Document 5.28.1

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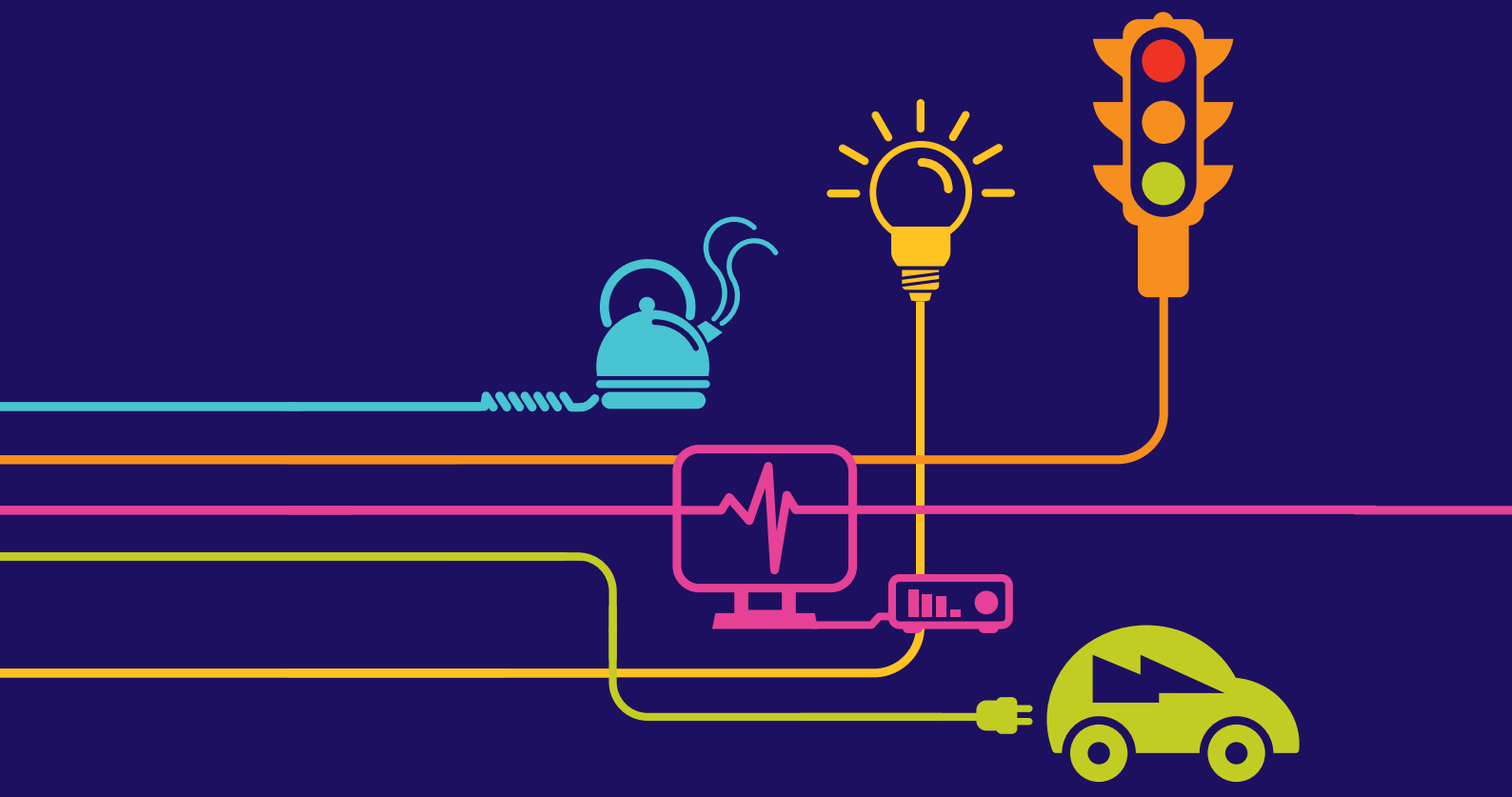
# Environmental Statement
# Ecology Survey Update Report

## Hinkley Point C Connection Project

*Regulation 5(2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009*



Application Reference EN020001

September 2014

nationalgrid

**Hinkley Point C Connection Project**

# ENVIRONMENTAL STATEMENT

## OCTOBER 2014

### VOLUME 5.28.1 ECOLOGY SURVEY UPDATE REPORT

| Document Control | | | |
|---|---|---|---|
| **Document Properties** | | | |
| **Organisation** | | **National Grid** | |
| **Author** | | **TEP** | |
| **Approved By** | | **Francis Hesketh** | |
| **Title** | | **Environmental Statement, Ecology Survey Update Report** | |
| **Document Reference** | | **Volume 5.28.1** | |
| | | | |
| **Date** | **Version** | **Status** | **Description/Changes** |
| 01/10/2014 | A | Live | Final Submission to PINS |

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# 1 INTRODUCTION

## 1.1 Background

1.1.1 National Grid Electricity Transmission plc (National Grid) has submitted an application under the Planning Act 2008 to seek powers to construct, operate and maintain a new 400,000 volt (400kV) connection between Bridgwater, Somerset and Seabank Substation, north of Avonmouth, together with various associated development and other works ('the Proposed Development'). The application was submitted to the Planning Inspectorate (PINS) on the 28 May 2014. PINS confirmed that the application has been accepted for examination on 17 June 2014 (reference number EN020001).

1.1.2 Under the terms of its transmission licence, National Grid is obliged to make an offer of connection in response to each valid application made. In September 2007, National Grid received an application from EDF Energy for the connection of a proposed new nuclear power station at Hinkley Point, Somerset (Hinkley Point C Power Station) to the high voltage electricity transmission system. This connection, as well as others in the South West and South Wales, triggered the need for new transmission capacity in the region.

1.1.3 That part of the Proposed Development that comprises an electric line above ground within section 16 of the Planning Act 2008 is a Nationally Significant Infrastructure Project (NSIP) for the purposes of that Act. Under Section 31 of the Planning Act 2008, development consent is required for development to the extent that it is or forms part of an NSIP. Development consent is granted by the making of a Development Consent Order (DCO) for which application may be made under section 37 of the Planning Act 2008.

1.1.4 An Environmental Statement (ES) was submitted as part of the DCO application (the submitted ES). The submitted ES was prepared in accordance with the Planning Act 2008, The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (SI 2009/2263) ('the 2009 Regulations') and The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009. The submitted ES comprises **Volumes 5.1** to **5.27** of the DCO application submission.

