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Ecological Assessment

Hall Farm Grainstore, Bentworth

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Report Summary

1. The Ecology Co-op has been commissioned by Andrew Heaton to undertake a Ecological Assessment at Hall Farm Grainstore. A site walkover survey visit was carried out by Rozel Hopkins, MSci (Hons) and Qualifying member of the Chartered Institute of Ecology and Environmental Management, on 16th September 2022 to evaluate the habitat value of the site and its potential to support EU and UK protected/notable species. A dormouse hazelnut and nest search and repeat tree inspection was also undertaken by Owen Crawshaw, BSc (Hons) and ACIEEM, and Rozel Hopkins, on 5th January 2023. The purpose of this report is to record the findings of the surveys and identify potential ecological constraints and opportunities in relation to a proposal, which will include the construction of a new grain store, cattle barn, shed and weighbridge.
2. The site measures 0.4ha and is situated within the rural outskirts of Bentworth, Hampshire. It comprises an arable field bordered by a section of long and short grassland and an intact species-rich hedgerow with trees to the west. An existing grain store lies adjacent to the site at the north.
3. The proposal will mostly result in the loss of common widespread habitats with low ecological value. However, the removal of a section of species-rich hedgerow, and a number of scattered semi-mature trees should be compensated for the planting of a further species rich hedging with trees. The retained section of hedgerow and trees will need to be protected from root compaction through the installation of barrier fencing outside the Root Protection Areas (RPAs), and permanent and temporary ground protection as required, in accordance with specialist arboricultural advice.
4. The site is within the zone of influence of seven non-statutory designated sites, the closest of which, Collier’s Wood Lane SINC, is located 400m away from the site, However, due to the small scale of the development, there are no identified mechanisms of impact on designated sites as a result of the proposal.
5. A dormouse hazelnut and nest search, carried out on 5th January 2023, found no evidence of dormice and therefore suggests their likely absence within the hedgerow bordering the site. However, as a precautionary measure, prior to the removal of 7m of species-rich hedgerow along the western boundary the hedge must first be subject to a repeat hand search by an ecologist to ensure that no dormouse nests are present. If any dormice are found at this time, work would have to cease until a European Protected Species licence has been obtained so that the work may legally proceed.
6. Precautionary mitigation will also be required for:

 - a. badgers during construction (section 4.3);
 - b. invasive species (buddleia) during site preparation (section 4.8); and
 - c. hedgehogs when clearing any hedgerows (section 4.9).



- 7. Any vegetation clearance should be timed outside the nesting bird period (1st March–31st August) unless a search by a suitably qualified ecologist confirms the absence of any active nests.**

- 8. In line with the National Planning Policy Framework, it is recommended that the site's ecological value should be enhanced. This could be achieved through the provision of a bat box, alongside the proposed native planting, as outlined in section 5 of this report.**

- 9. The proposed development should include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust.**



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an Ecological Assessment (EA) of land at Hall Farm Grainstore by Andrew Heaton. This report presents the findings of a walkover survey, undertaken by Rozel Hopkins, MSci (Hons) and Qualifying member of the Chartered Institute of Ecology and Environmental Management, on 16th September 2022 and a further dormouse hazelnut and nest search, and repeat tree inspection, undertaken by Owen Crawshaw, BSc (Hons) and ACIEEM, and Rozel Hopkins, on 5th January 2023. 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 in relation to the construction of a new grain store, cattle barn, shed and weighbridge. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EclA) of the proposal are provided where necessary, and possible measures to avoid, mitigate and/or compensate for significant adverse effects are summarised. The potential to incorporate ecological enhancement measures as part of the scheme is discussed, in addition to any requirement to achieve biodiversity net gain.

1.2 Background

The site is located at Hall Farm Grainstore, Holt End Lane, Bentworth, GU34 5LF. The central grid reference for the site is SU 66195 38989.

It measures approximately 0.4ha and is situated within the rural outskirts of Bentworth, Hampshire. Arable farmland is present within the wider landscape, with areas of mature woodland and small pockets of low-density housing. Figure 1 shows the boundary of the site.

The proposed development includes the construction of a new grain store, cattle barn, shed and weighbridge as well as creation of new access and hardstanding (shown in Figure 2).

