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Combined Preliminary Ecological Appraisal and Bat Scoping Report

Site Name

Orchard Farm, Scaynes Hill

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Client

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This report has been prepared by Alice Motola, an Assistant Ecologist at The Ecology Co-op. She has a bachelor's degree in Environmental Sciences, a master's degree in Nature Sciences and a 1-year MSc in Environmental Forestry.

About the Reviewer

This report has been reviewed by Paul Whitby, who is a Principal ecologist with 18 years' experience. He holds protected species survey licenses for great crested newts, bats and dormice and has extensive experience in ecological impact assessment. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and as a chartered ecologist, he is bound by their code of professional conduct.



Report Summary

Purpose	The Ecology Co-op has been commissioned to undertake a Combined Preliminary Ecological Appraisal (PEA) and Bat Scoping Assessment of land at Orchard Farm, Nash Lane, Scaynes Hill, Haywards Heath, RH17 7NJ, by Andrew Smith from SDP Developers, further to a proposal to convert the existing old equestrian barn building to a new 1 storey residential building. This report presents the findings of a walkover survey undertaken by Paul Whitby a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), a Natural England Level 2 – CL19 Bat Survey Class Licence holder and a FISC Level 4 accredited surveyor on the 4 th of June 2024.
Context	The wider site measures approximately 0.4ha and is situated on the north-eastern outskirts of Scaynes Hill, Haywards Heath. The site is situated in a semi-rural location, surrounded by farmland and parcels of woodland. The site mainly comprises a field of other neutral grassland, mature trees bordering Nash Lane, old barn and stables buildings and a sand school. The full address for the site is the following: Orchard Farm, Nash Lane, Scaynes Hill, Haywards Heath, RH17 7NJ.
Key findings	There are four statutory designated sites and two Local Wildlife Sites within 2km of the site, however the small scale of the development proposal is extremely unlikely to lead to any negative effects upon these sites given their proximity. The site consists of the following main (UKHab) habitats: g3c – other neutral grassland: main field u1c – artificial unvegetated, unsealed surface – sand school u1b5 – buildings: the barn and stables buildings Bat Scoping - Overall, the bat roost suitability at this site is assessed as 'negligible', given the absence of features with potential for bats. However, the surrounding woodland parcels have potential to provide valuable foraging and commuting habitat for bats.
Recommendations	Given the discovery of 1 confirmed active dove bird nest in the small barn which will be converted according to the proposed development project into a new residential building, the following mitigation measures will have to be implemented: - the development works must take place outside of the nesting bird season (avoiding March 1st-31st August inclusive) unless the absence of active nests has been confirmed by an ecologist. - To compensate for the loss of nesting bird habitat, a minimum of 4 dove bird boxes should be installed at the site. These should be installed on trees at a height of at least 3m and should have a clear flight path to the entrance.
Are further surveys required?	No, however precautionary mitigation for bats, breeding birds and reptiles has been prescribed.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a Combined Preliminary Ecological Appraisal (PEA) and Bat Scoping Assessment of land at Orchard Farm, Nash Lane, Scaynes Hill, Haywards Heath, RH17 7NJ, by Andrew Smith from SDP Developers, further to a proposal to convert the existing old equestrian barn building and associated sand school to a new 1 storey residential building. This report presents the findings of a walkover survey undertaken by Paul Whitby a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), a Natural England Level 2 – CL19 Bat Survey Class Licence holder and a FISC Level 4 accredited surveyor on the 4th of June 2024. It provides details on the potential for any protected/notable species and/or habitats to be present at the site and a simple assessment of the potential ecological constraints and opportunities with regards to the proposed development plan. Importantly, the new site access has already been consented.

This combined PEA and bat scoping report is designed to inform the client and their team (as appropriate) about the initial findings of the site walkover and desk study research in relation to the site proposals, highlighting the key ecological constraints and opportunities, and any further survey requirements. It is not intended for submission in support of a planning application but can be used to inform a future Ecological Impact Assessment (EclA). However, it may be submitted in support of a planning application as evidence of biodiversity net gain.

1.2 Background

The wider site measures approximately 0.4ha and is situated on the north-eastern outskirts of Scaynes Hill, Haywards Heath. The site is situated in a semi-rural location, surrounded by farmland and parcels of woodland.

The site mainly comprises a field of other neutral grassland, mature trees bordering Nash Lane, old barn and stables buildings and a sand school.

The full address for the site is the following: Orchard Farm, Nash Lane, Scaynes Hill, Haywards Heath, RH17 7NJ. Figure 1 shows an aerial view of the site, with the approximate site boundary outlined.

The current planning application proposals include the conversion of the existing old equestrian barn building to a new 1 storey residential building.

The site plan is shown in Figure 2 and the new building plans are shown in Figure 3. As the development is a 'self-build' application, it is understood to be exempt from the requirement to illustrate Biodiversity Net Gain as set out under the exempt developments guidance.



Figure 1. An aerial image showing the location of the site. The approximate development site boundary is outlined in red. Image produced courtesy of Google maps (map data ©2024 Google).