1.1.5 A number of further ecological studies have been undertaken since the submission of the DCO application. These further 2014 surveys cover geographic areas not previously surveyed due to site access restrictions and survey timing constraints. Reference to this outstanding information was made within the submitted ES where the intention was stated to provide an update to address them.

1.1.6 The outstanding baseline information has been requested by PINS in s51 Advice dated 19 June 2014. The s51 Advice noted that some ecology surveys were still in progress for limited locations within the Order Limits of the Proposed Development and confirmed the findings of these would be required during the early stages of the examination period.

## 1.2 Purpose of Document

1.2.1 In response to the s51 Advice, this document presents the additional survey data from 2014, to augment the 2013 results already published in the Biodiversity and Nature Conservation chapter of the Environmental Statement (**Volume 5.8.1** of the

submitted ES). For convenience of cross-referencing, this document follows the same sequence as the submitted ES, but as is evident from the survey findings, there is no material change to the assessments and conclusions presented in the submitted ES.

1.2.2 This document also considers whether there are any changes to the assessment described in the Applicant's Report to Support Habitats Regulations Assessment (**Volume 5.20.1** of the submitted ES) as a result of the additional survey data from 2014.

1.2.3 This document should thus be read in conjunction with the submitted Biodiversity and Nature Conservation chapter of the Environmental Statement (**Volume 5.8.1**) and the submitted Applicant's Report to Support Habitats Regulations Assessment (**Volume 5.20.1**).

## 1.3 Ecology Survey Update Report Structure

1.3.1 As described above, this document follows the section headings used in **Volume 5.8.1** of the submitted ES. This document also reviews the implications of the additional ecology survey data for the submitted Applicant's Report to Support Habitats Regulations Assessment (**Volume 5.20.1**).

**Appendices**

1.3.2 **Volume 5.28.2** presents the 2014 survey updates to the submitted appendices (**Volume 5.8.2**) and should be read in conjunction with the submitted appendices. **Table 1.1** below identifies the relevant survey within the submitted ES and the location of the corresponding 2014 survey update:

Table 1.1 2014 Survey Update Appendices

| Submitted ES Appendix Location and Name | Corresponding 2014 Survey Update |
|---|---|
| **Volume 5.8.2.4, Appendix 8F**- Bird Surveys | **Volume 5.28.2, Appendix 28A**- Bird Surveys 2014 Update |
| **Volume 5.8.2.4, Appendix 8H**- Bat Surveys | **Volume 5.28.2, Appendix 28B**- Bat Surveys 2014 Update |
| **Volume 5.8.2.4, Appendix 8J**- Water Vole and Otter Surveys | **Volume 5.28.2, Appendix 28C**- Water Vole and Otter Survey 2014 Update |
| **Volume 5.8.2.5, Appendix 8K**- **CONFIDENTIAL** Badger Surveys | **Volume 5.28.2, Appendix 28D**- **CONFIDENTIAL** Badger Survey 2014 Update |
| **Volume 5.8.2.5, Appendix 8L**- Amphibian Survey | **Volume 5.28.2, Appendix 28E**- Amphibian Survey 2014 Update |

**Figures**

1.3.3 **Volume 5.28.3** presents the 2014 survey updates to the submitted figures (**Volume 5.8.3**) and should be read in conjunction with the submitted figures. To aid understanding, two sets of figures have been produced:

- The figures in **Volume 5.28.3.1** present an update of those figures submitted with the ES, providing a complete record of all data. These figures are labelled according to the corresponding figure in the submitted ES and with the suffix 'Issue B'. These represent a revision to the submitted figures.

- The figures in **Volume 5.28.3.2** present only the post DCO submission 2014 survey data and are new figures and are labelled according to this volume (Volume 5.28) and with the suffix 'Issue A'.

# 2 POLICY AND LEGISLATION

## 2.1 Policy and Legislation Update

2.1.1 A review of changes to relevant policy and legislation since the submission of the ES has been undertaken to ensure the 2014 survey update is produced with reference to the latest guidance.

2.1.2 In June 2014, Natural England launched the 'SSSI Impact Risk Zones' GIS tool to help local authorities identify where potential adverse effects on SSSI may arise as a result of certain types of development. This provides a useful guide as to the sensitivities (e.g. wetland ecology) and locally appropriate opportunities (e.g. provision of various forms of SUDS) for development. Throughout the project, potential effects on SSSIs have been identified and addressed in consultation with NE and local authorities. The Impact Risk Zones that interact with the Proposed Development have been reviewed and the scoping decisions made in the submitted ES in relation to potential impacts on SSSIs remain valid.

2.1.3 There are no other changes to policy and legislation to that presented in the submitted ES that are relevant to the 2014 survey update.

# 3 METHOD

## 3.1 Overview

### Assessment method

3.1.1 The method of assessment of effects on ecological receptors has been undertaken in accordance with the approach presented in the submitted ES.

### Field survey method

3.1.2 During 2014, update ecology surveys were undertaken at locations where access had not been granted during the 2013 survey season or where the timing of decisions to refine development proposals came after the relevant 2013 survey season.

3.1.3 A Phase 1 habitat survey had been undertaken for all land within the Order Limits prior to DCO submission and the findings were presented in the submitted ES and were included in the assessment of predicted effects on habitats and species. Only selected receptors required update surveys in 2014 as outlined below:

- Birds – breeding bird surveys

- Bats – tree roost surveys
- Water vole
- Otter
- Badger
- Amphibians

3.1.4 The following paragraphs outline the method and scope of the 2014 update surveys.

## 3.2 Birds

3.2.1 During statutory consultation (s42/47/48) and the subsequent localised consultation, a number of suggestions were received from consultees and members of the community regarding the route of the 400kV overhead line and the position of the pylons in the areas of Southwick and Mark Causeway, see **Volume 5.2.3.5, Figure 2.17**.

3.2.2 These requests for changes to the route of the overhead line and positioning of the pylons were considered and appraised by National Grid and resulted in a new alignment at this location which is presented in the submitted DCO application.

3.2.3 Due to the timing of the alignment decision, a Phase 1 habitat survey and wintering bird survey along this section of the proposals (approximately 1.7km of the proposed 400kV overhead line alignment) were undertaken prior to submission of the DCO application. However, due to survey timing constraints (two survey visits required during spring/summer) it was not possible to complete a breeding bird survey prior to submission.

