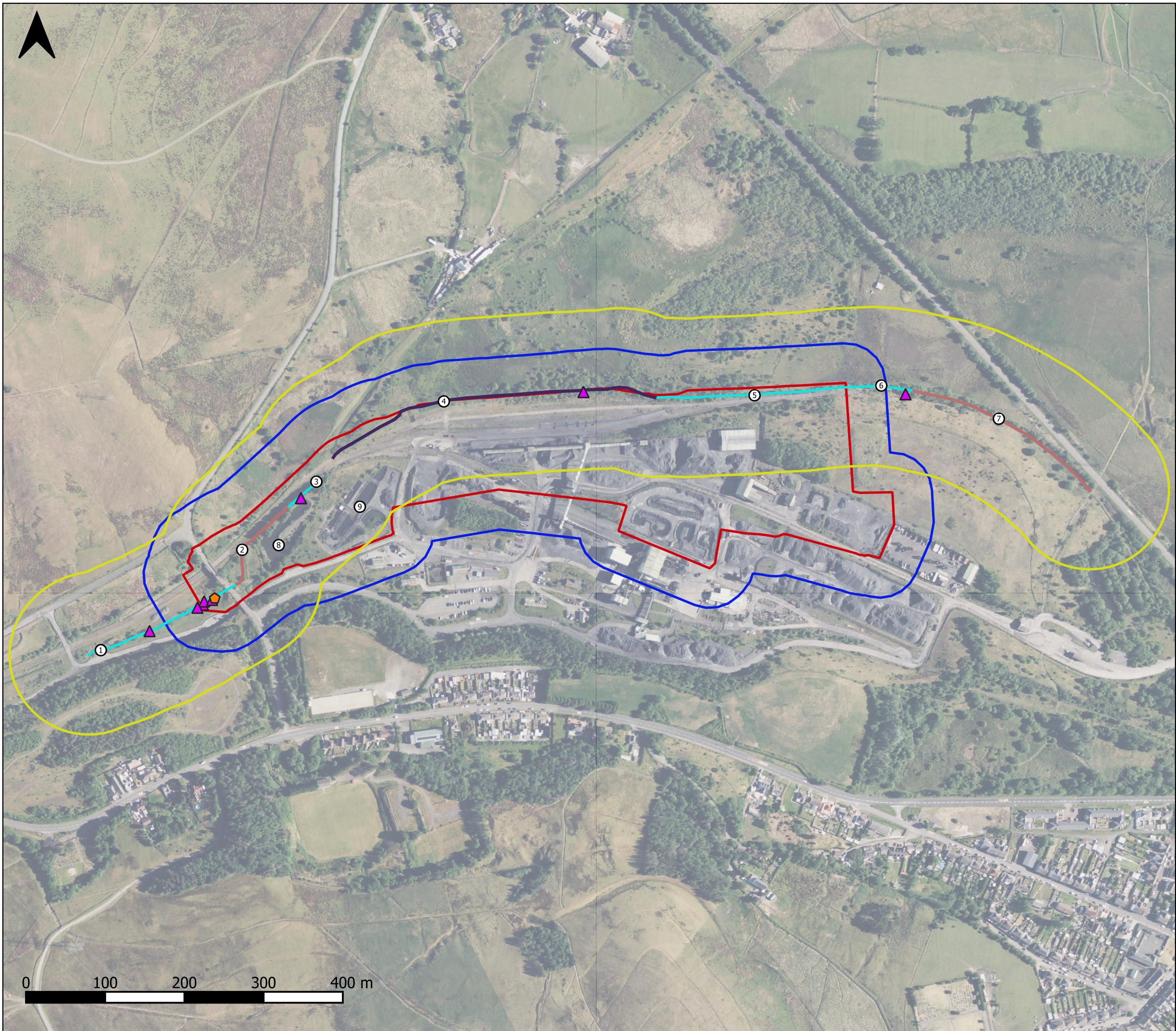
- 4.1 The results of the surveys indicate a presence of otter within the Site. The survey work completed in 2019 did not record evidence of otter within the Phase 1A Site, but identified otter spraints at Seven Sisters, approximately 2.6 km south-west of the Site.
- 4.2 Given that probable evidence of otter was only recorded on site during the second survey in August 2022, it is considered that whilst otters may be present on Site, it is likely that the level of use is low.
- 4.3 It is recommended that any excavations are backfilled or ramped overnight to avoid entrapment of animals, and that potential for movement across the Site is not restricted. These measures should be considered in construction working methods and included in the Construction Environmental Management Plan (CEMP) for the Site.
- 4.4 Water vole and badger are likely to be absent from the Phase 1A Site. No evidence of presence was found for either species during the 2019 surveys or during the updated surveys in 2022. Areas of habitat suitable to support badger could not be accessed during the survey due to land access restrictions and, given the mobile nature of the species, it is recommended that additional badger checks are completed as construction work progresses to identify any new setts. This will allow appropriate mitigation to be designed and implemented as required. Given the mobile nature of badger, it is recommended that measures to prevent entrapment of animals during construction are set out in the CEMP and related construction phase ecological protection documents.