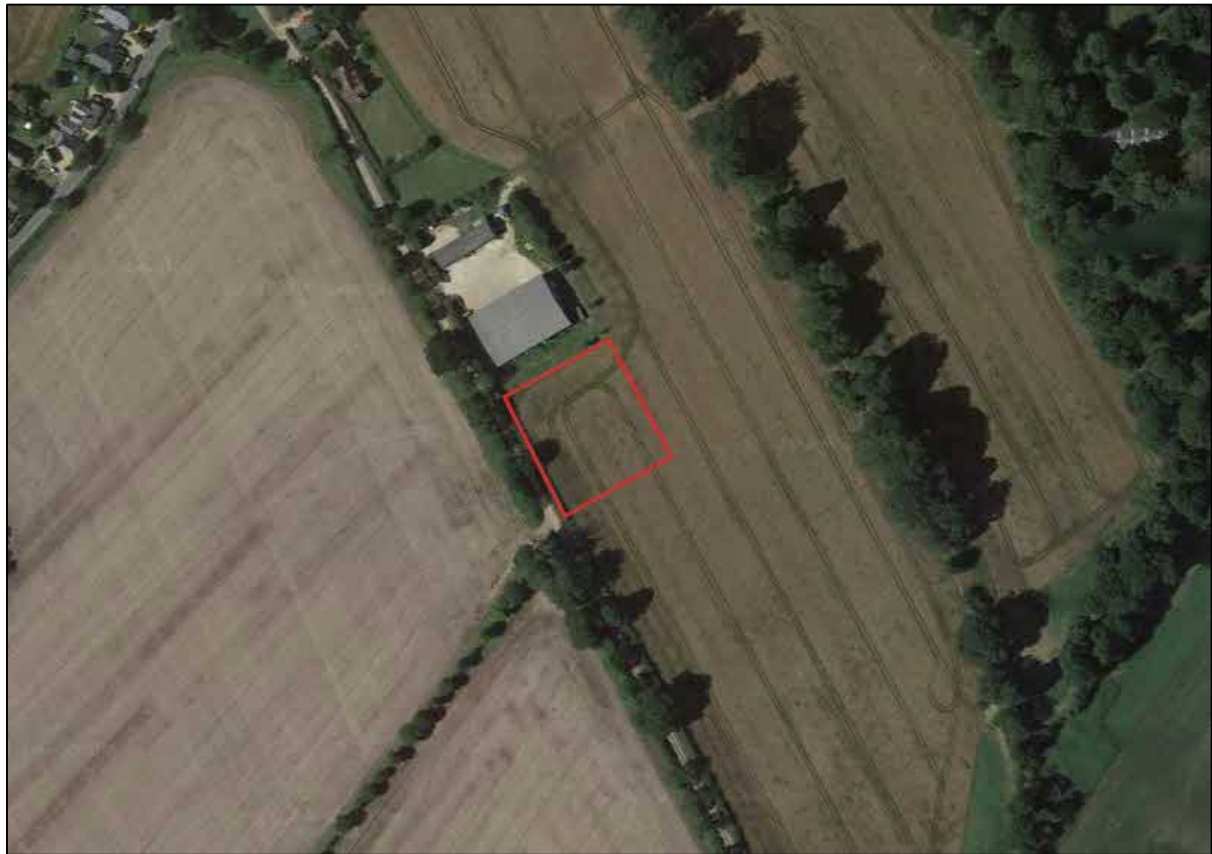


Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red. Image produced courtesy of Google maps (map data ©2024 Google).



Figure 2. The proposed development layout plan for new farm buildings at Hall Farm Grainstore. Plan courtesy of Freeborough & Co. Surveyors Ltd; dated, November 2023 (drawing number HF-CB-01).



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 East Hampshire District 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 obtained from the Hampshire Biodiversity Information Centre (HBIC) within a radius of 1km. An existing data search has been used in this report which has a central radius of Collier's Wood, located approximately 410m south-east of the present application 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 *Muscardinus 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 16th September 2022, during which the habitats contained within the site were described and evaluated. Since this site is relatively small in scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake comprehensive UKHab mapping of the site. All habitat types contained within the site, together with the dominant

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.



botanical species and indicators of important habitat types, such as ancient woodland or unimproved grassland, have simply been listed and described where identified.

Habitats 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.

2.3 Badgers

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

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.

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 negligible, low, moderate, or high, in accordance with best practice. Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate.

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats.

2.4.1 Natural Roost Features – Trees

A detailed ground-based visual inspection of an ash *Fraxinus excelsior* tree to be felled was carried out on 5th January 2023, when the tree was not in leaf and features could be inspected more clearly without obstructions. The tree was categorised for its potential to support roosting bats as shown in Table 1 in accordance with best practice guidance³. A high-powered torch and pair of binoculars was used for the

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



assessment,

Table 1. Characterising potential roost features in trees.

Category	Description
Negligible	A tree with negligible roosting habitat features likely to be used by bats.
Low	A tree of sufficient size to potentially support roosting features, but with none seen from the ground or features identified of limited roosting potential.
Medium	A tree with one or more potential roost sites that could be used by bats due to their size, conditions and surrounding habitat, but unlikely to support a roost of high conservation status such as a maternity or hibernation roost.
High	Trees with one or more potential roost sites that appear suitable for large numbers of bats or use as maternity or hibernation roosts.