3.2.4 The 2014 survey updates were undertaken in June and July. The survey area covered the 400kV overhead line alignment from the River Brue in the south to Mark in the north. The 2014 survey update is contained within **Appendix 28A** (**Volume 5.28.2**).

3.2.5 The method used was the same as that used for the 2012 and 2013 breeding bird surveys. This method is detailed within **Volume 5.8.2, Appendix 8F Section 2.10** of the submitted ES. As with the 2012 and 2013 breeding bird surveys, when estimating the number of territories associated with each farmland bird species a precautionary approach was taken. This is outlined in **Appendix 8F** (**Volume 5.8.2**) of the submitted ES.

## 3.3 Bats

3.3.1 The bat roost surveys in 2012/2013 covered the location of the Proposed Development, at the time of survey, and a 100m buffer. Since the survey was undertaken and prior to the submission of the ES, various small alterations to the Proposed Development occurred (including changes to avoid bat roosts identified in 2013). The arboricultural assessment of trees likely to be affected by the Proposed Development identified a number of trees and tree groups still requiring survey.

3.3.2 Bat roost surveys of these additional trees (including the 400kV overhead line alignment at Mark and various locations where access in 2013 had not been possible) have been undertaken as part of the 2014 survey update. The 2014 survey update is contained within **Appendix 28B** (**Volume 5.28.2**).

3.3.3 Six buildings at Ashtrees Farm, west of Mark, are scheduled for demolition as part of the Proposed Development. Although it was possible to undertake the daytime inspection of these six buildings prior to the completion of the submitted ES, it was not possible to complete emergence/re-entry surveys. The submitted ES used data obtained during the internal and external inspections of the buildings, together with bat activity transect data, to assess the likely impacts on bats.

3.3.4 The stage 1 and stage 2 bat surveys of trees commenced in May 2014, and stage 3 surveys (emergence and/or re-entry surveys of trees and buildings) were undertaken in June, July and August 2014.

3.3.5 The method used for the bat trees surveys was the same as that used in 2012 and 2013. This method is detailed within **Volume 5.8.2, Appendix 8H. Section 4.2** of the submitted ES.

3.3.6 The emergence surveys on the buildings followed the same general approach as the emergence surveys on trees. Three survey visits were undertaken, commencing half an hour before sunset and continuing for at least 2 hours. Further details are provided in **Appendix 28B Bat Surveys 2014 Update** (**Volume 5.28.2**).

## 3.4 Water Vole

3.4.1 The scope of the 2012-2013 water vole surveys included all watercourses with potential to be impacted by the proposed working areas. National Grid finalised the detailed scheme design in early 2014. As a result of design changes, ditches that were not included within the 2012-2013 survey (including locations where access in 2013 season had not been possible) were subsequently assessed as part of the 2014 survey update. The 2014 survey update is contained within **Appendix 28C** (**Volume 5.28.2**).This included a survey along the alternative route at Mark, which for the purpose of the ES, had been surveyed outside the core water vole survey season.

3.4.2 Surveys were undertaken in late March. Although surveys were complete prior to the DCO being submitted, the review and printing process meant the results could not be incorporated into the DCO documents. The survey method was the same as that used for the 2012 and 2013 water vole surveys. This method is detailed within **Volume 5.8.2, Appendix 8J Section 3.0** of the submitted ES.

## 3.5 Otter

3.5.1 The scope of the 2012-2013 otter surveys included all watercourses with potential to be impacted by the proposed working areas. National Grid finalised the detailed scheme design in early 2014. Following these design changes, ditches that were previously not included within the survey (including locations where access in 2013 season had not been possible) were subsequently assessed as part of the 2014 survey update. The 2014 survey update is contained within **Appendix 28C** (**Volume 5.28.2**).

3.5.2 Surveys were undertaken in late March 2014. Although surveys were complete prior to the DCO being submitted, the review and printing process meant the results could not be incorporated into the DCO documents. The survey method was the same as that used for the 2012 and 2013 otter surveys. This method is detailed within **Volume 5.8.2, Appendix 8J Section 4.0** of the submitted ES.

### 3.6 Badger

3.6.1 During 2014 additional badger surveys were undertaken at locations where access had not been previously granted or where surveyors engaged on other surveys had identified potential badger setts outside but in close proximity to the Order Limits.

3.6.2 Accordingly, update surveys were undertaken in July 2014. The 2014 survey update is contained within **Appendix 28D** (**Volume 5.28.2**). The survey method was the same as that used for the 2012 and 2013 badger surveys. This method is detailed within **Volume 5.8.2, Appendix 8K Section 3.0** of the submitted ES.

### 3.7 Amphibians

3.7.1 The 2013 amphibian surveys covered the Proposed Development and a 250m buffer from this, as it stood at the beginning of the survey season (March 2013). Since then, various small alterations to the proposals have occurred and National Grid finalised the detailed scheme design in early 2014.

3.7.2 Ponds and ditches that were not included within the 2013 survey were subsequently assessed as part of the 2014 survey update. The 2014 survey update is contained within **Appendix 28E** (**Volume 5.28.2**). This included a survey along the alternative route at Mark and at other locations where access in 2013 had not been possible or where survey conditions in 2013 had constrained survey effectiveness.

3.7.3 Surveys were undertaken during March to June 2014. The survey method was the same as that used for the 2013 amphibian surveys. This method is detailed within **Volume 5.8.2, Appendix 8L Section 3.0** of the submitted ES.

## 4 BASELINE ENVIRONMENT

### 4.1 Birds

2014 Results

4.1.1 A total of 39 bird species were recorded during the 2014 breeding bird update survey on the final submitted 400kV overhead alignment at Mark. This included two species listed on Schedule 1 of the *Wildlife and Countryside Act, 1981 (as amended)*, seven Section 41 species, five red listed Birds of Conservation Concern (BoCC) species and ten amber listed BoCC species.

4.1.2 The protected or BoCC species recorded during the 2014 breeding bird update survey are listed below. Raptors, waders and wildfowl are also included within the table even if they have no conservation status, due to their susceptibility to collision with overhead lines.

