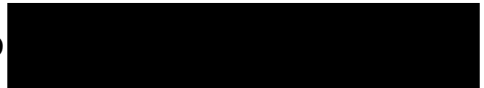




Preliminary Ecological Appraisal

Prepared for



Hinton Farm

Hinton

Berkeley

Gloucestershire

GL13 9HZ

December 2023

Cotswold Environmental Ltd

Registered Office Address: Wateredge, Fostons Ash, The Camp, Stroud, Gloucestershire GL6 7ER



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Methods used to prepare this report, including those carried out in the field followed The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Report Author:	
Report Reviewers:	
Document Number:	

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1 INTRODUCTION

- 1.1 This report provides the results of a Preliminary Ecological Appraisal undertaken on land at Hinton Farm, Hinton, Berkeley, Gloucestershire GL13 9HZ (central Ordnance Survey (OS) Reference SO 68419 03040).
- 1.2 The proposals are described as the erection of an agricultural building in order to extend the existing livestock building. In due course, a planning application will be submitted to Stroud District Council.
- 1.3 The findings included in this report are based on a survey undertaken during November 2023 by Cotswold Environmental Ltd. The purpose of the survey was to undertake an appraisal of the site for its potential ecological value to notable and protected wildlife, and to look for evidence of such species. The survey results provide information to determine the likely ecological impact the proposed development will have on wildlife species, and to inform the level of further survey effort and mitigation required to comply with relevant nature conservation policies and legislation. The evaluation and findings in this report can be used by Stroud District Council in their view of a planning application. Survey results detailed within this report should be considered valid for a period of 12-18 months from the survey date (subject to consultation with the Local Planning Authority and/or Natural England).
- 1.4 The National Planning Policy Framework (NPPF) (July 2021) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity¹. The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.
- 1.5 Hinton Farm is located within Hinton Village, between Sharpness and Purton, 900 metres to the east of the River Severn. The site location is shown in Fig. 1.
- 1.6 All survey and assessment work was completed in accordance with official assessment guidelines² and largely followed that recommended by the Chartered Institute for Ecology and Environmental Management (CIEEM)³ and follows the British Standard Code of Practice⁴.

¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

² Collins J (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edn. Bat Conservation Trust, London.

³ CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.

⁴ British Standards Institution (2013) BS 42020:2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London.

Survey Objectives

- To determine suitability for protected species
- Ascertain evidence of protected species
- Determine potential ecological impacts the proposed development will have on protected species.
- Inform the level of further survey effort that is required.

2 METHODOLOGY

Desk Study

- 2.1 Using freely available resources such as the online MAGIC database, a desk study was undertaken to acquire data in relation to local habitats and Sites of Special Scientific Interest (SSSIs).

Field Study

- 2.2 Ecological consultant Jason Skinner carried out a field visit on Tuesday 28th November 2023.
- 2.3 The field visit involved a walkover using visual encounter survey techniques. The dominant vegetation structure was assessed, allowing habitats on site to be valued for their ecological importance to protected wildlife. Binoculars were also used to scan for features likely to support protected species. All protected species were considered during the assessment and all wildlife species were recorded. The work was completed largely following methodologies set out by the Chartered Institute for Ecology and Environmental Management (CIEEM) and British Standard Code of Practice.

Species

- 2.4 All protected species were considered during the survey. Only those considered likely to utilise the site are mentioned in this report.

Bats

- 2.5 Survey effort was completed in line with official assessment guidelines⁵ and largely followed that recommended by the Chartered Institute for Ecology and Environmental Management (CIEEM)⁶ and British Standard Code of Practice⁷. The assessment followed the standard methodology. The site was searched using visual encounter survey techniques. Potential bat movement corridors and movement

⁵ Collins J (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4thedn. Bat Conservation Trust, London.

⁶ CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.

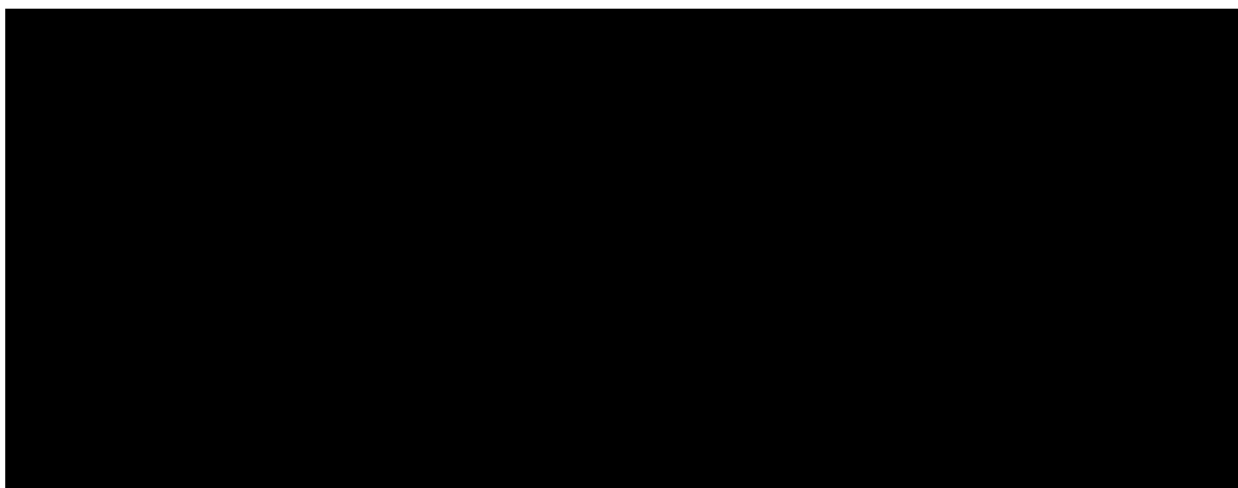
⁷ British Standards Institution (2013) BS 42020:2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London.

