



Ecology Consultancy



# **Galloper Wind Farm, Sizewell, Suffolk**

Bat and Reptile Monitoring Report 2015

**Report for Galloper Wind Farm Ltd**

Version	Author	Checked by	Approved by	Date	Type
1	Tracy Simpson, Christine Hipperson	Dr Rachel Saunders	Danny Thomas	08/12/2015	FINAL

# Contents

1.	Introduction .....	1
2.	Methods .....	3
3.	Results .....	5
4.	Conclusions and Recommendations .....	8
	References .....	10
	Appendix 1: Plans .....	11
	Appendix 2: Legislation.....	13

**LIABILITY**

Ecology Consultancy Limited has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of Ecology Consultancy Limited. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by ECL, unless otherwise stated in the report.

**COPYRIGHT**

© This report is the copyright of Ecology Consultancy Limited. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy is the trading name of Ecology Consultancy Ltd.

# 1. Introduction

## OVERVIEW

- 1.1 The Ecology Consultancy was commissioned by Galloper Wind Farm Limited to undertake bat and reptile monitoring surveys at the substation site located to the north of Sizewell Gap, Leiston, Suffolk

## BACKGROUND - BATS

- 1.2 During 2013-2014 works were carried out on site which involved tree felling within Sizewell Wents woodland. As a result several trees with potential to support bat roosts and one tree with a confirmed bat roost were felled under an European Protected Species Mitigation (EPSM) licence from Natural England (Reference: 2014-3688-EPS-MIT). One of the requirements of the licence is to undertake monitoring visits to assess how the bats have been impacted by the work and establish whether or not the mitigation put in place is adequate. The licence states that monitoring will be carried out twice a year (one visit in June/July and a second in August/September) in the years 2014, 2015 and 2018 by which time the construction works in the area should be nearing completion.
- 1.3 The 2014 monitoring comprised two bat activity surveys carried out on the 18th June and 30<sup>th</sup> September 2014 and bat box checks carried out between 24<sup>th</sup> and 30<sup>th</sup> September 2014. Additional bat boxes were installed on 12<sup>th</sup> November 2014 to mitigate for changes to the proposed site layout. The results were as follows:
- Little change in the level of bat activity across the site or the species recorded;
  - Seven species detected during the two visits (common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Myotis sp. noctule, brown long-eared bat and Leisler's bat);
  - Two soprano pipistrelles were found roosting in Box 1 (2FN box in north-west of woodland);
  - Unidentified bat droppings were found in a further two 2FN boxes and within four of the five 1FF boxes.
- 1.4 The majority of the site clearance works and the initial stage of construction works, e.g. creation of the landform and hard standing areas, were completed during 2014. At the time of the first 2015 survey no work had been undertaken on the site for approximately 8 months.

## **BACKGROUND - REPTILES**

- 1.5 In May 2013, upon receiving development consent for the site, reptile fencing was erected across the site and a translocation program commenced on 14th June 2013. The translocation involved undertaking two visits to the site per day to capture any reptiles present and move them to the receptor site. The translocation continued until 12th August and during this time 71 trapping visits were undertaken and a total of 96 reptiles (51 slow worms, 29 common lizards, four adders and 12 grass snakes) were captured and moved to the receptor site. A further five visits were carried out in May 2014 to capture any remaining animals and then ad hoc checks were made throughout the summer whilst other works on site were being carried out. This resulted in an additional 24 reptiles (one slow worm, eight common lizards, nine adders and six grass snakes) being captured and moved to the receptor site.
- 1.6 During 2014 monitoring visits of the receptor site were also carried out. During one visit several adders were observed basking on one of the log piles. On another occasion a single common lizard was observed basking on top of one of the refugia within the receptor site.

## **SCOPE OF REPORT**

- 1.7 This report details the findings from the bat and reptile monitoring visits carried out between August and November 2015.

