



ENVIRONMENTAL CONSULTANTS

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

Tel: 01798 861 800 - E-Mail: info@ecologyco-op.co.uk - www.ecologyco-op.co.uk

Preliminary Ecological Appraisal and Phase 1 Habitat Survey

Rev 01

Land at Orchard Business Park, North End Road, Yapton

Author: Emma Baker BSc (Hons) MSc

Reviewed by: Paul Whitby BSc (Hons), MCIEEM, CEcol

4th June 2018

Project No: 2697

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 Crayfern Homes to undertake an Extended Phase 1 Habitat Survey at Orchard Business Park. A site walkover survey visit was carried out on the 21st February 2018, to map the habitat types and evaluate the site for its potential 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 development of 10 new residential properties on the site.
2. This survey was undertaken by Emma Baker BSc (Hons) MSc and Jess Burkitt BSc (Hons), Grad CIEEM.
3. The site is situated in front of Orchard Business Park, which is located in the village of Yapton, West Sussex. The land is currently unused, except for shipping containers in the far north-east corner and parking for the business park along the eastern boundary. The site supports closely-mown amenity grassland, with areas of bare ground. The site is bordered by a metal security fence and intact cherry laurel and cypress hedges. To the north, west and east of the site there are a number of arable fields, and to the south is a large residential area.
4. While no further species-specific surveys are recommended for this site, vegetation clearance, such as the removal of the cherry laurel hedge should be timed outside of the nesting bird season (1st March – 31st August) unless hand searches by a suitably qualified ecologist confirm the absence of active nests.
5. The proposed development should also include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).
6. The amenity grassland areas which will be included within the construction zones must be maintained below a height of 5cm to prevent suitable reptile habitat from establishing.
7. To improve the ecological value of the site, the landscaping plan could incorporate a variety of native trees to create greater habitat for a variety of birds and invertebrates. As it is planned for the cherry laurel hedge on the western boundary to be replaced, this could be replaced with a native hedge.

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 Phase 1 Habitat Survey.....	7
2.3 Badgers.....	8
2.4 Bats.....	8
2.5 Breeding Birds.....	8
2.6 Dormice.....	9
2.7 Great Crested Newt.....	9
2.8 Reptiles	9
2.9 Riparian wildlife	9
2.10 Other notable species	10
3 BASELINE CONDITIONS	10
3.1 Designated Sites	10
3.2 Phase 1 Habitats.....	11
Figure 8. Rubble pile and old bonfire in the north-western corner of the site.	14
.....	16
3.3 Badgers.....	17
3.4 Bats.....	17
3.5 Breeding Birds.....	17
3.6 Dormice.....	17
3.7 Great Crested Newts and other amphibians	18
3.8 Reptiles	18
3.9 Riparian wildlife	18
3.10 Invasive non-native species	18
3.11 Other notable species	19
3.12 Survey Limitations.....	19
4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES	19
4.1 Designated sites.....	19
4.2 Habitats.....	19
4.3 Badgers.....	19
4.4 Bats.....	20
4.5 Breeding Birds.....	20



4.6	Dormice.....	20
4.7	Great Crested Newts.....	20
4.8	Reptiles.....	20
4.9	Designated Sites	20
4.10	Enhancement opportunities.....	21
4.11	Conclusions.	21
APPENDIX 1 –Wildlife Legislation and National Planning Policy		23
APPENDIX 2 Reducing impacts of artificial light		28



1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an Extended Phase 1 Habitat Survey of Orchard Business Park, North End Road, Yapton, West Sussex, BN18 0GA by Crayfern Homes. This report presents the findings of a walkover survey undertaken by Emma Baker BSc (Hons) MSc and Jess Burkitt BSc (Hons), GradCIEEM on the 21st of February 2018. It provides details 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, which will include the construction of 10 new residential properties and a parking barn on the site. Recommendations for further surveys that are likely to be required to inform a planning application and any required 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 in the village of Yapton, south-west of Arundel in West Sussex. The central grid reference for the site is SU978037.

This is a small site which measures 0.4Ha in area, and predominantly comprises closely-mown amenity grassland, which contains a number of areas of bare ground, and a fire/rubble pile. In the north-eastern corner of the site are six large shipping containers and along part of the eastern boundary there is parking for the business park. The western boundary is bordered by an intact cherry laurel *Prunus laurocerasus* hedge, which runs parallel with North End Road (B2132), and the southern boundary of the site is bordered by the access road for the business park. The south and south-western boundary is bordered by a large metal security fence. The northern border comprises an intact cypress hedge *Cypressus sp.* and between this hedge and the amenity grassland is another access road, which is unused. Figure 1 shows the boundary of the site.