- dunnock
- hobby
- house martin
- house sparrow
- kingfisher
- lesser black-backed gull
- linnet
- mallard
- mute swan
- oyster catcher
- reed bunting
- skylark
- song thrush
- sparrowhawk
- starling
- swallow
- whitethroat
- willow warbler

4.1.3 Full details of the number of birds recorded on each visit, their conservation status and estimated number of territories and likely use of the habitats along the alignment is provided in **Appendix 28A** Bird Surveys 2014 Update (**Volume 5.28.2**). The locations of all bird species recorded during the 2014 breeding bird surveys are illustrated at **Figure 28.1** (**Volume 28.3.2**).

4.1.4 The 39 species recorded along the 1.7km section equates to no more than 'Moderately High' on both the Relative Species Diversity Scale (32-41 species) and Conservation Diversity Scale (16-20 BoCC species or 2 Schedule 1 species). The diversity is illustrated at **Figures 28.2 and 28.3** (**Volume 28.3.2**).

Comparison with submitted ES

4.1.5 The submitted ES used habitat data (obtained during habitat surveys and wintering bird surveys) together with the results of breeding bird surveys from similar, neighbouring habitats to assess likely impacts on birds along this section of the route. The habitats along the 2012 400kV overhead alignment and the 2014 final submitted 400kV overhead alignments are very similar in some cases encompassing the same field. At its furthest point the final submitted alignment is 250m east of the 2012 breeding bird survey corridor.

4.1.6 The species composition recorded during the 2014 survey was similar to that recorded along the adjacent sections of the 2012 survey area (submitted ES **Volume 5.8.1, Table 8.14** and **Volume 5.8.3, Figure 8.17)**. The only BoCC or protected bird species recorded during 2014 that were not recorded during the 2012 breeding bird survey (along the parallel survey section) were kingfisher, hobby and oystercatcher. The assessment (see **Appendix 28A**) concluded that none of species were likely to breed within the survey area.

4.1.7 The submitted ES already takes account of kingfisher records from the wintering bird surveys, where locations included the River Brue (refer to **Volume 5.8.1, Para 8.4.80**), and desk data that identifies kingfisher on watercourses throughout the order limits (refer to **Volume 5.8.1, Para 8.4.66**).

4.1.8 The submitted ES already takes account of desk data that identifies hobby in the wider area (refer to **Volume 5.8.2, Appendix 8F, Paras 3.3.13; 3.3.29; 4.5.696; Table 4.53; 4.5.698; 4.5.715-718**). Hobby have large ranges and previous bird surveys have not recorded this species within the Order Limits, which indicates the Proposed Development site is not important for this species.

4.1.9 The submitted ES already takes account of pre-existing data that identifies oystercatcher in the wider area (refer to **Volume 5.8.2, Appendix 8F, Paras 4.5.534 – 4.5.540**) and the species was also recorded within the 2012 survey corridor (refer to **Volume 5.8.1, Table 8.14**).

4.1.10 In the submitted ES, the three linear kilometre sections (A7, A8 and A9) of the 2012 breeding bird survey that parallel (at least in part) the 2014 survey area were classified as being 'High' or 'Moderately High' on the Relative Species Diversity Scale (refer to **Volume 5.8.1, Para 8.4.132,** and **Volume 5.8.3, Figures 8.18.1 – 8.18.8)**. The 'Moderately High' category of 2014 results is consistent with the submitted ES.

4.1.11 In the submitted ES, the three linear kilometre sections (A7, A8 and A9) of the 2012 breeding bird survey that parallel (at least in part) the 2014 survey area were classified as being **'**Moderately High' (A7 and A8) or 'Moderate' (A9) on the relative Conservation Species Scale (refer to **Volume 5.8.1, Para 8.4.132,** and **Volume 5.8.3, Figures 8.19.1 – 8.19.8)**. The 'Moderately High' category of 2014 results is consistent with the submitted ES as two of the three linear kilometre sections in the submitted ES were Moderately High (the third section is only partly superseded by the 2014 survey area as the submitted survey is still applicable for the majority of this section).

4.1.12 The baseline descriptions and valuations for bird receptors in the submitted ES (**Volume 5.8.1, Table 8.25**) remain valid and do not change as a result of the 2014 survey update.

## 4.2 Bats

2014 Results

4.2.1 Bat roosts were identified in six trees surveyed as part of the 2014 survey update. Four trees supported single or low numbers of common pipistrelle bat, one tree supported low numbers of common and soprano pipistrelle bats and a further tree supported low numbers of soprano pipistrelle and Natterer's bats.

4.2.2 An additional 29 trees within the Order Limits of the Proposed Development were categorised as having high bat potential, although no roosting bats were identified.

4.2.3 No bats were recorded emerging from any of the surveyed buildings.

4.2.4 Full details of the bat survey results are provided in **Appendix 28B,** Bat Surveys 2014 Update (**Volume 5.28.2**). The locations of all confirmed bat roosts and

Category 1 and 1* trees identified during the 2014 bat surveys are illustrated at **Figure 28.4** (**Volume 28.3.2**).

Comparison with submitted ES

4.2.5 An additional six non-breeding tree roosts supporting single or low numbers of relatively common species of bats (common pipistrelle, soprano pipistrelle and/or Natterer's) have been identified in the 2014 surveys. These species and roost types are similar to that assessed in the submitted ES (refer to **Volume 5.8.1, Table 8.17**).

4.2.6 The 2014 building surveys did not confirm any current bat roosting at Ashtrees Farm, near Mark Causeway. The submitted ES determined from daytime inspections that individual brown long-eared and pipistrelle species might use the buildings occasionally (refer to **Volume 5.8.1, paragraph 8.4.145**). Although no current evidence of roosting bats was identified in 2014, this assessment remains valid as it takes a precautionary approach that bats may use the buildings in the future.

4.2.7 Although an additional six roosts have been added to the baseline description, these are similar to those already identified in 2012/2013. The baseline valuation of Local Value for non-breeding tree roosts of common and widespread species in the submitted ES (**Volume 5.8.1, Table 8.25**) remains valid and does not change as a result of the 2014 survey update.

## 4.3 Water Vole

2014 Results

4.3.1 Water voles were identified within 40 ditches during the 2014 update survey.

4.3.2 Full details of the water vole survey results are provided in **Appendix 28C,** Water Vole and Otter Surveys 2014 Update (**Volume 5.28.2**). The locations of all surveyed water courses and water vole evidence identified during the 2014 water vole surveys are illustrated at **Figure 28.5** (**Volume 28.3.2**).