## 2. Methods

### BAT MONITORING SURVEYS

- 2.1 The bat monitoring comprised two bat activity surveys and bat box checks carried out on the 4<sup>th</sup> August and 30<sup>th</sup> September 2015. Tracy Simpson (Senior Ecologist) and Sam Phillips (Associate Ecologist) undertook the first survey and Michelle Fielden (Ecologist) and Danny Thomas (Senior Ecologist) carried out the second survey. All surveyors are experienced bat workers and hold Natural England survey licences for bats.
- 2.2 The aims of the surveys were to assess the levels of activity and numbers of species present, and to allow an assessment of how the works on site may have impacted upon bats.
- 2.3 The activity surveys commenced with an emergence survey followed by a walked transect of the site. During the first visit on 4<sup>th</sup> August one surveyor was positioned near the retained tree roost located within the woodland whilst the other viewed bat box number 10 located on the southern edge of the woodland. During the second visit on 30<sup>th</sup> September a more general approach was taken with one surveyor stationed close to the newly erected bat boxes in the centre of the site and the other surveyor positioned within the southern section of woodland close to the hibernation boxes. The surveyors remained in position until it was too dark to be able to clearly see any emergence activity (approximately 45 minutes after sunset) at which point they jointly walked a transect around the site focussing on the woodland habitats.
- 2.4 Automated Anabat detectors were also deployed for the duration of the survey to record activity across the site. Two were deployed during the first visit and three were deployed during the second visit.
- 2.5 Bat boxes installed during 2013 and 2014 were inspected. Due to the sensitive timing of the first survey, during the breeding season, bat boxes were first checked from ground level using close focussing binoculars and, where considered safe to do so, an endoscope was then used to inspect the boxes internally. If it could be clearly seen that no bats were present the boxes were opened to allow a close inspection for droppings or other signs of use.

### REPTILE MONITORING SURVEYS

- 2.6 Artificial refugia were laid out within the most suitable areas of the receptor site on 24<sup>th</sup> August 2015 and twenty survey visits were then carried out between 2<sup>nd</sup>

September and 5<sup>th</sup> November 2015. During the visits the artificial refugia were checked and a visual search was carried out to look for the presence of reptiles within the site. Any observations made were recorded together with details of the weather conditions during the visit.

## CONSTRAINTS

- 2.7 To increase the spread of data and comply with the EPSM licence for bats the first bat monitoring visit should have been carried out during June or July; however, due to works on site being temporarily put on hold, the first visit was delayed until early August. This short delay is not considered likely to have significantly altered the findings of the surveys and surveys were still carried out within the optimal time period for this species group.
- 2.8 It was not possible to access the southern section of retained woodland due to the presence of Heras fencing around the area. This meant that Box 10, the two hibernation boxes and a section of tree containing a roost feature could not be inspected for signs of use. Box 10 could be viewed through binoculars and was subject to an emergence survey. All of these features, except Box 10 which was too high to reach, were checked during the second monitoring visit carried out in September 2015.

## 3. Results

### BAT MONITORING

#### Emergence and Activity Surveys

- 3.1 No bats were observed emerging from any of the roost locations on site during either survey.
- 3.2 The results from the bat activity surveys show a similar species diversity and level of activity to that detected before the works on site commenced, with a total of six species recorded during the two monitoring visits in 2015. These were; common pipistrelle, soprano pipistrelle, *Myotis* sp. noctule, serotine and brown long-eared bat. Three bat species previously detected were not recorded during either monitoring visit; these were Nathusius' pipistrelle, barbastelle and Leisler's bat which had previously been recorded in low numbers during pre-construction surveys.

#### Bat Box Checks

##### 4<sup>th</sup> August 2015

- 3.3 Of the boxes installed during 2013 bat droppings were present within four of the 1FF boxes (boxes number 3, 4, 8 & 9) and one of the 2FN boxes (Box 5). Of the boxes installed during 2014 one, Box D, was found to contain droppings. The droppings were not analysed and, as such, the species of bat utilising the boxes was not determined with certainty. Based on the size and shape of the droppings observed as well as previous data available from the site it is considered likely that they were of pipistrelle and Natterer's bats.
- 3.4 All of the 2FN boxes showed signs of use by birds, although one of them was found to contain a bird's nest and bat droppings. Several of the 1FF boxes also showed signs of use by birds but as these boxes are open at the bottom no nest construction was possible.

