



ENVIRONMENTAL CONSULTANTS

Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex, GU28 9BU

Updated Preliminary Ecological Appraisal Report

Land west of Arundel Road, Angmering

Author: Sam Lunn, BSc, MSc, ACIEEM

Reviewed by: Paul Whitby, BSc, MCIEEM, CEcol

21st May 2018

Project No: 1248

The Ecology Co-operation Ltd
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ
Company number: 8905527



Report Summary

1. The Ecology Co-op has been commissioned by the land owner, Marcus Ripley to undertake a Preliminary Ecological Appraisal at 'Land west of Arundel Road' in Angmering. A site walkover survey visit was carried out on the 4th May, to evaluate the site for habitats potentially suitable to support EU and UK protected species. The purpose of this report is to record the findings of the survey and identify potential ecological constraints to a proposed residential development of nine units.
2. This survey was undertaken by Sam Lunn, BSc, MSc, ACIEEM.
3. The site consists of recently cut ephemeral/short perennial vegetation surrounded by boundary hedgerows with trees. The eastern boundary has a line of blackthorn scrub alongside which has created a thicker, high value hedgerow. To the east and north of the site are two parcels of broad-leaved woodland. Pastoral fields and a small industrial estate lie to the west and a small number of residential buildings run along Arundel road to the south.
4. There are no designated sites within 1km of the site however there is a large parcel of Broadleaved priority habitat woodland across the road, west of the site. The habitat within the site provides suitable foraging habitat for bats and reptiles and three activity surveys for bats has been recommended. A reptile survey was conducted in 2015 and identified a medium population of common lizard. The boundary hedgerows have potential to provide foraging opportunities for dormice. Further surveys are not currently required as the hedgerows will be retained, however should the plans change and sections of hedgerow do require removal, then a dormouse survey must be conducted and measures to protect and enhance hedgerows should be put in place.
5. A large area of ephemeral / short perennial habitat will be lost, that currently supports a medium population of reptiles. An area of the development should be retained and converted to wildflower meadow to compensate for this loss. In addition, the south, west and north boundary hedgerows should be thickened through native mix planting.

This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.



CONTENTS PAGE

1 INTRODUCTION.....	5
1.1 Purpose of the Report	5
1.2 Background	5
1.3 Policy and Legislation.....	7
2 METHODOLOGY.....	7
2.1 Desk Study.....	7
2.2 Field Survey	7
2.3 Badgers.....	8
2.4 Bats.....	8
2.5 Breeding Birds.....	8
2.6 Dormice.....	8
2.7 Great Crested Newt.....	9
2.8 Reptiles	9
2.9 Other notable species	9
3 BASELINE CONDITIONS	9
3.1 Designated Sites	9
3.2 Habitats.....	10
3.3 Badgers.....	12
3.4 Bats.....	12
3.5 Breeding Birds.....	13
3.6 Dormice.....	13
3.7 Great Crested Newts and other amphibians	13
3.8 Reptiles	14
3.9 Other notable species	14
3.10 Survey Limitations.....	14
4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES	14
4.1 Designated Sites	14
4.2 Habitats.....	14
4.3 Badgers.....	14
4.4 Bats.....	15
4.5 Breeding Birds.....	15
4.6 Dormice.....	15
4.7 Great Crested Newts.....	16
4.8 Reptiles	16
4.9 Other notable species	16
4.10 Enhancement opportunities.....	17



4.11	Conclusions.	17
APPENDIX 1 –Wildlife Legislation and National Planning Policy		18
APPENDIX 2 Reducing impacts of artificial light		23



1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an updated Preliminary Ecological Appraisal of land west of Arundel Road, Angmering, BN16 4ET by the land owner, Marcus Ripley. This report presents the findings of a repeat walkover survey undertaken by Sam Lunn, an associate member of the Chartered Institute for Ecology and Environmental Management (CIEEM) on 4th May 2018. It provides an up to date assessment on the potential for any protected species and/or habitats to be present at the site and provides an assessment of the potential ecological constraints to the proposed development. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EclA) of the proposal are provided. Where appropriate, measures to avoid, mitigate and/or compensate for impacts are outlined.