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 Concern⁴ 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 *Lonicera periclymenum* 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.

2.6.1 Hazelnut and Nest Search Survey

Due to the small extent of suitable dormouse habitat proposed to be removed by the works, a standard nest-tube survey was not recommended. Therefore, alternatively a search for signs of dormice was undertaken on 5th January 2023 by Owen Crawshaw, BSc (Hons) and ACIEEM, and Rozel Hopkins, MSci (Hons). The search comprised looking for evidence of any dormouse nests and any feeding remains (such as characteristically chewed hazelnuts). A 300m section of hedgerow adjoining the redline boundary was searched, including areas of hedgerow north and south of the proposed 7m section to be removed. In addition, a 300m section of hedgerow lying 10m west of the impacted hedgerow, running parallel along the track to this hedgerow, was also searched. This was because if dormice are present within this parallel hedgerow, they may easily disperse to the adjacent impacted hedgerow. The location of the hedgerows that were searched, is shown in Figure 3.

⁴ Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. British Birds 114, pp 723-747.



The hazelnut search followed guidance in accordance with section 3.2.2 of The Dormouse Conservation Handbook⁵. A systematic search of the hedgerows was conducted, with 100 hazelnuts that had been opened by small rodents collected – 34 and 76 from the western and eastern hedgerow respectively. The hand search was undertaken in a very slow and methodical way, with tools such as secateurs used to help gain safe access to dense areas of vegetation where necessary.



Figure 3. An aerial image showing the location of the site and the two hedgerows surveyed for dormice. The approximate site boundary is outlined in red and the length of hedgerows surveyed are shown in blue. Image produced courtesy of Google maps (map data ©2023 Google).

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)⁶. The value of the site for

⁵ Bright, B., Morris, P., Mitchell-Jones, A.J. and Mitchell-Jones, T (1997) *The Dormouse Conservation Handbook*. English Nature.

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.



terrestrially foraging great crested newts and any features that might be used by hibernating newts has also been assessed.

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 no statutory designated sites within the zone of influence of the site, however four non-statutory designated Sites of Importance for Nature Conservation (SINCs) are located within 1km of the site. These are described in Table 2.

There are no granted EPS licences for mitigation projects within 1km of the site boundary.

Table 2. Non-statutory designated sites.

Site name	Designation	Features listed on citation	Proximity
Collier's Wood Lane	Site of Importance for Nature Conservation (SINC)	A 0.1ha area of ancient semi-natural woodland	400m south-east
Collier's Wood	SINC	A 0.12ha area of ancient semi-natural woodland	450m south-east
Gaston	SINC	A 0.06ha area of woodland that has a significant element of	700m west



Grange Drive Wood		ancient semi-natural woodland	
Gaston Wood	SINC	A 11ha area of ancient semi-natural and replanted woodland	860m south-west

3.2 Habitats

The majority of the site consists of an arable field bordered by an approximately 13m wide bank of grassland and an intact hedgerow to the west. An existing grain store lies close to the site to the north.

The area north of the redline boundary is formed of a 9m wide shortly mown grassy bank with a smaller 4m wide section of longer grassland (approximately 40cm in height) and scattered bramble *Rubus fruticosus* agg. The grassland is dominated by cocksfoot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus* and red fescue *Festuca rubra*, with the following plants also recorded; smaller cat's-tail *Phleum bertolonii*, common nettle *Urtica dioica*, broad-leaved dock *Rumex obtusifolius*, common hogweed *Heracleum sphondylium*, cleavers *Galium aparine*, common dandelion *Taraxacum officinale*, dove's-foot cranesbill *Geranium molle*, chamomile *Matricaria chamomilla*, ground-ivy *Glechoma hederacea*, creeping buttercup *Ranunculus repens*, red clover *Trifolium pratense*, white clover *Trifolium repens*, common ragwort *Jacobaea vulgaris*, selfheal *Prunella vulgaris*, common knotgrass *Polygonum aviculare* fool's parsley *Aethusa cynapium*, black medick *Medicago lupulina*, buddleia *Buddleja davidii*, spotted medick *Medicago arabica* and scarlet pimpernel *Anagallis arvensis*. A dense patch of nettles runs along the north-western corner of the arable field.

An intact species-rich hedgerow lines the western boundary which comprises of blackthorn *Prunus spinosa*, bracken *Pteridium aquilinum*, bramble, hazel *Corylus avellana*, sycamore *Acer pseudoplatanus*, a rose *Rosa* species, hawthorn *Crataegus mongyna*, elder *Sambucus nigra*, black bryony *Dioscorea communis* and field maple *Acer campestre*. Two trees are located within the section of hedgerow in the site – a semi-mature ash *Fraxinus excelsior* and a semi-mature oak *Quercus* species.