##### 30<sup>th</sup> September 2015

- 3.5 Of the boxes installed during 2013 three were found to be in use by bats with three common pipistrelles present in Box 1 (one of which was a juvenile), one pipistrelle found in Box 5 and one soprano pipistrelle in one of the hibernation boxes. Bat droppings were also present within a further four boxes (Box numbers 8, 9, 10 and the other hibernation box). Of the boxes installed during 2014 Box A was found to contain four soprano pipistrelles and Box D was found to contain bat droppings.



- 3.6 The droppings were not analysed and as such, the species of bat utilising the boxes was not determined with certainty. Based on the size and shape of the droppings observed in addition to previous data available from the site it is considered likely that they were from pipistrelle bats.
- 3.7 Bird nests were again found to be present in many of the boxes and these were removed where possible.

### REPTILE MONITORING

- 3.8 The receptor site was found to have improved slightly since the previous year with slightly more scrub and tussocky grassland present along the northern part of the site than previously. However, the hibernacula were still largely unvegetated and the vegetation across the majority of the site remains fairly uniform in structure.
- 3.9 Between 2<sup>nd</sup> September and 5<sup>th</sup> November 20 monitoring visits were carried out. Three species of reptile were found within the site; adder, common lizard and slow worm. The majority of reptiles were found beneath the artificial refugia although on several occasions an adult male adder was seen basking on the western most hibernacula. A summary of the weather conditions and survey results for each is presented in Table 1 below.

Table 1: Summary of reptile monitoring survey visits

Visit	Date	Start Time	End Time	Start Temp	Weather	Reptiles
1	02/09/2015	10:30	11:30	15	40% cloud cover, Sunny, still	1 common lizard
2	03/09/2015	10:35	11:35	14	90% cloud cover, Rain before the survey, light wind,	1 common lizard
3	07/09/2015	11:00	12:00	16	100% cloud cover, still	1 juvenile slow worm
4	08/09/2015	11:00	11:45	15	90% cloud cover, still, no rain	None
5	09/09/2015	10:40	11:30	17	20% cloud cover, still	None
6	10/09/2015	10:40	11:55	18	5% cloud cover, light breeze and sunny	None
7	17/09/2015	13:45	14:45	16	50% cloud cover, no rain, still	None
8	18/09/2015	12:45	13:45	16	90% cloud cover, still. Heavy rain before and after survey	None
9	21/09/2015	11:30	12:30	16	90% cloud cover, still, light rain briefly at start & end of survey	1 adult adder
10	22/09/2015	10:30	11:30	12	70% cloud cover, still, no rain	1 adult adder and 1 juvenile slow worm
11	24/09/2015	10:55	11:50	14	60% cloud cover, still, no rain. Rain before survey	1 adult adder and 1 juvenile slow worm
12	25/09/2015	10:55	11:50	16	30% cloud cover, still, sunny	1 adult adder, 2 juvenile adders and juvenile slow worm
13	28/09/2015	12:35	13:25	17	30% cloud, little wind, sunny	2 juvenile adders and a slow worm
14	29/09/2015	15:30	16:30	18	40% cloud, sunny spells, brisk wind	1 adult and 1 juvenile adder
15	30/09/2015	11:15	12:10	15	10% cloud, sunny, light wind	None
16	08/10/2015	14:15	15:10	15	10% cloud, Sunny, light breeze	1 adult and 1 juvenile adder
17	09/10/2015	12:30	13:30	15	15% cloud, Sunny, light breeze	1 juvenile adder and 1 common lizard
18	12/10/2015	11:15	12:00	12	70% cloud, patchy sunshine	1 adult adder and 1 adult slow worm
19	13/10/2015	10:20	11:15	11	95% cloud, little wind, no rain.	1 juvenile adder, 1 common lizard and 1 adult slow worm
20	05/11/2015	10:00	11:00	14	100% cloud cover, light rain, breezy.	1 adult adder