1.2 Background

The site is located to the west of Arundel Road to the north of Angmering in West Sussex. The central grid reference for the site is TQ 06723 05365.

The site consists of recently cut ephemeral/short perennial vegetation surrounded by boundary hedgerows with trees. The eastern boundary has a line of blackthorn scrub alongside which has created a thicker, high value hedgerow. To the east and north of the site are two parcels of broad-leaved woodland. Pastoral fields and a small industrial estate lie to the west and a small number of residential buildings run along Arundel Road to the south. Figure 1 shows the boundary of the site.

The proposed development is for nine residential buildings including all associated hard and soft landscaping. Figure 2 illustrates the proposed plan.

The site previously the subject of a preliminary ecological appraisal on 22nd July 2015 (also carried out by the Ecology Co-op), which identified the centre of the site to be completely covered in Ephemeral/short perennial vegetation surrounded by boundary hedgerows with trees. Further surveys were conducted for reptiles and bats in August/September 2015 and the east boundary hedgerow was highlighted as being suitable for dormice although further surveys were only recommended for this species if the hedgerow was to be impacted. At the time of the 2015 assessment, the hedgerow was proposed to remain intact.

A single bat activity survey which included the monitoring of a mature ash tree was conducted on the 13th August according to the 2012 Bat Conservation Trust guidelines which identified a commuting route for a small number of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* bats from the north-west corner, along the eastern boundary and into the woodland to the east. No bats were identified emerging from the mature Ash tree.

The reptile survey was conducted between 14th August and 3rd September 2015 and identified a peak count of 7 common lizards which equates to a medium population according to Froglife advice sheet 10.



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red. Images produced courtesy of Google maps (Map data ©2018 Google).



Figure 2. The proposed development for the site on land west of Arundel Road, Angmering. Image produced by Paul J Hewett R.I.B.A Chartered Architect.



1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna and invertebrate species and current nature conservation planning policy is outlined in Appendix 1 of this report.

2 METHODOLOGY

The methodology used for this survey are in accordance with the Guidelines for Preliminary Ecological Assessment (CIEEM 2017)¹.

2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested from the Sussex biodiversity records centre within a radius of 1km of the site.

A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats, dormice) in the wider landscape around the site. The connectivity of the site to these features, buildings, and other semi-natural habitats such as grassland and heathland are also relevant to bats, great crested newts and reptiles.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and EPS licences granted in relation to the survey site.

2.2 Field Survey

A repeat site walkover survey was undertaken on 4th May 2018, to assess whether the habitats recorded within the site in 2015 have significantly changed. A phase 1 map was produced in 2015 however since this site is relatively small scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake a comprehensive Phase 1 Habitat Mapping of the site again. All habitat types contained within the site, together with the dominant botanical species and indicators of important habitat types such as ancient woodland or unimproved grasslands, were simply listed and described.

Habitats and features at the site were evaluated for their potential to support legally protected species. In addition, observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded.

Details of the preliminary survey methods for each legally protected species are given below. Any site specific limitations to the survey, e.g. access constraints or seasonal constraints are set out in Section 3.11.

¹ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



2.3 Badgers

Habitats within the site and surrounding areas were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths, foraging marks, were recorded. The methodology follows that of Harris et al 1989².

2.4 Bats

Bats can use a wide range of features including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy, and loose bark.

Trees and hedgerows were broadly assessed for their potential to support roosting bats and further surveys are recommended as appropriate.

The potential for roosting bats for each feature, or group of features was assessed as either negligible, low, moderate, or high, in accordance with the Bat Conservation Trust Survey Guidelines (Collins, J.(ed.) (2016)³. Any evidence confirming the presence of bats that was found was clearly recorded including photos and samples (e.g. droppings) where appropriate. Further surveys are recommended where necessary.

2.5 Breeding Birds

The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern (Eaton *et al.* 2015)⁴ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981). Further surveys are recommended as appropriate.

2.6 Dormice

The site was broadly assessed for its potential to support hazel dormouse. This included use of on-line mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub and extensive hedgerow networks. Further surveys are recommended as appropriate in accordance with best practice guidance (Bright et al 2006)⁵.