The proposed development includes the construction of 10 new houses and a parking barn, as well as upgrading the unused existing access to the site along the northern border. Figure 2 shows the development plans for the site.



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).

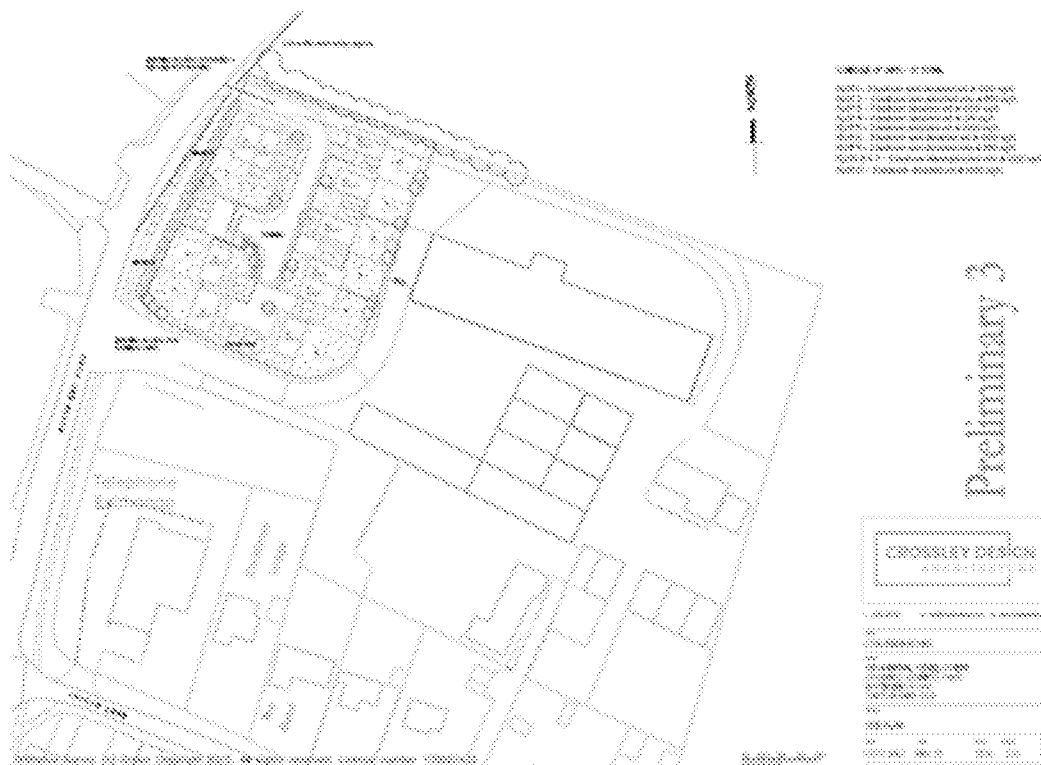


Figure 2. Site plan for the development, with the site boundaries highlighted in red.



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 Appraisal (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 (SxBRC) within a radius of 2km 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 Phase 1 Habitat Survey

A site walkover survey was undertaken on 21st February 2018 during which the habitats contained within the site were described and evaluated in accordance with standard Phase 1 Habitat Survey Methodology². The dominant species and indicators of important habitat types such as ancient woodland or unimproved grasslands, were recorded.

A phase 1 habitat survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of Phase 1 survey is to provide, relatively rapidly, a record of the vegetation and wildlife habitats present over large areas of countryside. The habitat classification is based principally on vegetation, augmented by reference to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat.

Data is gathered through a site walk-over survey and use of on-line aerial photography to broadly

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

² JNCC (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit*. Joint Nature Conservation Committee, Peterborough.



categorise the habitats present using the JNCC Phase 1 classifications. The results are presented as a map showing the distribution of habitat categories across the site. Target notes are used to describe specific features of biodiversity interest and record indicator species where appropriate. In addition to this, notable habitats, such as local and national Biodiversity Action Plan habitats are highlighted.