Photograph 1a (left) & b (right). Views south-east over the arable field forming the majority of the site. A patch of nettles and the western boundary hedgerow can be seen within the right photograph.



Photograph 2a (left) & b (right). The grassy bank along the northern boundary of the site, with an area of shortly mown grass and longer grass closer to the adjacent grain store.



Photograph 3a (left) & b (right). The species-rich hedgerow along the western boundary of the site, with a small area of grassland located in front.



Photograph 4a (left) & b (right). Left – View north-west of the northern section of the site with the existing grain store adjacent. Right – The nettle bed located in the north-western corner of the site, adjacent to the boundary hedgerow.



Photograph 5a (left) & b (right). Left – View south from the northern corner of the site, showing shortly mown grass and a single ash tree. Right – The informal machinery parking area in the northern corner of the site, comprising of short grass and bare ground.

Although a small section of the site is designated as priority Woodpasture and Parkland habitat (Figure 4), there is no evidence of grazed pasture and/or veteran or ancient trees being present within the site. In addition, within the past 22 years the area designated has been consistently used as arable farmland, as shown on aerial mapping.

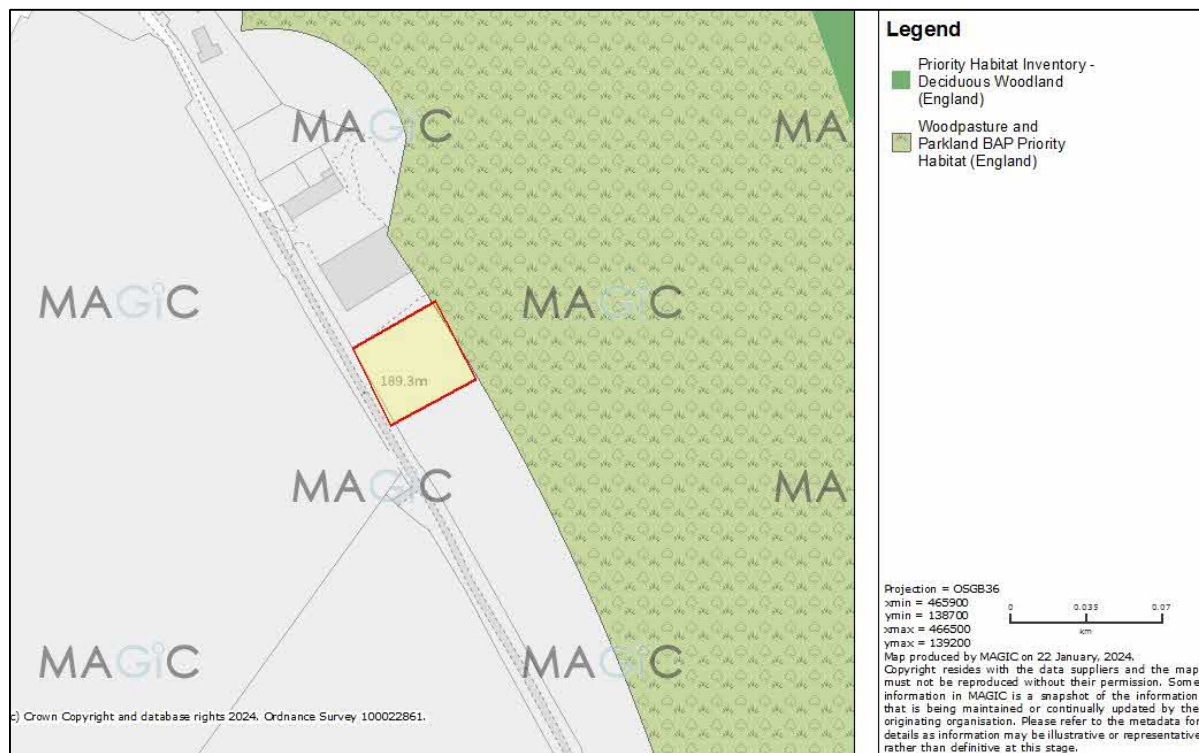
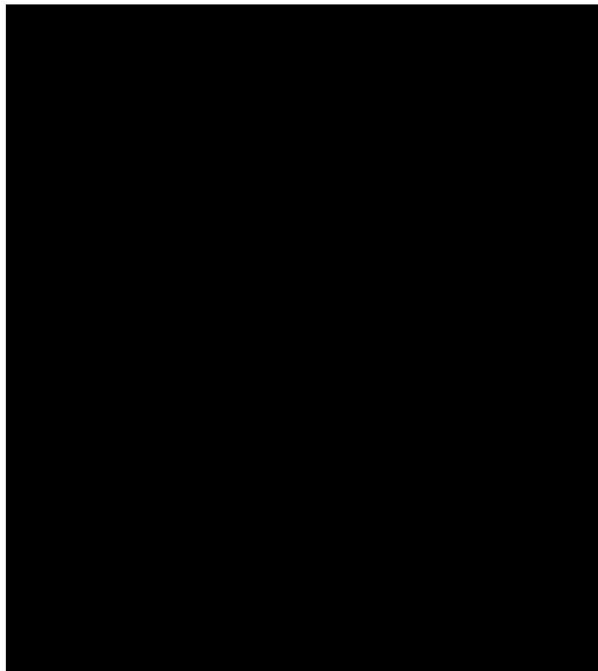
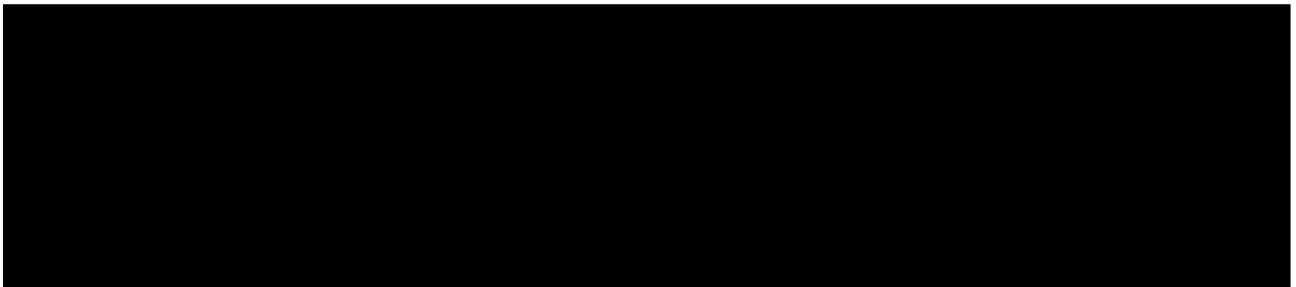