Comparison with submitted ES

4.3.3 In the submitted ES water vole activity was confirmed in 62% of the watercourses surveyed (269 of 434). During the 2014 update water vole activity was confirmed in 64.5% of the watercourses surveyed (40 of 62). Therefore the percentage of surveyed ditches showing use by water vole in 2014 is broadly consistent with 2012-2013 surveys. Combining the results produces only a very slight increase in ditch occupancy across the survey area to 62.3%.

4.3.4 The submitted ES identified water vole presence from field surveys and data searches along the entire route of the Proposed Development, with the larger clusters of activity principally found across the Levels. The submitted ES recognised that ditches between populations could act as dispersal corridors and this in combination with the mobile, shifting nature of water vole populations, means the majority of watercourses are likely to be of value to water voles, even if they are not actively used at the time of survey.

4.3.5 Although the 2014 update surveys confirmed water vole occupancy in an additional 40 ditches, this does not change the baseline description provided in the submitted ES. The baseline valuation of County Value for water vole in the submitted ES (**Volume 5.8.1, Table 8.25**) remains valid and does not change as a result of the 2014 survey update.

## 4.4 Otter

2014 Results

4.4.1 No additional otter field signs were recorded during the 2014 survey update.

Comparison with submitted ES

4.4.2 There is no change to the baseline description and valuation presented in the submitted ES.

4.4.3 Otter is not considered any further in this document.

## 4.5 Badger

2014 Results

4.5.1 The detailed results of the 2014 badger surveys are provided in **Appendix 28D** Badger Surveys 2014 Update (**Volume 5.28.2**) and illustrated at **Figure 28.6** (**Volume 28.3.2**).

4.5.2 Three active badger setts were recorded during the 2014 update surveys (Setts 21, 22 and 23). Sett 21 is classed as an annex or subsidiary sett with only partial use. Setts 22 and 23 are classed as main setts with high levels of activity.

4.5.3 A further sett was identified (Sett 20) but although the size of the hole does indicate it was created by badgers, there was no evidence of recent badger use and foxes were using the sett.

Comparison with submitted ES

4.5.4 Detailed locations are not provided due to the sensitive nature of the information but all four setts were within 1km of badger records identified in the submitted ES.

4.5.5 The submitted ES identified a total of 20 active badger setts and recognised that the rural areas of the Proposed Development provided a large resource of high quality habitats for use by badgers. Although an additional three active badger setts were found during the 2014 update surveys the size and range of the badger population identified in 2012/2013 is similar. The baseline valuation of Neighbourhood Value for badger in the submitted ES (**Volume 5.8.1, Section 8.4, Table 8.25**) remains valid and does not change as a result of the 2014 survey update.

## 4.6 Amphibians

2014 Results

4.6.1 The detailed results of the 2014 amphibian surveys are provided in **Appendix 28E,** Amphibian Surveys 2014 Update (**Volume 5.28.2**) and illustrated at **Figures 28.7, 28.8** and **28.9** (**Volume 28.3.2**).

4.6.2 Habitat Suitability Index (H.S.I.) assessments were undertaken on 364 ditches and 102 ponds in 2014. Subsequently 126 ditches and 80 ponds underwent full amphibian surveys.

4.6.3 Great crested newts (GCN) were identified in an additional 4 ditches and 10 ponds which equated to 9 new metapopulations (one new GCN breeding pond was identified within an existing metapopulation at Site 9 southwest of Sandford substation). All individual populations fell within the small size class other than the following two locations at which medium size class metapopulations were identified:

- Site 15, east of Horsey Levels (4 ditches)
- Site 16, Horsey Levels (two ponds)

4.6.4 Although an additional pond has been added to the 2013 Site 9 metapopulation, this was already categorized as a medium size class and the 2014 results do not alter this.

4.6.5 Small newt (smooth and/or palmate) was identified in 33 ditches and 49 ponds. Common frog was identified in 17 ditches and 36 ponds. Common toad was identified in 13 ditches and 18 ponds.

Comparison with submitted ES

4.6.6 In 2013 HSI surveys were undertaken on over 2,500 ditches and over 300 ponds. Arising from this, full amphibian surveys were carried out on 964 ditches and over 125 ponds. Great crested newts were identified in 6 ditches and 30 ponds comprising 14 metapopulations of which 3 were medium size class and 11 small size class. The 2014 data increases this figure to 5 medium and 18 small metapopulations.

4.6.7 Of the nine new metapopulations identified in the 2014 surveys, five are within 500m of GCN populations recorded in 2013. Small GCN populations were found at the following new locations:

- Site 17 south of Mark Causeway (nearest record presented in submitted ES is 1.9km south)
- Site 18 southeast of the River Axe crossing (nearest record presented in submitted ES is 3.4km northeast)
- Site 20 northeast of Sandford Substation (nearest record presented in submitted ES is 1.4km southwest)
- Site 23 northeast of the M5 motorway junction 19 (nearest record presented in submitted ES is 1.8km west although historic records were also identified approximately 300m west)

4.6.8 Common toad, common frog and small newts were noted as being frequently encountered and more widespread than the GCN populations.

4.6.9 The 2014 update surveys confirmed great crested newt occupancy in an additional 4 ditches and 10 ponds. GCN population sizes identified in 2014 were predominately small with some medium size populations. This was also the case in 2013. Four new GCN areas were identified but none extended the range of this species further south or north than the 2013 baseline. The baseline valuation of County Value for GCN in the submitted ES (**Volume 5.8.1, Section 8.4, Table 8.25**) remains valid and does not change as a result of the 2014 survey update.

4.6.10 The 2014 surveys confirmed small newts, common toad and common frog were widespread across the survey area as was already identified in 2013. The baseline valuation of Local Value for amphibians (excluding GCN) in the submitted ES (**Volume 5.8.1, Section 8.4, Table 8.25**) remains valid and does not change as a result of the 2014 survey update.

# 5 PREDICTION AND ASSESSMENT OF SIGNIFICANCE OF EFFECTS PRIOR TO MITIGATION

## 5.1 Overview

5.1.1 The prediction and assessment of effects in the submitted ES is presented in **Section 8.5, Volume 5.8.1**. The introductory paragraphs of the section describe:

- Modifications within the scheme design to conserve and protect biodiversity;
- Embedded landscape mitigation, notably site specific planting plans;
- Embedded hydrology and water resources mitigation;
- Embedded air quality and dust mitigation;
- Embedded habitat reinstatement;
- Limits of deviation.