## 4. Conclusions and Recommendations

### Bats

- 4.1 On the basis of the work undertaken this year it appears that the bat mitigation has been adequate. The impact of the development on roosting bats was largely limited to the felling of a single known roost together with any associated indirect impacts through disturbance and loss of habitat. The monitoring surveys show that the site continues to be used by a range of bat species with the number and range of species recorded being largely unchanged. The only species that were not detected during the 2015 monitoring visits that were recorded during the pre-construction surveys were Nathusius' pipistrelle, Leisler's bat and barbastelle bat. None of these species were abundant during the pre-construction surveys although Leisler's bat had also been recorded during the previous monitoring survey. It is therefore considered that the development works undertaken to date have had little impact on the bat species using the site and that the absence of several species reflects their low density away from roost sites and the reduced extent of the monitoring surveys and not a reduction in the suitability of habitats on site.
- 4.2 Inspection of the bat boxes showed that both the boxes within the woodland erected during March 2013 and those on the edge of the woodland erected in 2014 were being used by roosting bats. A number of the boxes were found to contain droppings but no bats, which would suggest that bats are using them intermittently. It is concluded that the boxes are of suitable design and are appropriately positioned to provide mitigation for the impacts of the works.
- 4.3 In line with the latest EPSM licence, further monitoring should be undertaken with two visits in 2018, at which point the construction works should be almost completed.

### Reptiles

- 4.4 The reptile monitoring visits indicate that the receptor site is providing some opportunities for low numbers of reptile species, although many of the animals seen are believed to be the same individuals observed each visit. This conclusion is based on the locations where each animal was seen, together with observations of colouring, size and life stage. Therefore, the overall number of reptiles present is relatively low. Despite this, numbers have increased since the previous monitoring visit suggesting that the quality of the habitat within the receptor site may be

improving. As such it would be beneficial to undertake monitoring surveys between April and September 2016 to further establish utilisation of the site by reptiles during the year and whether the quality of the habitat is improving sufficiently enough to sustain the increased population of reptiles. This will help to inform as to whether or not the mitigation provided is sufficient to compensate for the loss of habitat.

- 4.5 No grass snakes were observed during any of the visits which is likely due to the large territories maintained by individual animals, the small size of the site and the absence of water within the receptor site; grass snakes are a wide ranging species that principally prey on amphibians.
- 4.6 One adult adder was observed basking on top of a hibernaculum and two juvenile adders were observed beneath the refugia within the receptor site. It is possible that these will remain on site over winter. To further establish whether or not adders are hibernating on site and to determine whether or not the mitigation provided is sufficient to compensate for the loss of any hibernation sites, it would be beneficial to undertake surveys in early spring (February/March) 2016, at which time adders would be emerging and do not range from their hibernation sites at this time. The presence of adders within the receptor site at this time of year would provide a reasonable indication that they had used the site for hibernating.