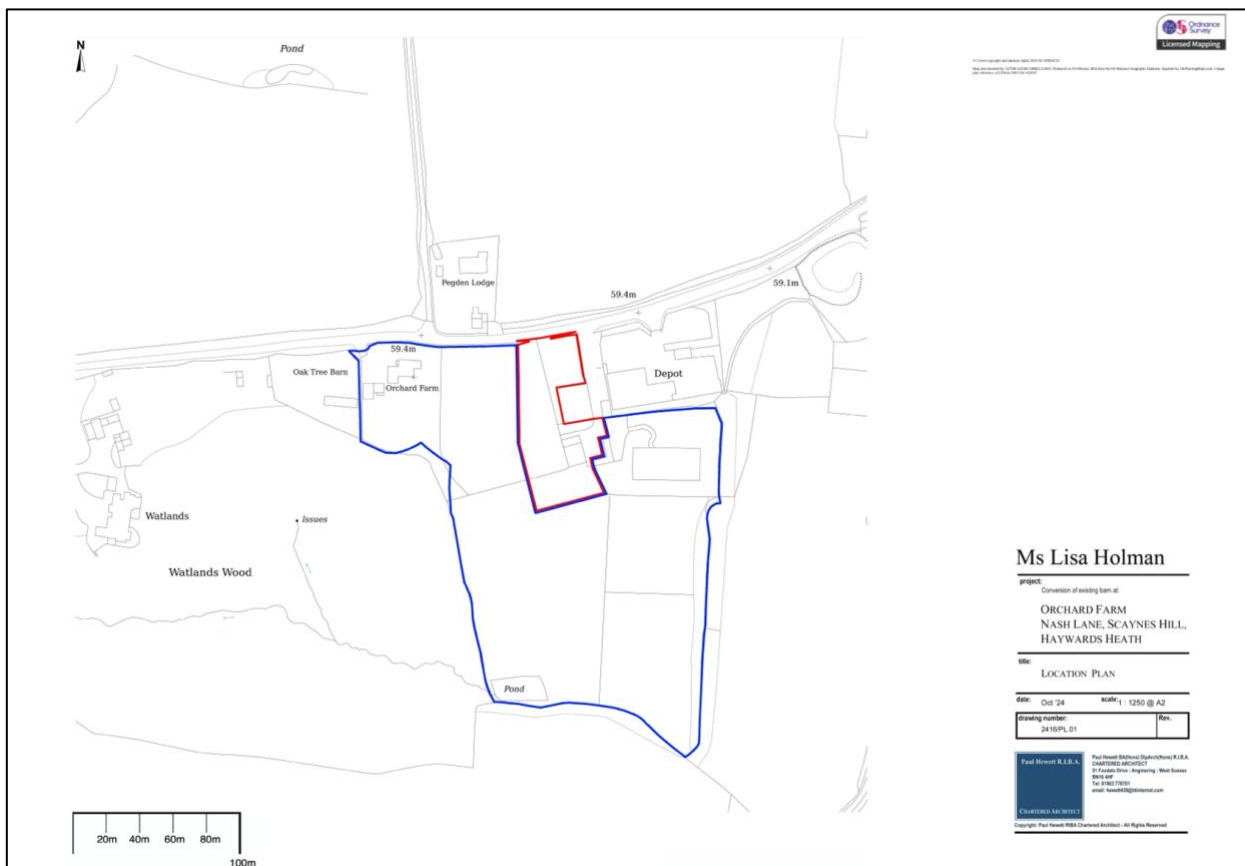


Figure 1. Site plan of the proposed new converted barn building at Nash Lane, Scaynes Hill, Haywards Heath. Image produced by Paul Hewett RIBA Chartered Architect, drawing number 2416/SK.09, dated August 2024.



Figure 2. The existing and proposed plans and elevations to convert the existing barn building to a new 1 storey residential building. Provided by Paul Hewett, dated October 2024.

1.3 Policy and Legislation

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

Where possible, this report provides guidance on how the proposal can be designed to meet the requirements of both local planning policy and the National Planning Policy Framework (NPPF). Details of the NPPF can be found in Appendix 1 and relevant local planning policy by Waverley Borough Council, is provided in Appendix 2.



2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal¹, but also consider the Guidelines for Ecological Report Writing, Second Edition².

2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested on the 2nd of October 2024, from the Sussex Biodiversity Record Centre (SxBRC) 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 *Triturus cristatus*), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats and dormice *Musccardinus avellanarius*) 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 great crested newts, reptiles and a wide variety of notable species of conservation concern.

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

2.2 Field Survey

A site walkover survey was undertaken on the 4th of June 2024, during which the habitats contained within the site were described and evaluated. 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 grassland, have simply been listed and described where identified.

Habitats were mapped and features at the site were evaluated for their potential to support legally protected species and/or species of conservation interest. 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 CIEEM (2017). Guidelines for Ecological Report Writing, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.



2.3 Badger

Badgers *Meles meles* exploit a range of habitats, including gardens, coniferous woodland, deciduous woodland, mixed woodland and arable land. They live in an underground system of tunnels and nesting chambers, known as a sett, with territories ranging from 30ha to 150ha or more.

Habitats within the site and surrounding area were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths, and foraging marks, were recorded.