² Harris, S, Cresswell, P. and Jefferies, D. (1989) *Surveying Badgers*. Mammal Society.

³ Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

⁴ Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, Leigh., Musgrove, A., Noble, D., Stroud, D., Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108, pp 708-746.

⁵ Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The dormouse conservation handbook 2nd Ed*. English Nature, Peterborough.



2.7 Great Crested Newt

A desk study was undertaken to identify ponds within 500m of the site. Where access permission was granted, or ponds could be viewed from public roads or footpaths, the ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (H.S.I.) (Oldham et al 2000)⁶.

Further surveys are recommended as appropriate, in accordance with best practice guidance (English Nature 2001)⁷.

Any survey or access limitations are clearly set out in Section 3.11.

2.8 Reptiles

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub). The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus* are widespread species that can be found in any of these habitats, whereas smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*, have much more restricted and isolated populations on lowland heathland and sand dunes.

Any existing refuge objects (e.g. logs) were searched for presence of reptiles and any observations of reptiles recorded.

2.9 Other notable species

The site habitats were broadly assessed for their potential to support species of principle importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse, hedgehog, brown hare, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with particular attention paid to features such as standing dead-wood, wet flushes, bare earth banks and botanically rich areas.

3 BASELINE CONDITIONS

3.1 Designated Sites

There are no designated sites within the zone of influence from the site and therefore sites designated for nature conservation are unlikely to be a consideration for the proposed development. The woodland parcels to the east and north are listed as 'deciduous woodland Priority Habitat'.

⁶ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

⁷ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

[illegible]

3.2 Habitats

The boundary hedgerows remain the same as recorded in 2015 with all hedgerows identified as species poor and dominated by blackthorn *Prunus spinosa*. The east boundary hedgerow next to Arundel road still has the highest ecological value with the line of blackthorn scrub running inside the hedgerow thicker than in 2015.



Figure 3. Whole of site comprised of recently cut ephemeral/short perennial vegetation.



Figure 4. East boundary hedgerow with trees with blackthorn scrub in front and adjacent woodland behind.



Figure 5. West boundary hedgerow.

3.3 Badgers

No signs of any badger activity were seen during the survey assessment, though there are habitats of value for this species within the site and surrounding landscape. It is likely that if any setts were situated within 30m of the site boundary, then some evidence of badger activity would have been observed.

Records of badgers are not provided by the records centre, due to the sensitive nature of this information.

3.4 Bats

The mature Ash in the northwest corner identified in 2015 is still present and has potential to support roosting bats. There are no buildings or other structures anywhere upon the site that might support roosting bats. The boundary hedgerows and short perennial vegetation across the site still have potential to support foraging and commuting bats particularly with the adjacent woodland to the east in close proximity.

The previous bat activity survey in August 2015 identified four species of bat; common pipistrelle, soprano pipistrelle, common noctule *Nyctalus noctule* and *Myotis* sp. A commuting route from the northwest corner to the woodland to the east was identified being used by common and soprano pipistrelles. No bats were identified emerging from the Mature ash tree.

The Sussex biodiversity record centre provided 11 bat records in the search area comprising 3 identified



species within the search area and 3 species identified to genus level; common pipistrelle *Pipistrellus pipistrellus* – 3 records, soprano pipistrelle *Pipistrellus pygmaeus* – 1 record, brown long-eared bat *Plecotus auritus* – 2 records, *Chiroptera* 1 record, Long-eared sp *Plecotus* 2 records and *Pipistrellus* sp. 2 records. The closest of these was a soprano bat record approximately 370m from the site, dated 2001.

3.5 Breeding Birds

All of the scrub and boundary hedgerows have the potential to support a variety of common nesting birds. It is unlikely that the site supports any notable ground-nesting birds and none were observed during the survey.

The Sussex Biodiversity Record Centre provided numerous bird records for the search area concerning a total of 130 species. Most of these species are relatively common and widespread, but the list includes 28 species of principle importance for conservation (S41 NERC Act 2007), and 20 species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, 36 species are red listed on the Birds of Conservation Concern

A high proportion of the records are non-breeding visitors or occasional visitors to habitats not relevant to the application site. However the following S41 species could potentially breed on the site: dunnoek *Prunella modularis*, house sparrow *Passer domesticus*, starling *Sturnus vulgaris* and song thrush *Turdus philomelos*.”