barriers were assessed and noted. During the site visit, where possible, all suitable areas were examined for evidence of bats.

Table 1: Guidelines summary for assessing potential bat roost suitability

Suitability	Description of building, tree or structure
Negligible	Negligible habitat features on site likely to be used by roosting bats
Low	A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, potential roost sites not suitable for larger numbers or regular use (i.e. maternity or hibernation).
Moderate	A structure or tree with one or more potential roost sites that could be used by bats, but unlikely to support a roost of high conservation status.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time.
Confirmed roost	Evidence of bats or use by bats found.

2.6



Dormouse

2.7 Hedgerows, scrub and treelines within and bordering the surveyed site were assessed for their suitability to support breeding populations of hazel dormice *Muscardinus avellanarius*, as well as suitability to provide connectivity to nearby suitable breeding habitats.

Nesting Birds

2.8 The survey also included an inspection for evidence of common nesting birds.

Reptiles and Amphibians

2.9 Habitats were assessed for their potential to support reptiles and amphibians. Waterbodies typical of those utilised for breeding and foraging activity, and terrestrial refugia suited to sheltering and basking such as waste heaps and plastic/metal/timber sheeting were noted if present (see limitations). In

addition, any dense vegetation including tall ruderal and scrub that is connected to hedgerows and linear tree features was inspected during the assessment.

Limitations

- 2.10 The survey was conducted outside the recognised optimal season for plant identification. Grasses and wildflower develop at varying periods during the year, making identification of some plant species present on site difficult. Subsequently, not all plant species present onsite were recorded, though in relation to assessing habitat types and plant species present, this is not considered significant.
- 2.11 The absence of species does not preclude its presence. Wildlife can be cryptic, and some species are known to be transient and occupy new habitats on a regular basis.
- 2.12 Ten ponds were located within a 500 m radius of the site. Access to seven of these waterbodies, all of which lie on private land, was not obtained for Habitat Suitability Index (HSI) assessment. However, as the proposed plans will only be impacting a specified area within the survey boundary – a site which offers negligible value as terrestrial habitat for GCN, lack of access to these waterbodies was not considered to be a limitation and did not impact the survey results or conclusions made within this report.
- 2.13 Local biological records search results were not obtained.
- 2.14 No further limitations are associated with the survey.

3 RESULTS

Desk Study

Designated Sites

- 3.1 According to the MAGIC website, two statutory designated sites occur within a 2 km radius of the survey site. No non statutory sites exist within the same radius.

Table 2: Site Designations

Site Name	Designation	Distance	Direction	Relevant Information
Severn Estuary	SSSI, SAC, SPA, Ramsar Site	700 m	North-West	Intertidal mud and sand
Purton Passage	SSSI	1.2 km	North	A 4.1-ha site of earth heritage

SSSI = Site of Special Scientific Interest, SAC = Special Area of Conservation, SPA = Special Protection Area

Wye Valley & Forest of Dean Bat Sites Special Area of Conservation (SAC)

- 3.2 The nearest component of the Wye Valley and Forest of Dean Bat SAC⁸, designated for the conservation of horseshoe bats (*Rhinolophus* sp.), lies 7.6 km to the west of the site. This 913-ha designated site lies at the border of England and Wales and is known for a large concentration of the national population of lesser horseshoe *Rhinolophus hipposideros* (estimated to be approximately 26% of total national population).

Surrounding Habitats

- 3.3 The survey site is located within the curtilage of Hinton Farm and surrounded by agricultural land comprised of pastoral fields which are bordered by hedgerows. The wider environment features a limited amount of Deciduous Woodland (Priority Habitat), most notably a linear block existing 600 m to the north-west and a block of Ancient Semi-Natural Woodland (Ancient Woodland Inventory) occurring 1 km to the south-east. Several blocks of Traditional Orchard (Priority Habitat) exist within a 2 km radius, the closest existing 380 metres to the south-west. Notable grassland habitat within a 2km radius includes parcels of Floodplain Grazing Marsh, and single parcels of good quality semi-improved grassland and Lowland Meadow (Priority Habitat) which are located within 1.2 km of the site.

Local waterbodies

- 3.4 Through use of the MAGIC website, ten ponds were identified within a 500 m radius of the site boundary (see Table 3 below).