5.1.2 All these elements remain relevant, as does the general description of potential construction effects (**paragraphs 8.5.55 to 8.5.65**).

## 5.2 Birds

5.2.1 The range and numbers of bird species identified in the 2014 update survey are very similar to those identified in the adjacent 2012 survey areas. The submitted ES used the 2012 data in combination with habitat surveys along the final submitted 400kV overhead alignment at Mark to determine the effects on bird receptors.

5.2.2 The 2014 update surveys shows there is no material change to the baseline, so the pre-mitigation effects presented in the submitted ES (summarised in **Table 5.1**) remain valid.

Table 5.1: Summary of predicted pre-mitigation effects on selected bird receptors from the submitted ES

| Receptor | Construction Phase | Operational Phase |
|---|---|---|
| Kingfisher | Minor Adverse | N/A |
| Raptors (including hobby) | Minor Adverse | Not Significant |
| Waders (including oystercatcher) | Minor Adverse | Not Significant |
| Farmland Birds | Minor Adverse | N/A |

5.2.3 The statement at **paragraph 8.5.384** of the submitted ES, that decommissioning effects would broadly reflect those described for the construction phase, also remains valid.

## 5.3 Bats

5.3.1 Although 6 additional bat roosts have been identified in trees potentially affected by the Proposed Development, National Grid has confirmed that all 6 trees will be retained. The retained roosts may experience noise and vibration disturbance during the construction phase. One tree (Natterer's roost) will require pruning during the construction phase and one tree (common pipistrelle roost) may require pruning in 10 years' time. This range of effects is already described in the submitted ES.

5.3.2 Construction phase fragmentation and disturbance to the 6 retained roosts and the potential operational phase disturbance (pruning) to one of these roosts is commensurate with the effects identified in the submitted ES. The pre-mitigation effects presented in the submitted ES (summarised in **Table 5.2**) remain valid.

Table 5.2: Summary of predicted pre-mitigation effects on selected bat receptors from the submitted ES

| Receptor | Construction Phase | Operational Phase |
|---|---|---|
| Roosts (loss of non-breeding roosts) | Moderate Adverse | N/A |
| Roosts (fragmentation and disturbance to retained roosts) | Minor Adverse | N/A |
| Bats (effects on roosting, commuting and foraging bats from occasional use of lighting at Sandford Substation) | N/A | Minor to Major Adverse depending on species |

5.3.3 The statement at **paragraph 8.5.384** of the submitted ES, that decommissioning effects would broadly reflect those described for the construction phase, also remains valid.

## 5.4 Water Vole

5.4.1 40 additional ditches affected by the Proposed Development have confirmed water vole activity as a result of the 2014 update surveys. The submitted ES identified the potential for water voles to use the majority of watercourses affected by the Proposed Development, therefore, both the types and extent of effects on water voles are is already described in the submitted ES. The pre-mitigation effects presented in the submitted ES (summarised in **Table 5.3**) remain valid.

Table 5.3: Summary of predicted pre-mitigation effects on water vole from the submitted ES

| Receptor | Construction Phase | Operational Phase |
|---|---|---|
| Water vole (HDD watercourse crossings) | Minor Adverse | N/A |
| Water vole (culverts, bridges and cable ducts) | Major Adverse | N/A |
| Water vole (River Axe bridge crossing) | Minor Adverse | N/A |

5.4.2 The statement at **paragraph 8.5.384** of the submitted ES, that decommissioning effects would broadly reflect those described for the construction phase, also remains valid.

## 5.5 Badger

5.5.1 Three additional active badger setts have been identified within or adjacent to the Order Limits of the Proposed Development. The entrances of Sett 21 have been confirmed as over 30m from the Order Limits. The entrances of Setts 22 and 23 are within 30m of access routes and working areas for 132kV removal only. It is not expected that additional sett closures are required.

5.5.2 The badgers from retained setts may experience noise and vibration disturbance, fragmentation and entrapment in excavations during the construction phase. This range of effects is already described in the submitted ES. The pre-mitigation effects presented in the submitted ES (summarised in **Table 5.4**) remain valid.

Table 5.4: Summary of predicted pre-mitigation effects on badger from the submitted ES

| Receptor | Construction Phase | Operational Phase |
|---|---|---|
| Badger (loss of setts, sett disturbance, loss of foraging, fragmentation, entrapment in excavations) | Minor Adverse | N/A |

5.5.3 The statement at **paragraph 8.5.384** of the submitted ES, that decommissioning effects would broadly reflect those described for the construction phase, also remains valid.

## 5.6 Amphibians

5.6.1 Of the additional 4 GCN ditches and 10 GCN ponds identified in 2014 all except two (Site 19 and Site 23) are at least 50m outside the Order Limits of the Proposed Development. The pond at Site 19 falls within the Order Limits but is outside the construction footprint. The pond at Site 23 is outside the Order Limits.

5.6.2 Terrestrial habitat associated with these new GCN populations is likely to be affected by the following construction components:

- temporary 132kV access routes;
- temporary 132kV pylon removal areas;
- temporary scaffolding, haul roads and construction compounds;
- temporary 132kV and 400kV underground cable working areas;
- temporary 400kV pylon working areas construction, and;
- permanent footprints of pylons and Sandford Substation.

5.6.3 The 2013 surveys already identified interaction between GCN terrestrial habitats and these elements of the Proposed Development.

5.6.4 The submitted ES stated there would be no permanent loss of aquatic habitat at any locations where GCN were recorded. The findings of the 2014 update surveys do not alter this statement, no permanent loss of aquatic GCN habitat will occur as a result of the Proposed Development.

5.6.5 The permanent terrestrial habitat losses stated in the submitted ES are slightly altered by the findings of the 2014 surveys as follows:

- Within 50m increased from <0.01ha to 0.07ha
- Within 250m increased from <0.01ha to 2.87ha
- Within 500m decreased from 2.01ha to 1.49ha

5.6.6 These changes to permanent effects on terrestrial habitats do not increase the magnitude of effect assessed in the submitted ES.