2.4 Bats

The methodologies used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust³. Where there has been any deviation from the guidelines due to any site-specific constraints or other circumstances, reasoning and justification has been provided. This survey has also considered the Guidelines for Preliminary Ecological Appraisal produced by CIEEM⁴, where the potential for impacts to protected/notable species, other than bats, has been identified.

2.4.1 Roosting Potential

Bats can use a wide range of features for roosting purposes 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.

A detailed building inspection was carried out, looking for potential access points and Potential Roosting Features (PRFs) that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. This included a ground-based external inspection. A high-powered torch was used for the internal and external assessment.

The suitability of each feature, or group of features, to support roosting bats has been assessed as either negligible, low, moderate, or high, in accordance with best practice guidance³ (see Table 1) Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended in accordance with best practice guidance and the surveyor's professional judgement, where evidence of a bat roost or PRFs have been identified that would be adversely impacted by the proposal and where precautionary mitigation alone cannot ensure that bats would not be potentially disturbed or harmed.

Table 1. Guidelines for assessing suitability of structures (buildings and trees etc) to support bat roosts.

Suitability	Description of roosting habitats
None	No habitat features on the structure likely to be used by any roosting bats at any time of year (i.e. a complete absence of crevices/suitable shelter at all ground/underground

³ Collins, J.(ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London..

⁴ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



	levels).
Negligible	A structure that does not have any obvious habitat features that are likely to be used by roosting bats. However, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection and conditions.
Suitability	Description of roosting habitats
Negligible	A structure that does not support any features that could be used by roosting bats.
Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection and conditions.

2.4.2 Hibernation Potential

The structure and its associated features were assessed for their suitability to be used by hibernating bats. The assessment was carried out in accordance with guidelines produced by BatAbility⁵ and the bat survey guidelines produced by the Bat Conservation Trust¹. To determine the potential for features to support hibernating bats the following aspects were considered:

- the suitability of features to support roosting bats or to allow access for roosting bats;
- the temperature and humidity conditions likely to be present within the feature during the winter period and the suitability in this respect for it to be used by bats for hibernating;
- the surrounding habitat, in terms of its potential for use by bats outside of the hibernation period for commuting and/or foraging purposes; and
- the presence of known roosts within the structure, or adjacent structures, or surrounding area during the active season.

The potential for use by hibernating bats for each feature, or group of features was assessed as either

⁵ Middleton. N. (2019). Assessing Sites for Hibernation Potential. A Practical Approach, including a Proposed Method & Supporting Notes. Version' Draft/V2.2019. BatAbility.



negligible, low, moderate, or high, in accordance with best practice. Further surveys are recommended where appropriate, considering the feasibility of a hibernation survey for certain PRFs.

2.4.3 Foraging and Commuting Potential

The habitats surrounding the site and within the wider landscape were broadly assessed for their potential to support foraging and commuting bats, and were categorised as negligible, low, moderate or high potential suitability in line with published guidance³.

2.5 Breeding Birds

Birds can use a wide range of natural and artificial habitats when breeding, including trees, hedgerows, fields, houses and garden sheds.

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 Concern⁶ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981).

2.6 Dormice

Dormice are found in deciduous woodland and hedgerows, feeding on flowers, pollen, fruits, insects and nuts, favouring hazel *Corylus avellana* and honeysuckle for food and as bedding.

The site was broadly assessed for its potential to support dormice. 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 guidance⁷.

2.7 Great Crested Newt

Great crested newts breed in ponds during the spring and spend the rest of the year feeding on invertebrates primarily in semi-natural habitats including woodland, hedgerows, marshes and tussocky grassland. A desk study was undertaken to identify ponds and wet ditches within 500m of the site that might support breeding great crested newts. 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 (HSI) (Oldham et al 2000)⁸. The value of the site for terrestrially foraging great crested newts and any features that might be used by hibernating newts has also been assessed.

⁶ 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.

⁷ Bright, P., Morris, P. and Mitchell-Jones, T. (2006). The dormouse conservation handbook 2nd Ed. English Nature, Peterborough.

⁸ 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.



Further surveys are recommended as appropriate, in accordance with best practice guidance (English Nature 2001)⁹.

2.8 Reptiles

The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* 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.

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).

2.9 Other Notable Species

The site's habitats were broadly assessed for their potential to support species of principal importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, 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 and Granted EPS Licences

There are 4 statutory designated sites within 2km of the site. Details of the designated sites are provided in Table 2, and illustrated in Figure 4 and Figure 5. Two Local Wildlife Sites are situated within 1km of the site. This includes Costells, Henfield and Nashgill Woods situated approximately 600m to the northwest and Scaynes hill Common approximately 700m west.

There is one granted EPS survey licence for great crested newts (GCN), 1.2 km south-west from the site's boundary, in the nearby town of Scaynes Hill, which was undertaken between the months of May and June 2017.

According to MAGiC Maps, the site is surrounded by parcels of Deciduous Woodland, Ancient and Semi-Natural Woodland (the nearest situated approximately 52m from site), and a few smaller parcels of Ancient

⁹ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.



Replanted Woodland. (Figure 5).

Additionally, a traditional orchard (Priority Habitat Inventory), is located 600m south-west from the site.

Table 2. Designated sites with 2km of Orchard Farm.