The Phase 1 Survey methodology is a recognised tool for initial scoping of potential ecological constraints and identifying potential impacts as part of the planning application process.

As part of the 'Extended' Phase 1 Habitat Survey, the site features were evaluated for their potential to support legally protected species and 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.

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.

Any limitations to the survey for badgers are set out in Section 3.11.

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, buildings, and other structures 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

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



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.

2.7 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 3.12.

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.

2.9 Riparian wildlife

Any watercourses identified during the desk study or field survey were assessed for their suitability to support otter, water vole and American mink.

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.

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.



2.10 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 specific 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

Within 2km of the site, no statutory or non-statutory designated sites were identified, but the site is within 2km of several SSSI Impact Risk Zones.

There are no granted EPS licenses for mitigation projects within 1km of the site boundaries, but the closest EPS license to the site concerns a bat license from 2016 for the destruction of a resting place of a Common pipistrelle *Pipistrellus pipistrellus* 2.7km from the site.



Figure 3. Designated sites within a radius of 2km of the application site. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

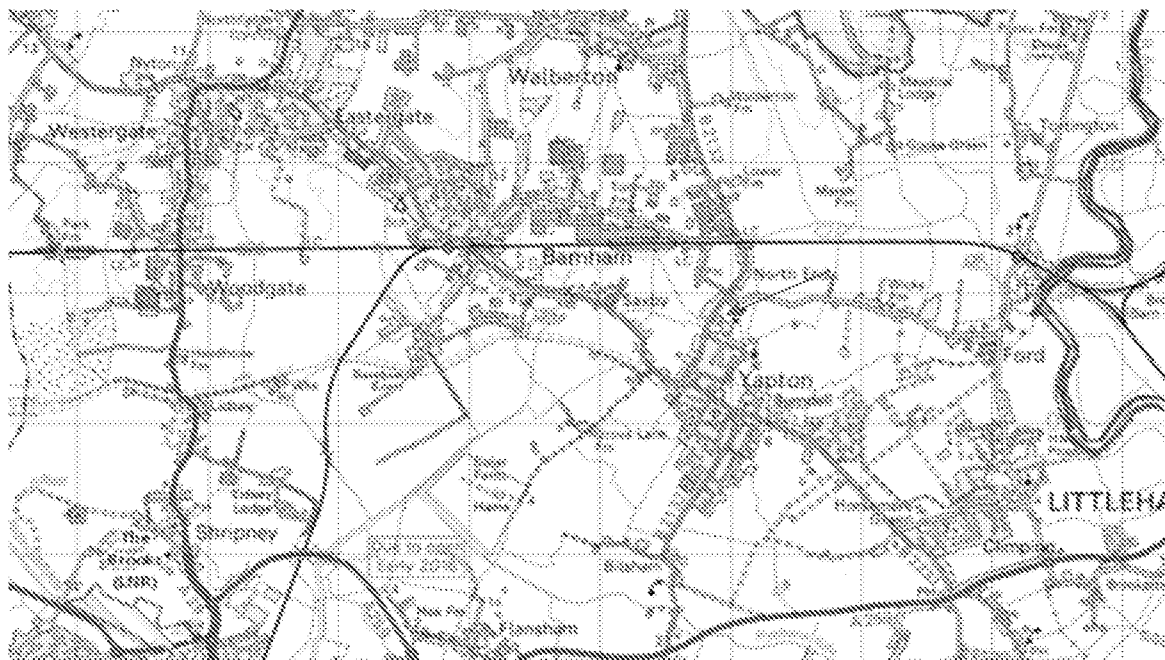


Figure 4. EPS licenses within a radius of 1km of the application site. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Phase 1 Habitats

The majority of the site comprises closely mown amenity grassland. Within this are multiple areas of bare ground (see Figure 7) as well as a rubble pile and an old bonfire in the north-west corner (see Figure 8). On the eastern boundary, there are six shipping containers (see Figure 9) and a strip of bare ground, which is used as parking for the business park (see Figure 7). It is bordered to the north by an intact cypress hedge *Cypressus sp.* (see Figure 10) and to the west by an intact cherry laurel hedge *Prunus laurocerasus* (see Figure 11), which continues a quarter of the way along the southern border (see Figure 12). Surrounding the cherry laurel hedge is a large green security fence (see Figure 12). Between the amenity grassland and the cypress hedge, there is a second access road (see Figure 10), which appears unused and is inaccessible from the main road, because of the cherry laurel hedge. There are arable fields to the north-west and north-east of the site, and to the south, there is an extensive residential area.