Figure 4. Priority habitat relative to Hall Farm Grainstore (outlined in red). Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).



Figure 5. Aerial image in December 2000, with the approximate site boundary indicated. Image produced courtesy of Google earth (map data ©2022 Google).





3.4 Bats

3.4.1 Site Walkover and Pre-existing Records

No buildings are contained within the site boundaries. However, a semi-mature ash tree within the western boundary is planned to be removed and was identified, during the initial walkover survey on 16th September 2022, to have features potentially suitable for roosting bats. Two cankers were seen on the eastern trunk, located approximately 5m off the ground on the south-eastern face (Photograph 6). At this time, it was not possible to closely inspect the tree and determine whether the cankers were superficial or presented a crevice large enough to support roosting bats. Therefore, the tree was rated as having 'moderate' potential to support roosting bats.



Photograph 6. View of the two cankers on the semi-mature ash tree which have potential to support roosting bats.

The arable farmland that forms much of the site provides poor quality habitat with a likely low invertebrate prey diversity for foraging bats. However, the species-rich western hedgerow could act as a linear commuting feature, connecting the site to suitable habitats within the wider area. In addition, the grassland may have some foraging suitability, although these are small in extent. Overall, the site has low value for bats overall, and may be used by a variety of species as part of a wider resource.

The Hampshire record centre provided twelve bat records in the search area comprising three identified species, eight records for common pipistrelle *Pipistrellus pipistrellus*, one record for noctule *Nyctalus*



noctula, one record for Natterer's bat *Myotis nattereri* plus one record for a pipistrelle species *Pipistrellus* sp. and one unspecified bat record.

3.4.2 Repeat Tree Inspection

A repeat inspection of the two cankers on the ash tree was carried out on 5th January 2023, when the tree was no longer in full leaf and a clearer view of the trunk was possible. Using a high-powered torch, it was possible to observe that both cankers were superficial, not supporting any crevices within them with suitability for roosting bats. No other suitable roosting features were identified on the tree during this inspection. Therefore, the suitability of the tree for roosting bats was downgraded to 'negligible'.

3.5 Breeding Birds

The hedgerow on the site all have the potential to support a variety of common nesting birds. In addition, the existing grain store building supports two bird boxes, one a traditional barn owl *Tyto alba* box and the second likely designed for either a tawny owl *Strix aluco*, kestrel *Falco tinnunculus* or little owl *Athene noctua*. Approximately 15 house sparrows *Passer domesticus* were also seen within the bramble scrub in the north-eastern corner of the site.

HBIC provided numerous bird records for the 1km search area concerning a total of 19 species. Most of these species are relatively common and widespread but the list includes five species of principal importance for conservation (S41 NERC Act 2007) and eight species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, eleven species are red listed on the Birds of Conservation Concern.