Site name	Designation	Features listed on citation	Proximity
Statutory Designated Sites			
High Weald	Area of Outstanding Natural Beauty (AONB)	It is a medieval landscape of wooded, rolling hills; studded with sandstone outcrops and a rich patchwork of small fields, scattered farmsteads and ancient routeways. Situated in the heart of rural South-East England, the High Weald National Landscape covers 1,461 square kilometres across the counties of Kent, Sussex and Surrey. It is the fourth-largest National Landscape in England and Wales. High Weald boasts 3,720 species of plants and animals, 12,500 km of hedgerows and field boundaries, over 13,000 ponds with native wildlife, 28% woodland cover – more than any other AONB, 20% of all lowland meadow in England, 227 km ² sites of biodiversity value, 2,570 km of public rights of way, 127,000 inhabitants, 3,500 historic farmsteads, 30 manor houses, castles & gardens.	1.km north of site
Chailey Common	Local Nature Reserve (LNR)	Chailey Common is dominated by heathers, predominantly Ling Heather, but two other native species: Bell and Cross-Leaved Heather can also be found. The heather and gorse provide a habitat for many birds, such as the Stonechat, Yellowhammer and Linnet. The Nightjar is also a regular summer visitor, as is the Hobby. The commons are also home to several of our native reptiles, such as adders and common lizards with many small ponds providing homes for a variety of amphibians.	1.6km south-east of site
Chailey Common – Redhouse Common	Site of Special Scientific Interest (SSSI)	Red House Common is open mosaic heathland intermixed with large areas of bracken stands, surrounded by scrub and woodland strips. Dry heath is dominated by heather <i>Calluna vulgaris</i> and bell-heather <i>Erica cinerea</i> , scrub is made up of <i>Ulex europaeus</i> and bramble. Scattered pine trees, pedunculate oak <i>Quercus robur</i> trees, and plenty of silver birch.	1.7km south-east of site
Scaynes Hill	Site of Special Scientific Interest (SSSI)	The disused quarry and road section at Scaynes Hill exposes yellow sandstone of the Cuckfield Sandstone Member which lies within the Grinstead Clay Formation (upper Hastings Beds Group, Wealden Series). The Cuckfield Sandstone is a lenticular unit of fine grained sandstone which is found throughout much of the outcrop of the Grinstead Clay, dividing the Formation into Lower and Upper Members. The Cuckfield Stone was deposited by a meandering river	1.4km south-east of site



Site name	Designation	Features listed on citation	Proximity
		system and, along the length of its outcrop, displays sedimentary features typical of the Wealden flood plain. At Scaynes Hill the Cuckfield Stone is dominated by trough cross-bedding which is characteristic of a meander channel belt. The sedimentary evidence from the Cuckfield Stone at Scaynes Hill is vital in demonstrating the meandering nature of this river lain sandstone and understanding the wider environment of the Wealden Grinstead Clay Formation.	
Costells, Henfield and Nashgill Woods	Local Wildlife Site	The site is a large area of ancient woodland, located to the north of Scaynes Hill. It is composed of three named woods, but is a fairly uniform area of overgrown Birch coppice with Oak standards, some Hornbeam, Oak and Beech, and occasional Conifers. There are several ponds and streams.	Approx 600m northwest
Scaynes Common	Local Wildlife Site	Scaynes Hill Common is a relatively small site that contains a mosaic of different habitats. The south has an open aspect with areas of lowland dry acid grassland and neutral meadow grassland. The north contains recent secondary woodland of pedunculate oak and birch which is connected to further woodland beyond the site.	Approx 700m west