5 References

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6 Figures

(overleaf)



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 - Watercourse
 - Limited access
 - No Access
 - Otter and water vole survey area
 - Badger survey area
 - Target notes
 - Mammal run
 - Otter spraints

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PROJECT TITLE
Global Centre for Rail Excellence
Mammal Survey Report

DRAWING TITLE
Figure 1: Mammal survey results

DATE: 14/08/2022
DRAWN: JC

CHECKED: GL
APPROVED: GL

SCALE: 1:4,600
VERSION: 1.0

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All dimensions are to be checked on site.
Area measurements for indicative purposes only.

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Sources: BSG Ecology survey data

7 Photographs

Photograph 1: Otter spraint (likely fresh but dried out due to heat).



Photograph 2: Otter spraint and feeding remains.



Photograph 3: Mammal run



Photograph 4: Mammal run



Appendix 1: Watercourse / waterbody details

ID	Notes	Suitability for otter	Suitability for water vole	Presence confirmed?	Photographs
1	Shallow and slow flowing with approximately 1.5 m wide channel. Dry at the western extend but flowing to the east. Densely vegetated with high banks in places. The eastern end forms a 4 m wide pool with rocky substrate and some large rocks. Multiple mammal runs and probable otter spraints were recorded in this area (see Photographs in Section 7 of this report).	Yes	Sub-optimal	Yes – likely otter signs.	
2	No access – fenced off.	-	-	-	-

ID	Notes	Suitability for otter	Suitability for water vole	Presence confirmed?	Photographs
3	Wooded stream with dense bankside vegetation, shallow banks and some bare patches of bank. The channel is approximately 2.5 m wide with slow flow.	Yes	Sub-optimal	No mammal present but run	
4	Limited access due to dense vegetation and steep banks. The watercourse was accessed where possible / safe to do so. Water	Sub-optimal	Sub-optimal	No	

ID	Notes	Suitability for otter	Suitability for water vole	Presence confirmed?	Photographs
5	Channel within woodland, choked with vegetation and mostly dry. Very shallow banks.	No	No	No	

ID	Notes	Suitability for otter	Suitability for water vole	Presence confirmed?	Photographs
6	Channel with no discernible banks, wet ground but choked with vegetation. Dry in places.	No	No	No mammal present but run	
7	No access – fenced off / separate land-holding.	-	-	-	-
8	U-shaped waterbody, polluted with coal dust. Most of the banksides are modified with concrete but the northern bank appears to be natural and vegetated. Drained regularly.	Sub-optimal	Sub-optimal	No	

ID	Notes	Suitability for otter	Suitability for water vole	Presence confirmed?	Photographs
9	Waterbodies formed from coal heaps. Very little vegetation. Water heavily polluted.	No	No	No	

Appendix 2: Summaries of Relevant Legislation

This section briefly summarises the legislation and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

European protected species (Animals)

- 7.1 The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.
- 7.2 “European protected species” (EPS) of animal are those which are shown on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:
 - a. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
 - b. Possess or control any live or dead specimens or any part of, or anything derived from a these species
 - c. deliberately disturb wild animals of any such species
 - d. deliberately take or destroy the eggs of such an animal, or
 - e. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place
- 7.3 For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—
 - a. to impair their ability—
 - i. to survive, to breed or reproduce, or to rear or nurture their young, or
 - ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - b. to affect significantly the local distribution or abundance of the species to which they belong.
- 7.4 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works and by Natural Resources Wales in Wales. In accordance with the requirements of the Regulations (2017, as amended), a licence can only be issued where the following requirements are satisfied:
 - a. The proposal is necessary ‘to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’
 - b. ‘There is no satisfactory alternative’
 - c. The proposals ‘will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Definition of breeding sites and resting places

- 7.5 Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of

various Articles of the EC Habitats Directive.¹ Section II.3.4.b) provides definitions and examples of both breeding and resting places at paragraphs 57 and 59 respectively. This guidance states that 'The provision in Article 12(1)(d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.' Further the guidance states: 'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Badger

- 7.6 Badger is protected under the Protection of Badgers Act 1992. It is not permitted to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A badger sett is defined in the legislation as "a structure or place, which displays signs indicating current use by a badger".
- 7.7 ODPM Circular 06/2005 provides further guidance on statutory obligations towards badger within the planning system. Of particular note is paragraph 124, which states that "The likelihood of disturbing a badger sett, or adversely affecting badgers' foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations, are capable of being material considerations in planning decisions."
- 7.8 Natural England provides Standing Advice, which is capable of being a material consideration in planning decisions. Natural England recommends mitigation to avoid impacts on badger setts, which includes maintaining or creating new foraging areas and maintaining or creating access (commuting routes) between setts and foraging/watering areas.

Water vole

- 7.9 Water vole is protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to kill, injure or take any water vole, damage, destroy or obstruct access to any place of shelter or protection that the animals are using, or disturb voles while they are using such a place. Water vole is listed as a Species of Principal Importance under the provisions of the NERC Act 2006 in England and under the provisions of the Environment (Wales) Act 2016.

¹ Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.