A high proportion of the records are visitors to the woodland within the wider landscape and are not relevant to the application site. However, the following red-listed species could potentially breed on the site: starling *Sturnus vulgaris* and song thrush *Turdus philomelos*.

3.6 Dormice

3.6.1 Habitat Suitability and Pre-existing records

The hedgerow bordering the site has suitability for foraging dormice, comprising shrubs and trees such as hazel, bramble, hawthorn, blackthorn, ash, sycamore and oak. This habitat is ecologically well connected to an extensive network of similar hedgerows across the local landscape as well as large pockets of mature and ancient woodland within the wider landscape. This includes another hedge line bordering a field and track immediately west of the site.

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

3.6.2 Survey Results

No dormouse nests, either inactive or active, nor any nuts opened by dormice were found during the hand and nut search. All areas of hedgerow to be directly impacted by the proposals, plus sections of hedgerow adjacent to this area, were able to be accessed during the search and therefore it can be concluded that there is a likely absence of dormice at the time of the survey.



3.7 Great Crested Newts and other Amphibians

There are no ponds contained by the site or identified within 250m of the site, which is the most utilised area of habitat by a great crested newt population from a breeding pond⁷. Great crested newts and other amphibians are therefore highly unlikely to be present at the site.

The Hampshire biodiversity records search returned one common toad record within the 1km search radius, dated to 1999.

3.8 Reptiles

The site is comprised of arable field and shortly mown grassland which is wholly unsuitable for reptiles and therefore they are not considered further within this report.

3.9 Invasive Non-native Species

Buddleia saplings were identified just north of the site boundary. Although not listed on Schedule 9 of the Wildlife and Countryside Act, this is a non-native and invasive species.

The Hampshire biodiversity records search indicates the presence of hollyberry cotoneaster *Cotoneaster bullatus*, variegated yellow archangel *Lamiaeastrum galeobolon subsp. argentatum* and rhododendron *Rhododendron ponticum* within 1km of the central point.

3.10 Other Notable Species

The arable farmland section of the site, which sits within a mosaic of arable fields bounded by hedgerows and treelines, could potentially support brown hare *Lepus europeus*, although none were observed during the site walkover. HBIC returned a single record for this species, located approximately 750m west of the site in Gaston Grange Drive Wood.

The dense bramble scrub and longer grassland has suitability for nesting, foraging and commuting hedgehogs. No records for this species were returned by HBIC.

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. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

⁷ Froglife (2001) *Great Crested Newt Conservation Handbook*, page 10 - https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf



The biodiversity records used for this assessment have a central radius from Collier's Wood, located approximately 410m south-east of the present application site. Therefore, there is a possibility that there may be further protected species records located up to 410m north of the site, something that has been considered when making an assessment of the impacts of the proposal in question.

4 IMPACT APPRAISAL

4.1 Designated Sites

The site is within the zone of influence of seven non-statutory designated sites, the closest of which, Collier's Wood Lane SINIC, is located 400m away from the site. However, due to the small scale of the development, there are no identified mechanisms of impact on designated sites as a result of the proposal.

4.2 Habitats

The proposal will result in the loss of a section of arable field, with smaller areas of short grassland, as well as approximately 7m of species-rich hedgerow. The hedgerow have the most ecological value of these and therefore should be replaced. As new planting is proposed along the south-eastern and north-eastern boundaries of the site which could be used for this purpose, and it is therefore recommended that a native species-rich hedgerow with trees is implemented. The hedgerow should include at least five hedge trees per linear metre and comprise of at least 50% hawthorn or blackthorn. These species provide good hedge structure, maintains consistency with traditional hedges and is also more resistant to foraging horses and deer, making the hedgerow more likely to successfully establish. In addition to this, a mixture of least five or more native woody species selected from the following should be included:

- hazel;
- field maple;
- purging buckthorn *Rhamnus cathartica*;
- spindle *Euonymus europaeus*;
- dogwood *Cornus sanguinea*;
- wild privet *Ligustrum vulgare*;
- hornbeam *Carpinus betulus*;
- guelder rose *Viburnum opulus*;
- wayfaring-tree *Viburnum lantana*; and
- dog rose *Rosa canina*;