5.6.7 The temporary (medium-term) terrestrial habitat losses stated in the submitted ES are slightly altered by the findings of the 2014 update surveys as follows:

- Within 50m increased from 7.35ha to 7.62ha
- Within 250m increased from 32.08ha to 43.39ha
- Within 500m decreased from 54.83ha to 54.06ha

5.6.8 These changes to temporary effects on terrestrial habitats do not increase the magnitude of effect assessed in the submitted ES.

5.6.9 The GCN populations will also experience the effects of temporary habitat fragmentation. The additional populations identified in 2014 do not increase the magnitude of effect assessed in the submitted ES.

5.6.10 The submitted ES stated that the loss and fragmentation of habitats used by GCN, would also affect the other amphibian species. The additional records of frog, toad

and small newts identified in 2014 do not increase the magnitude of effect assessed in the submitted ES.

5.6.11 As discussed, the range of effects likely to be experienced by the amphibian populations identified in 2014 is already described in the submitted ES. The pre-mitigation effects presented in the submitted ES (summarised in **Table 5.5**) remain valid.

Table 5.5: Summary of predicted pre-mitigation effects on amphibians from the submitted ES

| Receptor | Construction Phase | Operational Phase |
|---|---|---|
| GCN (habitat losses at GCN ditch crossings) | Minor Adverse | N/A |
| GCN (permanent and temporary terrestrial habitat losses and fragmentation) | Moderate Adverse | N/A |
| Other amphibians (temporary habitat losses at ditch crossings) | Not Significant | N/A |
| Other amphibians (permanent and temporary terrestrial habitat losses and fragmentation) | Minor Adverse | N/A |

5.6.12 The statement at **paragraph 8.5.384** of the submitted ES, that decommissioning effects would broadly reflect those described for the construction phase, also remains valid.

### 5.7 Climate Change

5.7.1 The consideration of climate change effects on biodiversity, presented at **paragraphs 8.5.393** to **8.5.400** of the submitted ES, is not altered by the findings of the 2014 update surveys. No new receptors are identified, nor are population levels different from the assessment made in the submitted ES.

## 6 INTER-RELATIONSHIP OF EFFECTS

### 6.1 Inter-Relationship of Effect Update

6.1.1 No additional species to those assessed in the submitted ES have been identified as a result of the 2014 update surveys. Previously recorded species have been identified in new locations, but all potential interactions with construction activities and project elements have already been assessed in the submitted ES. No additional inter-relationships of effects result from the 2014 survey update and there are no changes to the inter-relationship of effects presented in the submitted ES (**Volume 5.8.1, section 8.6**).

# 7 MITIGATION

## 7.1 Overview

7.1.1 The mitigation approaches for the construction, operational and decommissioning phases are set out in **Section 8.7, Volume 5.8.1** of the submitted ES and presented in the Biodiversity Mitigation Strategy (BMS) (**Volume 5.26.3**). These remain relevant and the following paragraphs should be read in conjunction with the submitted ES and BMS.

## 7.2 Birds

7.2.1 Relevant mitigation outlined in the submitted ES (**Volume 5.8.1**) includes:

- nesting birds (**paragraph 8.7.79**);
- ground nesting birds (**paragraph 8.7.80** and **8.7.86**);
- kingfisher (**paragraph 8.7.83)**;
- habitat reinstatement (**paragraph 8.7.87**).

7.2.2 No additional mitigation proposals are required as a result of the findings of the 2014 breeding bird update survey.

## 7.3 Bats

7.3.1 Relevant mitigation outlined in the submitted ES (**Volume 5.8.1**) covers:

- Protection (including fencing) of known or high potential bat roost trees (**paragraphs 8.7.91** to **8.7.96**);
- Ashtrees Farm (**paragraph 8.7.97**);
- Compensatory planting (**paragraph 8.7.100**);
- Lighting (**paragraph 8.7.101**);
- Foraging and commuting (**paragraphs 8.7.102** to **8.7.107**).

7.3.2 Although some new locations are identified where fencing will be required to prevent encroachment of traffic near bat roost trees, no additional mitigation proposals are required as a result of the 2014 bat update surveys.

## 7.4 Water Vole

7.4.1 Relevant mitigation outlined in the submitted ES (**Volume 5.8.1**) covers:

- Protection of retained watercourses (**paragraph 8.7.114**);
- Pre-commencement surveys and habitat manipulation (**paragraphs 8.7.115** to **8.7.117**);
- 400kV undergrounding and Sandford Substation (**paragraph 8.7.119**);

- Removal of water course crossings (**paragraphs 8.7.120** to **8.7.121**).

7.4.2 No additional mitigation proposals are required as a result of the 2014 water vole update surveys.

## 7.5 Badger

7.5.1 Relevant mitigation outlined in the submitted ES (**Volume 5.8.1**) covers:

- Pre-commencement surveys (**paragraph 8.7.130**);
- Licensable activities (**paragraphs 8.7.129** and **8.7.131** to **8.7.132** and **8.7.134**);
- Fencing of retained setts (**paragraph 8.7.133**);
- Entrapment in excavations (**paragraph 8.7.135**);
- Fragmentation from construction fencing, (**paragraph 8.7.136**).

7.5.2 Although two new locations are identified where fencing will be required to prevent encroachment of traffic near badger setts, no additional mitigation proposals are required as a result of the 2014 badger update surveys.

## 7.6 Amphibians

7.6.1 Relevant mitigation outlined in the submitted ES (**Volume 5.8.1**, **paragraphs 8.7.143** to **8.7.150**) covers works requiring a licence from Natural England.

7.6.2 Although several new locations have been identified where licensable mitigation will now be required, no additional mitigation proposals are required as a result of the 2014 amphibian update surveys.

## 7.7 Biodiversity Mitigation Strategy (BMS)

7.7.1 As set out in the submitted BMS (**Volume 5.26.3**), the BMS should be considered as a live document and will be updated throughout each construction phase of the development. Amendments to any aspect of the Proposed Development will be agreed with the relevant organisations as detailed in the submitted BMS.

7.7.2 The findings from the 2014 update surveys do not alter the mitigation proposals identified in the submitted BMS. However, the BMS will be updated throughout the construction phase to ensure the proposed mitigation measures are appropriate. Sections within the submitted Draft CEMP (Volume 5.26.1) describe the process for updating the BMS.