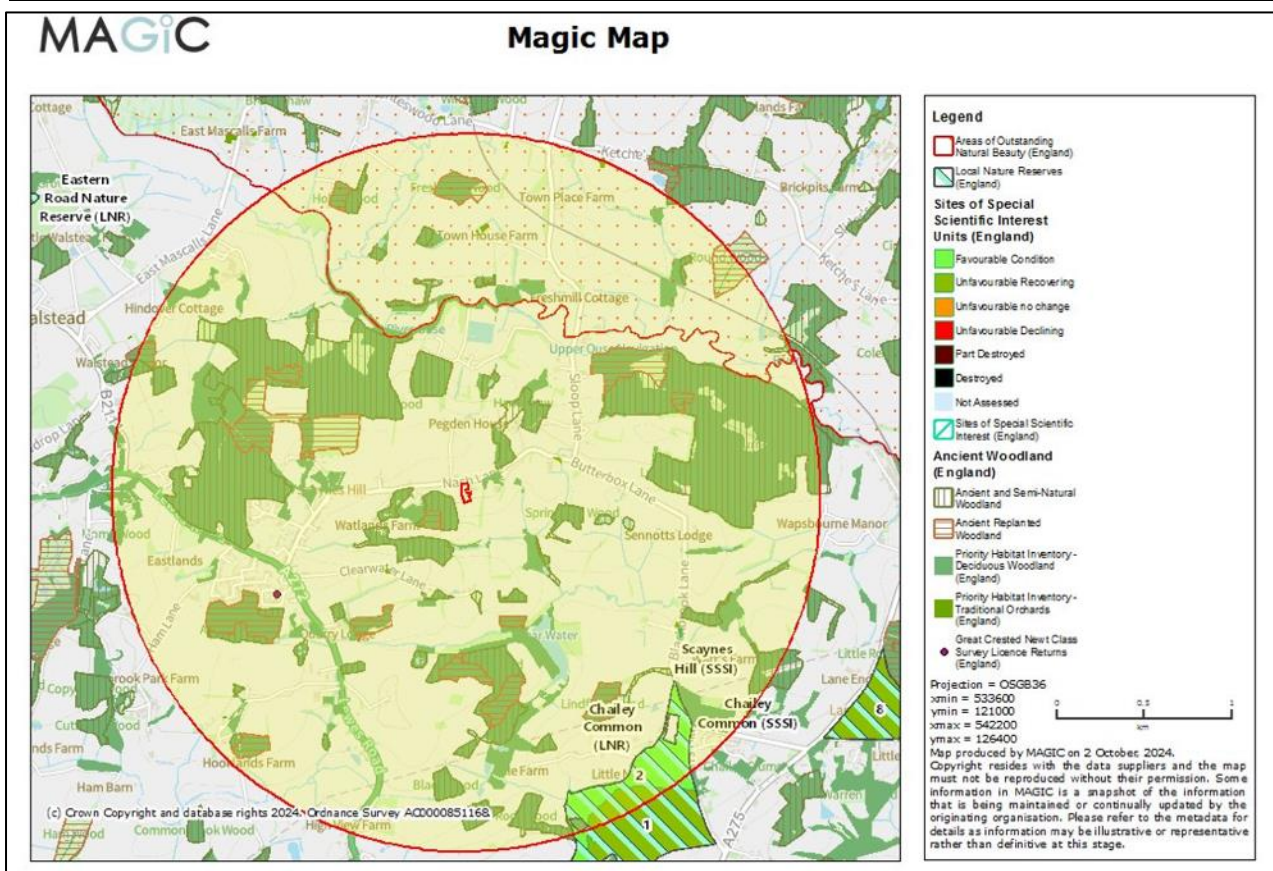


Figure 4. Designated sites within a radius of 2km of the development site. The site boundary is outlined in red. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

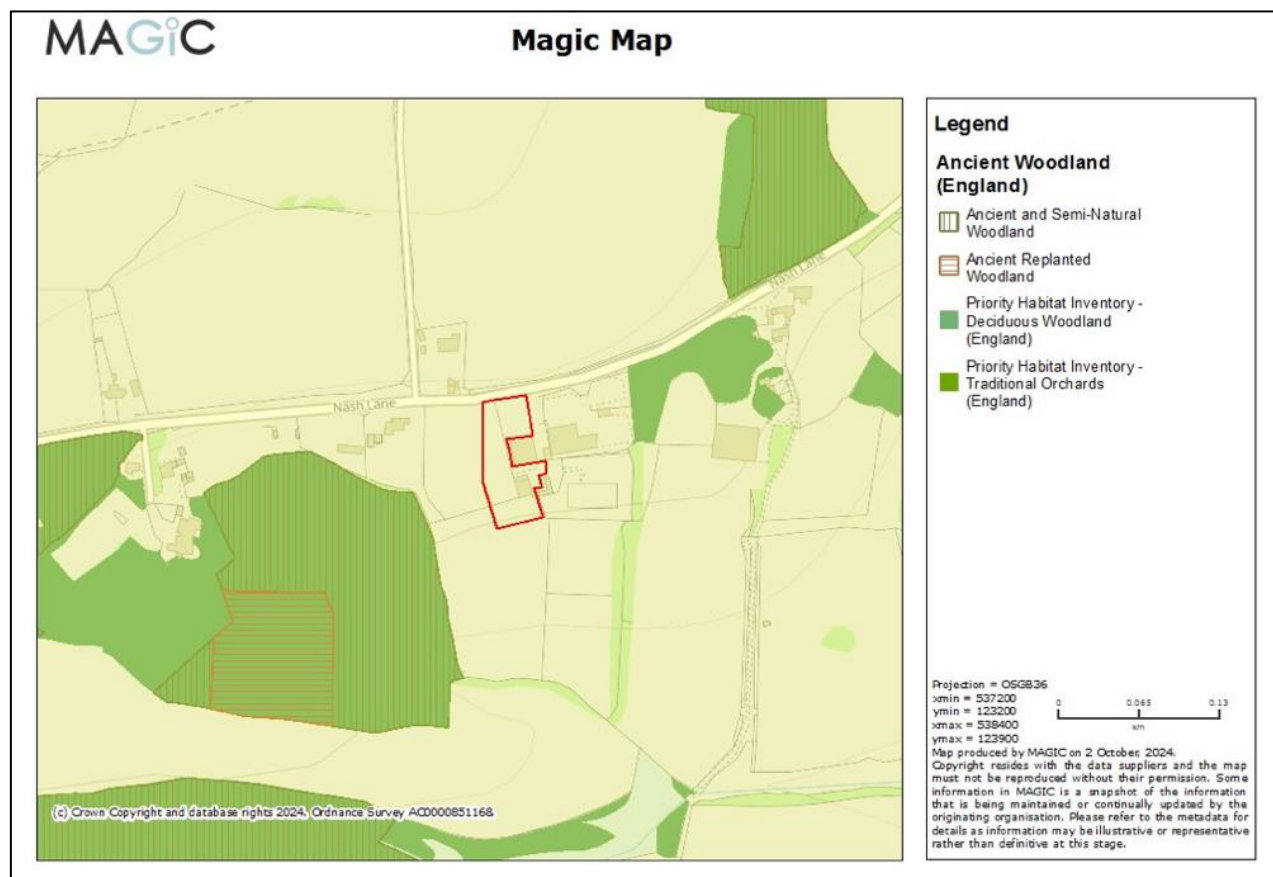


Figure 5. Habitats of importance for nature conservation surrounding the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Habitats