Table 2 below lists the Phase 1 Habitat categories found at the site, with target notes on specific features of interest and the general species composition. Note that detailed information on buildings and ponds with respect to bats and great crested newts are presented in the following sections. The Phase 1 Habitat Map for the site and key to the standard mapping symbols used are presented in Figure 4 and 5.

**Table 2.** The Phase 1 habitats contained within the site.

Habitat type	JNCC Code	Area(Ha)/ Length (meters)	Target note including general species composition
Cultivated/disturbed land - Amenity grassland	J1.2	0.34	Much of the site is made up of closely mown amenity grassland which is species-poor, and comprised of: moss <i>Bryophyta sp.</i> , daisy <i>Bellis perennis</i> , creeping buttercup <i>Ranunculus repens</i> , common sorrel <i>Rumex acetosa</i> , dandelion <i>Taraxacum officinale</i> and ribwort plantain <i>Plantago lanceolata</i> .
Bare ground	J4	0.043	On the northern boundary of the site, between the amenity grassland and the intact cypress hedge <i>Cypressus sp.</i> , there is secondary access to the site via a dirt track. This currently cannot be used as the cherry laurel hedge covers the entrance. On the eastern boundary of the site, adjacent to the shipping containers is a narrow strip of bare ground used as parking for the business park.
Intact hedge - species-poor	J2.1.2	118m	Bordering the north of the site is an intact Cypress hedge <i>Cypressus sp.</i> , and underneath this, a small portion of buddleja <i>Buddleja davidii</i> . Along the western boundary and a quarter of the way along the southern boundary is an intact cherry laurel <i>Prunus laurocerasus</i> hedge. Underneath both of these intact hedgerows is: bramble <i>Rubus fruticosus</i> , cleavers <i>Galium aparine</i> , common nettle <i>Urtica dioica</i> , ground ivy <i>Glechoma hederacea</i> , docks <i>Rumex obtusifolius</i> and some patches of bare ground.
Fence	J2.4	95m	Running the west and south-western boundary, behind the cherry laurel <i>Prunus laurocerasus</i> hedge and is a large green metal security fence.