# 8 RESIDUAL EFFECTS

## 8.1 Overview

8.1.1 The approach to assessing residual effects and the description of residual effects are set out in **Section 8.8, Volume 5.8.1** of the submitted ES. These remain relevant and the following paragraphs should be read in conjunction with the submitted document.

## 8.2 Birds

8.2.1 The pre-mitigation effects on birds are unchanged by the 2014 breeding survey update results and no additional mitigation approaches are required. Accordingly there is no change to the predicted residual effects on birds reported in the submitted ES.

## 8.3 Bats

8.3.1 The pre-mitigation effects on bats are unchanged by the 2014 bat survey update results and no additional mitigation approaches are required. Accordingly there is no change to the predicted residual effects on bats reported in the submitted ES.

## 8.4 Water Vole

8.4.1 The pre-mitigation effects on water vole are unchanged by the 2014 survey update results and no additional mitigation approaches are required. Accordingly there is no change to the predicted residual effects on water vole reported in the submitted ES.

## 8.5 Badger

8.5.1 The pre-mitigation effects on badger are unchanged by the 2014 survey update results and no additional mitigation approaches are required. Accordingly there is no change to the predicted residual effects on badger reported in the submitted ES.

## 8.6 Amphibians

8.6.1 The pre-mitigation effects on amphibians are unchanged by the 2014 survey update results and no additional mitigation approaches are required. Accordingly there is no change to the predicted residual effects on amphibians reported in the submitted ES.

# 9 COMPENSATION, OFFSETTING AND ENHANCEMENT MEASURES

## 9.1 Overview

9.1.1 The compensation, offsetting and enhancement measures presented at **Section 8.9, Volume 5.8.1** of the submitted ES are not altered by the findings of the 2014 update surveys.

# 10 CONSIDERATION OF THE WATER FRAMEWORK DIRECTIVE

## 10.1 Overview

10.1.1 The consideration of the Water Framework Directive, presented at **Section 8.10, Volume 5.8.1** of the submitted ES, is not altered by the findings of the 2014 update surveys.

# 11 CUMULATIVE EFFECTS

## 11.1 2014 Survey Update Review

11.1.1 There is no change to the range or distribution of bird species as a result of the 2014 survey updates. Therefore, the cumulative effect on bird receptors remains as predicted in the submitted ES (**Volume 5.8.1, section 8.11**).

11.1.2 There is no change to the range or distribution of bat species as a result of the 2014 survey update. Although additional roosts were identified, all these will be retained. Therefore the cumulative effect on bat receptors remains as predicted in the submitted ES.

11.1.3 Although water voles were identified within watercourses not surveyed in the submitted ES, the ES recognises the mobile nature of water vole populations and assumes that this species has the potential to be present in most watercourses across the Proposed Development. Therefore the cumulative effect on voles remains as predicted in the submitted ES.

11.1.4 There is no change to the distribution of badger as a result of the 2014 survey update. Although additional setts were identified all of these will be retained. Therefore the cumulative effect on badgers remains as predicted in the submitted ES.

11.1.5 There is no change to the range or distribution of amphibian species as a result of the 2014 survey update. Although additional GCN breeding ponds and ditches were identified, all of these will be retained. There will be no change to predicted

permanent terrestrial habitat losses and only small changes to temporary losses. Therefore the cumulative effect on amphibian receptors remains as predicted in the submitted ES.

11.1.6 In conclusion, the 2014 survey update does not change the conclusions of the cumulative assessment in the submitted ES.

# 12 CONCLUSIONS

## 12.1 Overview

12.1.1 This report considers the implications of the 2014 survey update for the assessment and conclusions of the ES submitted for the proposed Hinkley Point C Connection project.

12.1.2 As outlined in the earlier sections of this document (and supported by the detailed results presented in **Appendices 28A** to **28E**), although there are minor changes to the baseline description in the submitted ES, those changes do not introduce any new receptors, nor do they change the valuation of the receptors.

12.1.3 Although additional locations for potential effects on receptors have been identified (e.g. six trees with bat roosts were found in 2014), no new types of effects on receptors have been predicted. Nor does the assessment of magnitude of pre-mitigation effects change from the submitted ES.

12.1.4 Although mitigation will be required at additional locations, no new methods of mitigation are required and so there is no change to the residual effects predicted in the submitted ES.

12.1.5 There is no change to the conclusions in the submitted ES in relation to climate change, inter-relationship of effects, the Water Framework Directive or the cumulative assessment.

12.1.6 In summary, the findings of the 2014 ecology survey update do not alter the findings of the submitted ES.

# 13 HABITATS REGULATION ASSESSMENT

## 13.1 Overview

13.1.1 The submitted Applicant's Report to Support the Habitats Regulation Assessment is provided at **Volume 5.20.1** of the DCO application.

## 13.2 Birds

13.2.1 Of the European Designated sites scoped into the Habitats Regulation Assessment (HRA) for the Hinkley Point C Connection Project the only breeding bird species listed as a qualifying feature is the lesser black-backed gull for the Severn Estuary Ramsar. No suitable breeding habitat for this species was identified along the 2014 breeding bird survey area. The results of the 2014 breeding bird survey update do not influence the findings of the HRA.

## 13.3 Bats

13.3.1 The submitted HRA report considered the following five Special Areas of Conservation (SAC) with bats as a qualifying or primary reason:

- North Somerset and Mendip Bats SAC - Greater horseshoe bat and lesser horseshoe bat.
- Mendip Limestone Grasslands SAC - Greater horseshoe bat.
- Exmoor and Quantock Oakwoods SAC - Barbastelle bat and Bechstein's bat.
- Mells Valley SAC - Greater horseshoe bat.
- Bath and Bradford–on-Avon Bats - Greater horseshoe bat.

13.3.2 No roosts for any of these SAC bat species were identified during the 2014 survey updates. Therefore the results of the 2014 roosting bat surveys have no implications for the HRA.

## 13.4 Water Vole

13.4.1 Water vole is not an Annex II species and therefore the 2014 survey update results have no implications for the submitted HRA.

## 13.5 Badger

13.5.1 Badger is not an Annex II species and therefore the 2014 survey updates results have no implications for the submitted HRA.

## 13.6 Amphibians

13.6.1 Great crested newt is the only Annex II amphibian species identified in the study area. However, none of the sites scoped into HRA assessment have great crested newt as a qualifying feature. Therefore the 2014 survey update results have no implications for the submitted HRA.