## References

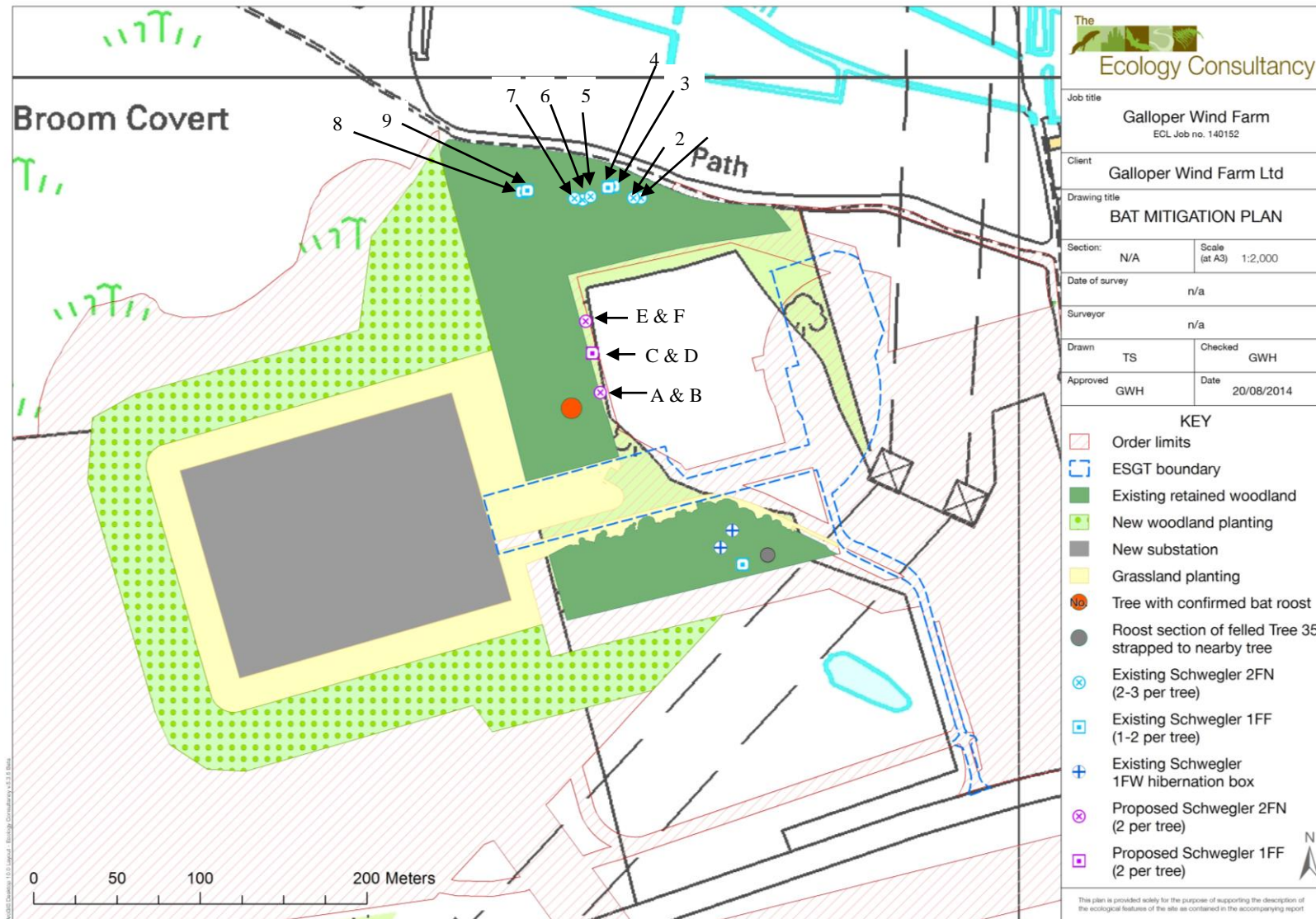
The Ecology Consultancy (2012). *Galloper Wind Farm, Reptile Mitigation Strategy*. Unpublished report.

The Ecology Consultancy (2013). *Galloper Wind Farm Mitigation Summary*. Unpublished report.

The Ecology Consultancy (2014). *Galloper Wind Farm, Sizewell: Ecological Clerk of Works Summary Report March to November 2014*. The Ecology Consultancy. Unpublished report for Galloper Wind Farm Ltd.

## Appendix 1: Plans

Figure 1: Post construction landscape proposals plan.



## Appendix 2: Legislation



**Important Notice:** This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

## **A NATIONAL LEGISLATION AFFORDED TO SPECIES**

The objective of the EC Habitats Directive<sup>1</sup> is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on [www.opsi.gov.uk](http://www.opsi.gov.uk). Key amendments have been made through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Natural Environment & Rural Communities (NERC) Act 2006
- Wild Mammals (Protection) Act 1996

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

**Explanatory notes** relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term ‘deliberate’ is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2010 (as amended) does not define the act of ‘migration’ and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

---

<sup>1</sup> Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three ‘tests’: i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

### Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young;
    - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
  - b) to affect significantly the local distribution or abundance of the species
- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

### *How is the legislation pertaining to herpetofauna liable to affect development works?*

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation of Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

### **Bats**

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or taking (capture) of Schedule 2 species (e.g. bats)
- Deliberate disturbance of bat species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young;
    - (ii) to hibernate or migrate
  - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

### *How is the legislation pertaining to bats liable to affect development works?*

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation *may* also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost.



## Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

### Experience and quality that make a difference

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ T. 020 7378 1914 W. [www.ecologyconsultancy.co.uk](http://www.ecologyconsultancy.co.uk)

■ **Sussex** - The Old Dairy, Barcombe Mills Road, Lewes, East Sussex BN8 5FF T. 01273 813739

■ **Norfolk** - Thorpe House, 79 Thorpe Road, Norwich NR1 1UA T. 01603 628408

■ **Scotland** - Suite 10, 3 Coates Place, Edinburgh EH3 7AA T. 0131 225 8610