The site consists of the following main (UKHab) habitats:

- **g3c** – other neutral grassland: main field (Photograph 1)
- **u1c** – artificial unvegetated, unsealed surface – sand school (Photograph 2)
- **u1b5** – buildings: the barn and stables buildings (Photographs 3 & Photograph 4)

g3c - The site entrance of the proposed development is situated within a mature tree line bordering Nash Lane. The location of the entrance includes a small mature pedunculate oak (*Quercus robur*), and a semi-mature pedunculate oak, hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) hazel (*Corylus avellana*), hornbeam (*Carpinus betulus*), holly (*Ilex aquifolium*), and ash (*Fraxinus excelsior*) is situated on either side, some with significant die-back. Some ivy (*Hedera helix*) growth, and sapling field maple (*Acer campestre*), were noted. Additionally, brambles (*Rubus fruticosus*) and dog rose (*Rosa canina*) add to the understory, with wood dock (*Rumex sanguineus*) hedge garlic (*Alliaria petiolate*), lords and ladies (*Arum maculatum*) and black Briony (*Dioscorea communis*), and bluebells (*Hyacinthoides non-scripta*) adding to ground cover. The adjacent field is a horse paddock and has a sward structure characteristic for horse grazing, with abundant meadow buttercup (*Ranunculus acris*). Other grassland plants present include: lesser stitchwort (*Stellaria graminea*), birds foot-trefoil (*Lotus corniculatus*), white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*), selfheal (*Prunella vulgaris*), common cats-ear (*Hypochaeris radicata*) bugle (*Ajuga reptans*) common spotted orchid (*Dactylorhiza maculata*) and daisy (*Bellis perennis*), red clover



(*Trifolium pratense*), yarrow (*Achillea millefolium*), leaser trefoil (*Trifolium dubium*). Grasses were difficult to establish in places due to grazing, however clearly visible was crested dogs-tail (*Cynosurus cristatus*), making up the dominant grass, with smooth meadow grass (*Poa pratensis*), and sweet vernal (*Anthoxanthum odoratum*), also frequent.

u1c – The sand school was mostly bare, with some Yorkshire fog (*Holcus lanatus*), lesser trefoil, Canadian fleabane (*Eirgeron canadensis*) and common cats-ear. The sand school borders mainly with brambles, common nettle (*Urtica dioica*), and elder (*Sambucus nigra*), forming the majority of cover.

u1b5 – The buildings are described and illustrated in the bat section 3.4.



Photograph 1: view of the other neutral grassland habitat existing on site.



Photograph 2: view of the sand school present on site.

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 evidence of badger activity would have been observed.

Badger records are not provided, due to the sensitive nature of this information.

3.4 *Bats*

3.4.1 Roost Potential

Small Barn:

Approximately 11x4m in area. Is timber framed and clad with weatherboarding, with the roof comprising of an overlapping timber board structure. All of the clad walls were single skin and lack suitable crevices. Internally there are no visible crevices around the ridge or within the modern frame. Two dove nests were visible inside, with one nest clearly active. No evidence of droppings on stored items inside (mostly hay and tarpaulins). (Photograph 3)

Large barn:



Approx 12x11m in area and is also a timber framed and clad structure. One dove's nest visible and one active swallow nest and one old nest cup visible. The barn is open on the eastern side. Timber sarking is visible across the roof, with a corrugated chrysotile covering on top. No suitable roost features were identified internally and no droppings or other evidence was visible. Externally whilst there are gaps in cladding, this is all single skin and therefore lacks a suitable crevice. Lifts in chrysotile sheets could provide access to crevices between sheeting and timber sarking underneath, however this would be a large and draughty gap offering poor roost suitability.

Stables:

In use and in good condition. Corrugated chrysotile pitched roof and shiplap boarding forming the walls. No signs of deterioration or gaps that could be of value for bats. One old swallow nest visible inside. (Photograph 4)

Overall, the bat roost suitability at this site is assessed as 'negligible', given the absence of features with potential for bats. However, the surrounding woodland parcels have potential to provide valuable foraging and commuting habitat for bats.



Photograph 3. A view of the northern and western aspects of the small barn which will be converted in the new development.



Photograph 4. The southern face of the large barn, with single-skin timber cladding on the gable end wall.



Photograph 5: View of the north-west aspect of the stables building, which are to be retained.