3.6 Dormice

The majority of the site comprised of recently cut ephemeral/short perennial vegetation has negligible potential to support dormice, however the boundary hedgerows and in particular the east boundary does have potential to provide some nesting and foraging habitat for this species. The adjacent woodland parcels to the east and north have high potential to support a population of dormice and during this 2018 survey it was noted that the woodland canopy and the tree canopy of the eastern boundary do connect over the road creating a bridge and allowing potential movement from the woodland into the boundary hedgerows.

The Sussex biological record centre provided 1 dormouse record in the search area approximately 1km from the boundary of the site.

3.7 Great Crested Newts and other amphibians

There are no ponds contained by the site or within 500m of the site. Great crested newts and other amphibians are therefore highly unlikely to be present.

The Sussex biological record centre provided 11 amphibian records in the search area. This included 2 records for smooth newt *Lissotriton vulgaris*, 1 record for palmate newt *Lissotriton helvetica*, 3 records for common frog *Rana temporaria* and 5 records for common toad *Bufo bufo*. No records for great crested newt *Triturus cristatus* were identified. The closest of these was a common toad record



approximately 500m from the boundary of the site, dated 1992.

3.8 Reptiles

The floral composition within the site has not changed although it has been recently cut short with new spring growth starting to come through. The potential for reptiles to be present remains and the previous survey between August and September 2015 identified a medium population of common lizard *Zootoca vivipara*.

The Sussex biological record centre provided 8 reptile records - 7 of which were grass snake *Natrix natrix* and 1 adder *Vipera berus* in the search area. The closest of these was around 1km from the boundary of the site, dated 2001.

3.9 Other notable species

The boundary hedgerows have potential to support foraging hedgehogs particularly with the adjacent woodland to the east and the north in close proximity. The proposed site is unlikely to support any other notable species such as brown hare and harvest mouse.

3.10 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Designated Sites

The site is outside the zone of influence from all designated sites and, based on this and the small scale of the development, there are no identified mechanisms of impact on designated sites as a result of the proposed development.

4.2 Habitats

The boundary hedgerows, in particular the east boundary hedgerow, are the habitat with the highest ecological value and should be retained and enhanced where possible.

4.3 Badgers

No signs of badger activity were identified during the assessment and no badger setts are situated on or near to the proposed construction zone. No further mitigation for badgers is advised, however if any



signs of digging by large animals is identified on or near to the site prior to construction, then an ecologist should be contacted for advice.

4.4 Bats

In accordance with the current 2016 Bat Conservation Trust (BCT) guidelines, the overall potential for the mature Ash tree to support bats is rated as low and no further survey effort is required to determine the importance of this tree to bats. The Ash tree was surveyed in 2015 during the bat activity survey that was undertaken and no emergence by bats was observed. Similar static monitoring of this tree by a surveyor can be undertaken during the recommended bat activity survey outlined below.

The boundary hedgerows and short perennial habitat within the site are likely to be used by foraging and commuting bats as part of a wider resource across the landscape. A single bat activity survey was carried out in August 2015 in accordance with the 2012 BCT guidelines.

Bat activity surveys are recommended to allow a better understanding of the importance of the site to bats and potential impacts of the development proposals on the existing bat population using the site. In accordance with more recent 2016 BCT survey guidelines, this should include a minimum of three walked transect surveys and three static logger assessments spread across the active season (April to mid-October).

The north and eastern boundaries have already been identified as commuting routes for pipistrelle bats in 2015 and it is important that these hedgerows are retained and improved where possible to strengthen the habitat being used by bats.

It is also important that the potential for disturbance from artificial lights is considered. The proposed development should include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 2) including a no-light zone along the north and east boundaries.

4.5 Breeding Birds

All the boundary hedgerows and scrub habitat contained in the site has a high potential to support a variety of common nesting birds. It will be essential for any future development to consider the nesting bird season and any vegetation removal should be timed outside of the nesting bird season (typically 1st March to 31st August), unless features are first searched by a suitably qualified ecologist and no active nests are found.