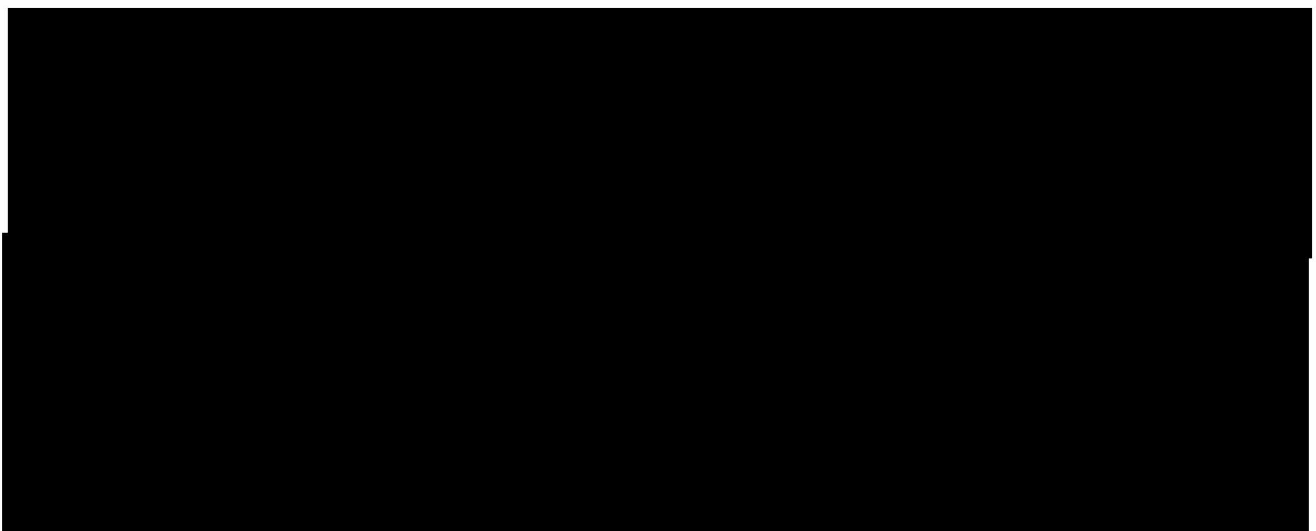
Single trees should be interspaced every 30m within the new hedgerow, with the following species recommended:

- English oak *Quercus robur*;
- field maple;
- rowan *Sorbus aucuparia*;
- hazel;



All native species should be sourced from certified nurseries in the UK, preferably as local to the site as possible, to avoid the spread of disease or pests and encourage genetic diversity in the new planting. Cherry laurel *Prunus laurocerasus* and buddleia *Buddleia davidii* must not be included within the planting scheme as these are invasive. Given the arrival of Ash Dieback *Hymenoscyphus fraxineus* (previously known by the names *Chalara fraxinea* and *Hymenoschyphus pseudoalbidus*), it is strongly recommended that current advice from DEFRA, The Forestry Commission and Woodland Trust is followed regarding the planting of this species⁸. Newly planted saplings and shrubs should be protected with tree guards to avoid damage from deer.

To prevent physical damage during construction to the retained sections of hedgerow and semi-mature trees, features should be protected from root compaction through the installation of barrier fencing outside the Root Protection Areas (RPAs), and permanent and temporary ground protection as required, in accordance with specialist arboricultural advice.



4.4 Bats

Upon a second inspection in winter, the ash tree was rated as having 'negligible' suitability to support roosting bats. Therefore, no further action is required in relation to roosting bats at this site.

However, 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 is likely to require an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).

⁸ Defra, 2013. *Chalara Management Plan*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221051/pb13936-chalara-management-plan-201303.pdf



4.5 Breeding Birds

The bordering hedgerow on site has a high potential to support a variety of common nesting birds. It will be essential for any future development to consider the nesting bird season and any vegetation removal must be timed to avoid of the nesting bird season between 1st March to 31st August inclusive, unless features are first searched by a suitably qualified ecologist and no active nests are found. If an active nest is identified, a minimum exclusion zone for all works within a 5m radius of the nest must be established to protect it from disturbance until the young have fledged.

A barn owl box and a second bird box are also located within the grain store, in close proximity to the proposed construction zone. As barn owls can breed at any time of the year, it is recommended that a pre-commencement check of the boxes is carried out by a licenced ecologist immediately prior to construction works. If chicks are found within the box, construction works would need be designed to avoid any disturbance to the active nest.

4.6 Dormice

The hazelnut and nest search and absence of local dormouse records has suggested a likely absence of dormice within the hedgerow bordering the site. However, suitable habitat is located within the wider area which may support a viable population of dormice who may disperse over time. Therefore, dormice cannot be completely discounted from the hedgerow to be impacted due to its interconnectivity to the wider landscape and there remains a small risk of direct harm to individual dormice during the hedgerow removal works, should they be present at the time.

As a precautionary measure, prior to the removal of 7m of species-rich hedgerow along the western boundary the hedge must first be subject to a repeat hand search by an ecologist, to ensure that no dormouse nests are present. If any dormice are found at this time, work would have to cease until a European Protected Species licence has been obtained so that the work may legally proceed.