The SxBRC record centre provided 11 bat records in the search area comprising three species; Daubenton's *Myotis daubentoni*, common pipistrelle *Pipistrellus pipistrellus* and brown long-eared *Plecotus auritus*. None of the records returned were for the application site and the most notable record was for a long-eared bat maternity roost, situated approximately 1km to the west.



3.5 Breeding Birds

The trees and scrub habitats on site have the potential to support a variety of nesting birds. Evidence of an active swallow *Hirundo rustica* nest was evident within the modern barn, along with an older unused nest cup and a fantail pigeon *Columba sp.* nest was present within both the modern barn and the small barn.

The SxBRC search provided numerous bird records for the search area concerning a total of 34 species. A number of these records were for birds associated with waterbodies or wetland habitats, including mallard *Anas platyrhynchos*, tufted duck *Aythya fulgula*, Cetti's warbler *Cettia cetti* and kingfisher *Alcedo atthis*, but birds species that could be associated with the site includes kestrel *Falco tinnunculus*, swallow *Hirundo rustica* and grey wagtail *Motacilla cinerea*.

3.6 Dormice

The habitats present on site are assessed as having low potential to support common dormouse. However, the habitats on site are well connected to a network of habitats of value for this species within the wider landscape.

No records for dormice were returned within the search area by SxBRC.

3.7 Great Crested Newts and other Amphibians

There is one granted EPS survey licence for great crested newts (GCN), 1.2 km south-west from the site's boundary, in the nearby town of Scaynes Hill, which was undertaken between the months of May and June 2017.

There are 15 ponds with 500m of the site (Figure 6). The nearest pond is located approximately 130m south from site and is situated directly adjacent to a large parcel of lowland mixed deciduous woodland. This habitat presents the highest value local terrestrial foraging resource for amphibians.

A single great crested newt record was returned by SxBRC, centred on a location approximately 975m to the west and dated from 2016.



Figure 6. Ponds within 500m of the site. The blue dots represent the approximate location of each pond with respect to the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.8 Reptiles

The other neutral grassland habitat within the site has no potential for common reptile species, particularly common lizard and slow worm. The woodland on site provides suitable refuge and hibernation habitat for reptiles.

The SxBRC record search indicates the presence of grass snake (2 records) and common lizard (1 record) within the search area, however the most recent record is from 1998.

3.9 Invasive Non-native Species

No invasive plant species were recorded during the site visit.

Whilst a number of invasive species records were returned within the dataset, none of these records were for the application site or close to its boundary.



3.10 Other Notable Species

The site has potential to support hedgehogs as well as a variety of invertebrates.

3.11 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. Bats will commonly roost in small inaccessible crevices, such as spaces underneath ridge tiles that are impossible to inspect during a scoping assessment. For this reason, habitats and features are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been identified.

4 IMPACT APPRAISAL

4.1 Designated Sites

Given the distance from the identified statutory and non-statutory designated sites and the very small scale of the development proposal, it is highly unlikely that any negative effects would result from the construction or operational phase.

4.2 Habitats

It is understood that the new access to the site has already been consented and therefore the loss of grassland habitat to this proposal has been considered prospectively (as an existing baseline impact). The conversion of the buildings for residential use will not result in any significant habitat impacts.

4.3 Badgers

Badger populations have been rising for several decades and they are now a common and widespread species across most of the UK countryside. Badgers are therefore not currently considered to be of great conservation concern within the UK, although the UK supports a significant proportion of the global population. However, under the Protection of Badgers Act 1992, it is an offence to wilfully kill or injure badgers.

Despite no evidence of a badger sett was visible within the site, their presence cannot be fully discounted.

The impact of the development on badgers is likely to be negligible and no further surveys or compensation measures are recommended.

4.4 Bats

Overall, the bat roost suitability at this site is assessed as ‘negligible’, given the absence of features with potential for bats. However, the surrounding woodland parcels have potential to provide valuable foraging



and commuting habitat for bats. As a precautionary measure, buildings rated as negligible should still be inspected by an ecologist prior to the commencement of construction works and it is recommended that this should include overseeing the lifting of the chrysotile sheeting. In the highly unlikely event that a bat or evidence of bats is found, work would need to cease whilst an appropriate European Protected Species license is obtained.

In line with current guidelines, no further bat emergence surveys are recommended.

The site can be enhanced for roosting bats, with a number of commuting and foraging bat species likely to be present in the surrounding area. It is recommended that a minimum of four artificial bat roosts are incorporated into the development proposals, which can include a mixture of boxes installed on adjacent trees and boxes incorporated into the building design.



Figure 7. Example artificial bat roosts to be installed on trees at the site. From left to right: a PRO UK Build-in WoodStone Bat Box, Beaumaris woodstone box, 1FW hibernation box and improved crevice box. All images produced by NHBS.

4.5 Breeding and Wintering Birds

Given the identification of breeding swallows, replacement nesting opportunities are recommended and the construction phase will need to be considerate of the nesting bird season. The following mitigation and compensation measures must be implemented measures will have to be implemented:

- the development works must commence outside of the nesting bird season (avoiding March 1st-31st August inclusive) unless the absence of active nests has been confirmed by an ecologist.
- To compensate for the loss of nesting bird habitat, a replacement swallow nest cup must be installed into the retained stables, with access into the stables for these birds maintained at all times (such as via a 15cm (minimum) gap in the top stable door. A replacement dove nest box can also be installed onto the wall of the stable building or a nearby tree (see Figure 8). These should be installed at a height of at least 3.5m and should have a clear flight path to the entrance.