The boundary hedgerows, in particular the west and north hedgerows, have the potential to be strengthened through native planting of trees and shrubs and as a result will provide a net benefit to nesting and foraging birds.

4.6 Dormice

The majority of the site, consisting of short perennial vegetation has negligible potential to support a



dormouse population. However, the boundary hedgerows, in particular the east boundary hedgerow and scrub have some potential to support dormice and are connected to the woodland to the east via the tree canopy.

The proposed development will only directly impact this species if any of the hedgerows are to be removed. There are still potential conflicts through the impacts from noise, artificial light and the introduction of domestic cats to the area. The development will require detailed mitigation to alleviate the potential of these impacts upon dormice, nesting birds and other wildlife to include supplementary planting of thorny species along the hedged boundaries.

As stated in the previous 2015 report, further surveys for this species are only required if any of the hedgerows are proposed to be removed. Currently all hedgerows are being retained and no further surveys are required.

Precautionary mitigation in the form of tree protection fencing should be erected around the hedgerow boundaries to protect them from damage by machinery.

As dormice are nocturnal, it is important that the potential for disturbance from artificial lights is considered, as for bats (see Appendix 2).

4.7 Great Crested Newts

No further surveys are recommended with respect to great crested newts, as no waterbodies that might support breeding newts have been identified and it is considered extremely unlikely that this species would be found on the site at any time.

4.8 Reptiles

The habitat remains suitable for reptiles and a peak count of 7 common lizards was found during the 2015 survey identifying a medium population. Reptile survey data can be used for up to 5 years and as a result, no further surveys are required for reptiles, as they habitat has remained the same.

A reptile mitigation strategy will be required by the planning authority. This will ideally involve retaining an area within the site that can be converted into species-rich grassland to provide a high value habitat for reptiles. In the event that an area cannot be retained then a reptile receptor area within 5 miles of the site would need to be located and verified as suitable, before the population of common lizards was translocated to the new site.

4.9 Other notable species

As a result of the hedgerows providing suitable habitat for hedgehogs, mitigation in the form of hedgehog doors cut into the boundary fences of all new residential dwelling rear gardens to prevent fragmentation is advised. Hedgehog doors measure approximately 13cm by 13cm and should be located at the base of a fence. By connecting residential gardens in this way, habitat fragmentation can be reduced.



4.10 Enhancement opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, reptiles and bats. Any planting scheme could include native shrubs and flowering species known to encourage insect diversity and should also be used to thicken the south, west and north boundary hedgerows where possible. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

The developer is also encouraged to consider including integral bat roosting opportunities into the fabric of the new buildings, such as bat tiles and tubes. For example, three Schwegler 1FR tubes could be placed on three of the new residential houses and 4 no. purpose designed bat tiles onto the east-facing pitched roofs of four of the new residential buildings. As best practice, the lighting scheme should be designed to minimize light spill (see Bat Conservation Trust website), around these roosting features and potential commuting routes.

4.11 Conclusions.

This site contains a large area of ephemeral/short perennial habitat surrounded by boundary hedgerows and has been identified as supporting a medium population of common lizard and the potential to support foraging and commuting bats. The boundary hedgerows have the potential to provide some foraging and nesting habitat for dormice but will not be directly impacted by the development.

The most significant potential impact from this development is the loss of the ephemeral habitat which supports a medium population of reptiles and the disturbance from artificial light on the east boundary hedgerow.

It will be important that if this development is to proceed, the following specialist surveys are recommended; three activity surveys across the active season for bats (one per season) and three deployments of static bat loggers to understand the importance of the site for bats.

If any protected species are found during the proposed work, work should be stopped immediately and an ecologist must be contacted immediately for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op, info@ecologyco-op.co.uk, www.ecologyco-op.co.uk, Office: 01798 861800.



APPENDIX 1 –Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’.