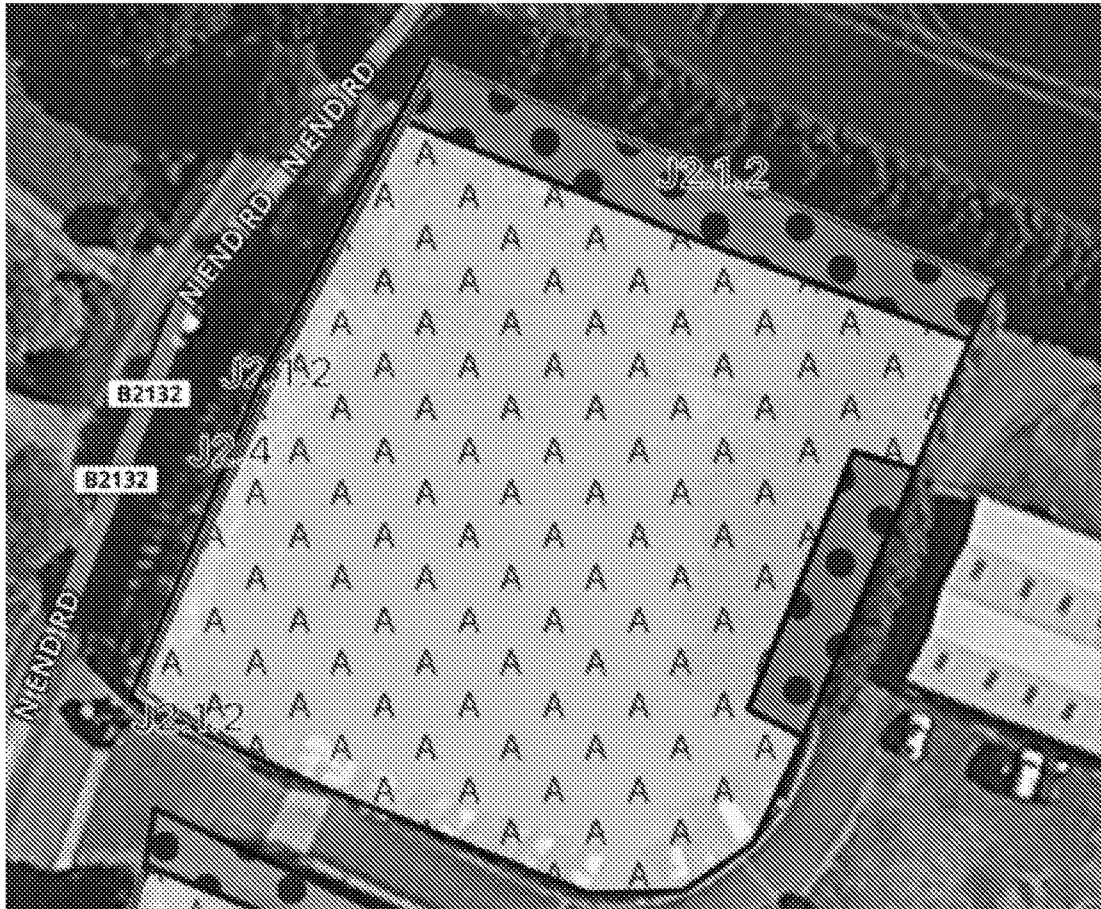


Figure 5. Phase 1 map of the site.

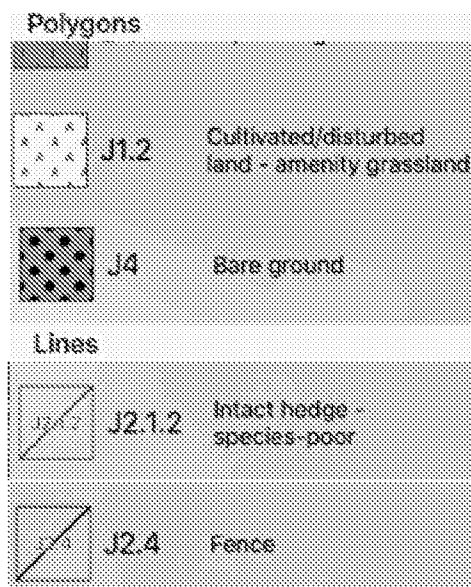


Figure 6. Key for Phase 1 habitat map for Orchard Business Park.



Figure 7. View to east of closely-mown amenity grassland with areas of bare ground and parking area.



Figure 8. Rubble pile and old bonfire in the north-western corner of the site.



Figure 9. North-eastern corner of the site with the six shipping containers.



Figure 10. Intact cypress hedge running the length of the northern boundary and in front, the unused access road.



Figure 11. Intact cherry laurel hedge along the western boundary.



Figure 12. Intact cherry laurel hedge on south-western boundary and metal security fence.



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

There are no buildings present on the site and the trees on the site have no visible potential to support bats. As closely-mown amenity grassland and bare ground make up the majority of the site and subsequently foraging potential for bats at the site is low. However, the intact cypress hedge along the northern boundary may be used as a commuting route as it is connected to suitable habitat in the wider landscape.

The Sussex Biodiversity Records Centre (SxBRC) provided 22 bat records in the search area comprising 10 identified species. This included: serotine *Eptesicus serotinus* – 2 records, common pipistrelle *Pipistrellus pipistrellu* – 5 records, soprano pipistrelle *Pipistrellus pygmaeus* – 1 record, Nathusius's pipistrelle *Pipistrellus nathusii* – 1 record, a long-eared bat sp. *Plecotus sp.* – 1 record, Natterer's bat *Myotis natteri* – 1 record, Noctule bat *Nyctalus noctula* – 1 record, Barbastelle *Barbastella barbastellus* – 7 records, and an unspecified bat species *Chiroptera sp.* – 2 records. The closest of these was a field record which included Noctule *Nyctalus noctula*, Natterer's *Myotis natteri* bat and a Pippistrelle sp. *Pippistrellus sp.* approximately 694m from the site, dated 2000-2010.

3.5 Breeding Birds

All of the scrub, saplings, semi-mature and occasional large mature trees have the potential to support a variety of common nesting birds.

SxBRC provided numerous bird records for the search area concerning a total of 166 species. Most of these species are relatively common and widespread, but the list includes 32 species of principle importance for conservation (S41 NERC Act 2007), and 33 species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, 14 species are red listed on the Birds of Conservation Concern.