As discussed in section 4.2, all retained sections of hedgerows and trees should be protected with barrier fencing to prevent permanent damage and disturbance to these features during construction. In addition, as dormice are nocturnal, it is also important that the potential for disturbance from artificial lights is considered, as for bats (see Appendix 3).

4.7 Invasive Non-native Species

Buddleia is not a Schedule 9 species but is invasive so care should be taken during site preparation to prevent it from spreading.

4.8 Other Notable Species

The site has the potential to support brown hares and the development will result in the loss of suitable habitat for this species. However, the small scale of the proposal and abundance of suitable habitat within the wider landscape means that this loss is not considered to be significant in this instance.



Habitats within the site that have the potential to be used by hedgehogs for foraging, commuting and shelter will be lost during the proposal. Where any suitable habitats for hedgehogs are removed, site preparation must be preceded by a hand search to ensure that, in the event a hedgehog is present, it can be moved safely to suitable habitat within wider site ownership. If any hedgehogs are identified in hibernation (between November and early March usually), then either the area where the hedgehog is found should remain undisturbed or at the discretion of a suitably qualified ecologist, it may be possible to move the animal with the material that it is hibernating to a safe location.

5 OPPORTUNITIES FOR ENHANCEMENT

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme should 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.

It is recommended that an Improved Crevice bat box (Figure 7) should be installed upon the new building or a retained mature tree within the western hedgerow. Please note other suitable boxes are also commercially available. This box should be placed in an open position, at a south or eastern-facing aspect at a height of between 3m and 6m. As best practice, any lighting schemes should be designed to minimize light spill (see Appendix 3), around any bat roosting features and potential commuting routes.



Figure 7. Improved Crevice Bat Box. Image courtesy of NHBS.



6 CONCLUSIONS

Hall Farm Grainstore comprises a section of arable field with smaller areas of long and short grassland, semi semi-mature and sapling ash trees and a small rose shrub and a bordering species-rich hedgerow. The construction of a new grain store, cattle barn, shed and weighbridge as well as creation of new access and hardstanding, as shown in Figure 2, will mostly result in the loss of common widespread habitats with low ecological value. However, the removal of a section of species-rich hedgerow, and a number of scattered semi-mature trees should be compensated for by further native planting, as outlined in section 4.2.

A dormouse hazelnut and nest search has suggested a likely absence of dormice within the hedgerow bordering the site. However, as a precautionary measure, prior to the removal of 7m of species-rich hedgerow along the western boundary, the hedge must first be subject to a repeat hand search by an ecologist to ensure that no dormouse nests are present. If any dormice are found at this time, work would have to cease until a European Protected Species license has been obtained so that the work may legally proceed.

Precautionary mitigation will also be required for:

- [REDACTED]
- commuting and foraging bats when installing any artificial lighting on the site (section 4.4);
- common nesting birds when clearing any hedgerows (section 4.5);
- invasive species (buddleia) during site preparation (section 4.8); and
- hedgehogs when clearing any hedgerows (section 4.9).

The enhancement opportunities identified in section 5 of this document will result in new opportunities for bats and likely beneficial effects for biodiversity at the site should they be implemented in full.

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.



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 *Austroptamobius 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 *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.

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 2021)⁹ sets out the Government's view on how planners

⁹ HM Government (2021). National Planning Policy Framework. Department for Communities and Local Government. Available online at:



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 179b, which states that council policies 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)¹⁰. 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 of the conservation status of birds in the UK.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

¹⁰ 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.



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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 2017 (the Habitats Regulations”). Available at:
<http://jncc.defra.gov.uk/page-1379>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at:
<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

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<http://www.legislation.gov.uk/ukpga/2000/37/contents>

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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.

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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) (2021) Ministry of Housing Communities & Local Government. Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 – East Hampshire District Council Planning Policy

Table 3. Summary of East Hampshire District Council's Local Plan: Joint Core Strategy (June 2014)

Policy number/title	Policy summary
CP21 - Biodiversity	<p>Development proposals must maintain, enhance and protect the District's biodiversity and its surrounding environment. New Development will be required to:</p> <p>Maintain, protect and enhance biodiversity, especially in SPAs, SACs, SSSIs, NNRs, SINC's and LNRs. This should be extended to non-designated sites that are considered of local value to wildlife, such as trees, rivers, river corridors and hedgerows.</p> <p>Contribute towards maintaining a district-wide network of wildlife sites, corridors and stepping-stones between designated sites and other areas of value</p> <p>Ensure that wildlife enhancements are incorporated into the design to achieve a net gain in biodiversity</p> <p>Protect and where possible strengthen populations of protected species</p> <p>Protect and enhance open spaces</p>



APPENDIX 3 – 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 Trust¹¹ 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 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

¹¹ 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/>



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

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.
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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 (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011. Available at: <https://www.theilp.org.uk/resources/free-resources/>

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End.