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the directive (for example Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austropotamobius pallipes*). Together with ‘Special Areas of Conservation’ (SPAs), designated under the Birds Directive, SACs form a network across Europe of protected areas known as the ‘Natura 2000 sites’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Muscardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2010 (the “Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites receive the highest level of protection under this regulation which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects on the integrity of the site are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to;

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb wild animals of such species;
- Deliberately take or destroy their eggs (where relevant);
- Damage or destroy a *breeding or resting place* of such an animal;
- Possess, control, sell or exchange any live or dead animal or plant, of such species;
- Deliberately pick, collect, cut, uproot or destroy a wild plant of such species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for



specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- A licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e)).
- A licence can be granted if “there are no satisfactory alternatives” to the proposed action.
- A licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended.

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.
- Disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrrium w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).

Natural Environment and Rural Communities (NERC) Act (2006)



The NERC Act (2006) created the statutory nature conservation body Natural England, and places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Protection of Badgers Act (1992)

The Badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a Badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting badgers between the end of November and the start of July.

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2012) sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

The NPPF states that the wider benefits of an ecosystem should be recognised, and the presence of a protected species is a material consideration for a development proposal (Circular 06/2005, 2005).

In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- Minimising impacts on existing biodiversity and habitats,
- Providing net gains in biodiversity and habitats, wherever possible,
- establishing coherent ecological networks that are more resilient to current and future pressures.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK's response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government's response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for



protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade. Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK's leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the 'Red', 'Amber' and 'Green' lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every 5 years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2015 (Eaton et al, 2015), which provides an up to date assessment of the conservation status of birds in the UK.

References

Protection of Badgers Act (1992). HMSO London. Available at: <http://www.legislation.gov.uk/ukpga/1992/51/contents>

Circular 06/2005 (2005). *Government Circular: Biodiversity and geological conservation – statutory obligations and their impact within the planning system*. Office of the Deputy Prime Minister, London. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf

Council Directive 79/409/EEC on the Conservation of Wild Birds ("the Birds Directive"). Available at: <http://jncc.defra.gov.uk/page-1373>

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the "Habitats Directive"). Available at: <http://jncc.defra.gov.uk/page-1374>

The Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations). Available at: <http://jncc.defra.gov.uk/page-1379>

Countryside and Rights of Way (CROW) Act (2000). HMSO London. Available at: <http://www.legislation.gov.uk/ukpga/2000/37/contents>

Defra (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. Available at: www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services.

Defra (2013) Progress Update. Available at: www.gov.uk/government/publications/biodiversity-2020-simple-guide-and-progress-update-july-2013.

Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. Available at: British Birds 108 • December 2015 • 708–746 <https://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf>

Natural Environment and Rural Communities (NERC) Act (2006). HMSO London. Available at: http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf



National Planning Policy Framework (NPPF) (2012) Department for Communities and Local Government. Available at:

www.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf

Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at:

<http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 Reducing impacts of artificial light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust⁸ should be considered while designing the lighting scheme. This includes the following measures:

Do not:

- provide excessive lighting. Use only the minimum amount of light needed for the task.
- directly illuminate bat roosts or important areas for nesting birds

Avoid:

- installing lighting in ecologically sensitive areas such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.
- using reflective surfaces under lights.

Do:

- consider employing a competent lighting designer who will apply the principals of providing the right light, in the right place, at the right time and controlled by the right system.
- minimise the spread of light to at, or near horizontal and ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required.
- consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures.
- consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- use temporary close-boarded fencing until vegetation matures, to shield sensitive areas from lighting.
- limit the times that lights are on to provide some dark periods. The task being lit often varies, for example roads are less used after 23.00hrs and car parks are empty. A lighting designer can vary the lighting levels as the use of the area changes reducing lighting levels or perhaps even switching installations off after certain times. This use of adaptive lighting can tailor the installation to suit human health and safety as well as wildlife needs.

⁸ Bat Conservation Trust (2014) Artificial Lighting and Wildlife - Interim Guidance: Recommendations to help minimise the impact artificial lighting. Available at: http://www.bats.org.uk/pages/bats_and_lighting.html



Further reading:

Buglife (2011) *A review of the impact of artificial light on invertebrates*.

Royal Commission on Environmental Pollution (2009) *Artificial light in the environment*. HMSO, London.

[REDACTED]

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available

[REDACTED]

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light* GN01:2011. Available

[REDACTED]

End.