A high proportion of the records are non-breeding visitors or occasional visitors to the adjacent coastline and not relevant to the application site. However, within 207m of the site, records were returned for 9 house sparrows *Passer domesticus* (S41) in 2011, which may be likely to use the intact hedgerows present on the site.

3.6 Dormice

The hedgerows present on the site represent low value habitat for dormice and the site has little connectivity to the wider landscape, especially woodland, as it is surrounded by residential areas and



arable fields. The site has very low foraging potential and therefore it is highly unlikely that dormice will be present on the site.

While no records of this species were provided by SxBRC, this species is known to be under-recorded and could occur in any suitable habitat.

3.7 Great Crested Newts and other amphibians

One pond was identified 485m from the proposed site. There are areas of suitable habitat immediately surrounding the identified pond, providing suitable cover and foraging potential including arable fields, hedgerows and hedgerows. The site itself is well-managed and tightly-mown, with multiple areas of bare ground, and no scrub, meaning that it provides little suitable habitat or foraging value. Great crested newts and other amphibians are therefore highly unlikely to be present at the site.

SxBRC provided 44 amphibian records in the search area. This included 7 records for great crested newt *Triturus cristatus*, 12 records for smooth newt *Lissotriton vulgaris*, 7 records for palmate newt *Lissotriton helvetica*, 11 records for common frog *Rana temporaria* and 6 records for common toad *Bufo bufo*. The closest of these was 460m from the boundary of the site, dated 04/05/2002 and was a record for several great crested newt *Triturus cristatus* adults and the presence of ova. However, during the desk-based study, searching aerial imagery for this pond returned imagery of roads and no waterbodies. As the record is nearly 16 years old, it is likely the pond no longer exists.

3.8 Reptiles

The site contains no suitable habitat for reptiles, as it comprises close-mown amenity grassland and a high proportion of bare ground and hardstanding.

SxBRC provided 96 reptile records in the search area. There were 45 records of slow worm *Anguis fragilis*, 15 of Grass snake *Natrix natrix*, 1 Adder *Vipera berus* and 35 for Common lizard *Zootoca vivipara*. The closest of these was for the presence of 26 slow worms at 613m from the boundary of the site, dated between the 30/08/2010-17/09/2010.

3.9 Riparian wildlife

There are no watercourses passing through or within 500m of the site boundaries.

SxBRC provided 11 records of water vole in the search area. The closest of these was at 1km from the boundary of the site, dated 19/5/2016.

3.10 Invasive non-native species

During the survey, the non-native cherry laurel was identified within the hedgerows of the proposed site. Whilst this is not a Schedule 9 plant, it can become invasive.



SxBRC provided 2 records of Giant hogweed *Heracleum mantegazzianum* and 7 records of Japanese knotweed *Fallopia japonica* in the search area. The closest of these was a record of Japanese knotweed *Fallopia japonica*, which was 1.8km from the boundary of the site, dated 21/08/1998.

3.11 Other notable species

SxBRC returned 39 records for West European hedgehog *Erinaceus europaeus*, 3 records for brown hare *Lepus europeaeus* and 1 for harvest mouse *Micromys minutus*. There were also 8 records for stag beetle *Lucanus cervus*. The closest of these records was for 1 West European hedgehog *Erinaceus europaeus* found in October 2017, 561m from the site.

3.12 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

There are no designated sites within 2km of the site and given 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 proposed development will see a loss of amenity grassland, cherry laurel hedgerow and bare ground. The cypress hedge, which may be used by nesting birds or commuting bats will be retained. Therefore, there will be no loss of high value habitat as a result of the proposed development. All of the identified habitats at the site represent both low biodiversity value and low significance habitats for wildlife.

4.3 Badgers

No signs of badger activity were identified during the assessment and no badger setts are situated on or near of 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

There are no trees or buildings on the site which could support roosting bats. The foraging potential of the site is also low, though the cypress hedge may be used as a commuting route for bats.

As the site may be used by foraging and commuting bats, it is 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 3).

4.5 Breeding Birds

All the hedgerow habitat contained in the site has 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 and/or building demolition 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.

4.6 Dormice

The proposed site lacks suitable dormice habitat and there are no parcels of suitable woodland within the surrounding landscape that could support a population of dormice. SxBRC did not identify any records for dormice within 2km of the proposed site. Therefore, it is highly unlikely that dormice would be identified within the site at any time. As such, no further surveys are recommended in this instance.