Figure 8. Recommended dove bird box.

4.6 Dormice

Despite no evidence of a dormice was visible within the site, their presence cannot be fully discounted.

The impact of the development on dormice is likely to be negligible and no further surveys or compensation measures are recommended.

4.7 Great Crested Newts

The closest pond to the application site is situated approximately 130m to the south and is situated adjacent to woodland habitat, which will act as the greatest draw for terrestrially foraging amphibians. The closest (and only) known record for great crested newts within 1km of the site is situated approximately 975m to the west.

No further surveys for this species are considered necessary considering both the potential for this species to be present and the scale of the development proposals. It is highly unlikely that the development will have impacted great crested newts.

4.8 Reptiles

The construction zone for the conversion is unlikely to impact common reptiles, with the footprint lying largely upon hard standing. The already consented site access, when established will result in the loss of some grazed pasture that has a moderate potential to support common reptiles, though local records are old and



few in number. As a precaution, to mitigate for the risk of direct harm to reptiles, 'reasonable avoidance measures' are recommended as follows:

1. Any materials stored around the sides of the buildings should be removed so that they do not risk acting as a refuge for wildlife.
2. All ground vegetation should be cut slowly and methodically to a height of approximately 80mm on a day when the ambient air temperature is not less than 10 degrees, between March and October (inclusive), to ensure reptiles are active. All cuttings must be gathered in a collector, or be raked and removed following this cut. This will encourage wildlife, including reptiles away from the cut areas.
3. A second cut must then reduce all ground vegetation to ground level to make it unsuitable for wildlife, with cuttings again gathered and collected. The ground vegetation should then either be removed, or kept below a height of 50mm with maintenance cuts.

4.9 Invasive Non-native Species

No invasive plant species were recorded during the site visit, therefore no mitigation measures are necessary and recommended.

4.10 Other Notable Species

The conversion of the barn building is unlikely to have a significant impact on hedgehogs and invertebrates given its small size. Therefore, no further surveys or compensation measures are recommended.

5 CONCLUSIONS

No further surveys are required for protected or notable species based on the findings of the site appraisal and desktop information.

Overall, the bat roost suitability at this site is assessed as 'negligible', given the absence of features with potential for bats. However, the surrounding woodland parcels have potential to provide valuable foraging and commuting habitat for bats and precautionary mitigation has been recommended.

Given the identification of active dove birds nests in the barns that will be converted according to the proposed development, the following mitigation measures will have to be implemented:

- the development works must take place outside of the nesting bird season (avoiding March 1st-31st August inclusive) unless the absence of active nests has been confirmed by an ecologist.
- To compensate for the loss of nesting bird habitat, a minimum of 4 dove bird boxes should be installed at the site. These should be installed on trees at a height of at least 3m and should have a clear flight path to the entrance.

The above mitigation measures for nesting birds and precautionary mitigation for bats and common reptiles should be detailed within a site-specific Mitigation Statement and implemented and a condition to the development. This document can further prescribe detailed site enhancements within the landscaping design, including new native species-rich hedge creation and wildflower meadow establishment.



It is important that no habitat clearance or other site preparation work should be undertaken until planning permission has been granted and all relevant protections for habitats of importance and protected species have been detailed and implemented. Please be advised that any work to remove or modify habitats outside of typical management may undermine a future planning application.

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.



6 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 the 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' (SACs), SPAs 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, as amended (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, now known as National Site Network sites under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, receive the highest level of protection under the Regulations 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' to the conservation objectives 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 *Satyrion 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.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.

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 2023)¹⁰ 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.

Paragraph 185b, states that council plans should “promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)¹¹. 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 five years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2021 (Stanbury et al, 2021), which provides an up to date assessment

¹⁰ HM Government (2023). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/media/64f991c99ee0f2000fb7c001/NPPF_Sept_23.pdf.

¹¹ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



of the conservation status of birds in the UK.

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7 APPENDIX 2 – Mid-Sussex District Council Planning Policy

Mid Sussex District Plan 2014-2031 (March 2018)



Policy Number/Title	Policy Summary
DP38 - Biodiversity	• Protect landscape for biodiversity qualities • Maintain green corridors to act as wildlife corridors Biodiversity will be protected and enhanced by ensuring development: • Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure so there is a net gain in biodiversity including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments • Protects existing biodiversity, so there is no net loss of biodiversity • Unavoidable damage to biodiversity should be offset through enhancements and mitigation measures • Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience • Promotes the restoration, management and expansion of priority habitats in the district • Avoids damage to, protects and enhances the qualifying features of internationally designated sites of importance Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to the wider ecological networks Valued soils will be protected and enhanced, including the best and most versatile agricultural land and development should not contribute to unacceptable levels of soil pollution.



8 APPENDIX 4 – 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 to 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 Trust¹² should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring 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. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower

¹² Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



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;

- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features;
- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted



- Upward light ratio of 0% and good optical control

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End.