4.7 Great Crested Newts

One pond was identified 485m from the proposed development site. However, the terrestrial habitat within the proposed site is of low value for foraging and commuting great crested newts and it is considered highly unlikely that this species would be found within the proposed site at any time.

4.8 Reptiles

The tightly-mown amenity grassland within the proposed construction zone offers little or no cover for foraging and commuting reptiles. Therefore, it is highly unlikely that reptiles would be identified within the proposed development site at any time. It is important that the grassland is maintained to a height of below 5cm to prevent suitable reptile habitat becoming established.

4.9 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.



4.10 Enhancement opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme could include native shrub species and flowering species known to encourage insect diversity. 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 landscaping plan could incorporate a variety of native trees to create greater habitat for a variety of birds and invertebrates. The site would benefit from native shrub planting especially where the cherry laurel hedgerow is to be removed. Species including hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, alder *Alnus glutinosa*, English oak *Quercus robur* and hazel *Corylus avellana* provide a great variety and an increased food source for a variety of species. It is recommended that at least 20 native trees and shrubs are planted with tree guard protection across the site and further, only native hedging should be considered for all garden boundaries to include a composition of 50% hawthorn, with the remaining tree mixture to include blackthorn *Prunus spinosa*, wild privet *Ligustrum vulgare*, dogwood *Cornus sanguinea*, guelder rose *Viburnum opulus*, field maple *Acer campestre* and spindle *Euonymus europaeus*.

Within the property designs, new opportunities can be created for declining birds, invertebrates and bats that can not only help to halt the decline in Britain's wildlife, but also provides a great social interest for future residents at the properties. A group of four Vivara Pro Cambridge bricks (or a similar product) could be installed close to each other at a height above 4 metres on one of the new properties in a sheltered location. These bricks can be built into the structure of the property and do not require maintenance. Similarly, a sparrow terrace could be installed at one of the new buildings to provide nesting opportunities for these declining birds.

An insect tower could be installed on the face of one of the properties facing a new hedge of other native vegetated boundary. Four Schwegler 2FE wall mounted bat shelters, low profile woodstone bat boxes or similar structures that are either built into the structure of the properties or fitted externally (to the preference of the developer) can also be installed on properties built close to newly planted boundaries to create new bat foraging habitats.

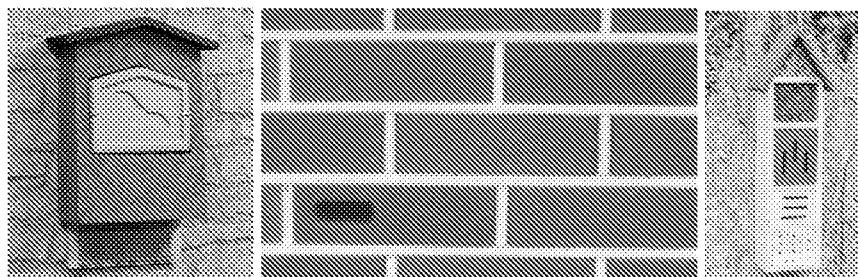


Figure 13. Examples of the woodstone bat box, swift brick and insect tower.

4.11 Conclusions.

This site predominantly contains closely-mown amenity grassland and species-poor hedges, as well as hard standing and bare ground. It has the potential to support some breeding birds and commuting bats may use the cypress hedge along the northern boundary of the site to commute to connected habitats.



No further surveys are recommended for this site, however vegetation clearance, such as the removal of the cherry laurel hedge should be timed outside of the nesting bird season (1st March – 31st August) unless hand searches by a suitably qualified ecologist confirm the absence of active nests. The proposed development should also include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).

The amenity grassland areas which will be included within the construction zones must be maintained below a height of 5cm to prevent suitable reptile habitat from establishing.

As the site currently has a fairly low ecological value, by landscaping with native trees and native hedging, the development has the potential to enhance the site for biodiversity. Enhancement recommendations that should be considered for this site are provided in section 4.10.

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

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-





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 2017 (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.
Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) *Ecological Consequences of Artificial Night Lighting*. Island Press.
ISBN 9781559631297.

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available
at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available
at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light*
GN01:2011. Available at: <https://www.thelip.org.uk/resources/free-resources/>

End.