Table 3: Pond Locations within a 500 m radius

Pond	Distance from Site (Metres)	Direction	Grid Reference	Notes
1	220	West	SO 68192 03014	Not accessed – located on private land (see limitations)
2	250	North	SO 68389 03311	Accessed for HSI assessment – See Table 6
3	290	North-East	SO 68666 03199	Not accessed – located on private land (see limitations)
4	295	North	SO 68377 03342	Accessed for HSI assessment – See Table 6
5	360	North	SO 68439 03415	Accessed for HSI assessment – See Table 6
6	370	North-West	SO 68093 03228	Not accessed – located on private land (see limitations)

⁸ <https://www.fdean.gov.uk/media/q1jnf054/wv-fod-bat-sac-development-management-survey-and-assessment-guidance-vr-july-2021.pdf>

7	430	West	SO 67965 03122	Not accessed – located on private land (see limitations)
8	450	North-West	SO 68103 03363	Not accessed – located on private land (see limitations)
9	460	South-West	SO 68062 02754	Not accessed – located on private land (see limitations)
10	470	North	SO 68390 03520	Not accessed – located on private land (see limitations)

Granted European Protected Species Licences (EPSL) within a 2km radius

- 3.5 According to the MAGIC website, one EPS licence has been granted for lesser horseshoe bats in 2016 at a location 650 metres to the south-west of the survey site. No EPS licences for GCN or other European Protected Species were identified. Eight GCN Class Survey Licence returns were made from five locations, the closest located 300 metres to the north-west, although no positive GCN Pond Surveys (2017-2018) were identified.

Field Survey

- 3.6 Weather conditions during the daytime assessment are shown in the below table. Temperatures were recorded onsite using an Elitech RC-51 Temperature Logger.

Table 4: Weather conditions during Preliminary Ecological Appraisal

Date	Start	Finish	Temp °C	Wind	Cloud %	Rain	Notes
28/11/2023	10:30	12:15	6	Calm	93	Dry	N/A

Onsite Habitats

- 3.7 The survey area comprises a plot of land within a field, located at the eastern extent of the agricultural yard. Onsite habitats are dominated by poor quality semi-improved grassland bordered to the east by a well-managed species rich hedgerow with an associated wet ditch and a single mature oak tree. No priority habitats or standing waterbodies exist within the survey area and no ponds are to be destroyed or impacted by the proposed works.
- 3.8 The individual habitat types recorded at the site are described under the sub-headings below, with the location and extent of each illustrated in the Habitat Map in Figure 2.

Semi-improved grassland

- 3.9 Habitats onsite are dominated by poor semi-improved grassland. The short sward has been short-grazed and was dominated by grasses such as perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus* and Red fescue *Festuca rubra* with a limited amount of forbs such as dandelion *Taraxacum officinalis* agg, creeping buttercup *Ranunculus repens* and white clover *Trifolium repens*

Hedgerow and wet ditch

- 3.10 A species rich hedgerow exists along the eastern boundary of the survey area. The hedgerow was dominated by blackthorn *Prunus spinosa*, with elder *Sambucus nigra*, common hawthorn *Crataegus monogyna*, field maple *Acer campestre*, hazel *Corylus avellana* and a single mature oak *Quercus robur* tree located midway along the hedge with an approximate diameter at breast height measurement of 1.2 metres. A bramble *Rubus fruticosus* and ivy *Hedera helix* understorey is also consistently present throughout the hedgerow. A recently dug drainage ditch runs alongside the hedgerow, outside the survey boundary and had steep sides with bare earth and a small amount of water.
- 3.11 It is understood that under the current proposed development, the hedgerow and wet ditch are to be retained and protected by a 10 metre buffer zone from the proposed slurry lagoon.
- 3.12 Marginal vegetation at the edge of the hedgerow was dominated by bitter dock *Rumex obtusifolius*. and nettle *Urtica dioica*, with creeping thistle *Cirsium arvense* and garlic mustard *Alliaria petiolate*.

Notable Flora

- 3.13 An overview of plant species is shown in Table 7: Plant Species Recorded Onsite. No notable plant species and no Schedule 8 or 9 plant species of the Wildlife and Countryside Act 1981 (as amended) were identified on site.

Species

Bats

- 3.14 The mature oak present within the hedgerow at the eastern boundary was assessed from ground level for Potential Roosting Features (PRFs) due to their proximity to the proposed area of works and all were found to offer negligible value to roosting bats, tree images are shown within the report Appendices: Site Images.
- 3.15 No structures exist within the survey boundary. Although no roosting habitat was identified within or immediately outside the survey area, the hedgerow represents some suitable foraging and commuting habitat for bats.

3.16



Dormouse

- 3.17 The hedgerow present at the eastern boundary could provide a suitable habitat link, connecting to surrounding areas of woodland that may support populations of dormouse. However, no direct impacts to this feature are expected and no evidence of dormouse activity was discovered during the site assessment. In addition, no habitats within the survey boundary are considered to be suitable for the species, as such, it is considered that impacts to dormouse can be reasonably discounted, therefore, the species does not feature further within this report.

European Hedgehog

- 3.18 No evidence of hedgehog was discovered during the site visit, though the hedgerow would offer value for commuting and foraging activity.

Nesting birds

- 3.19 No notable bird species were recorded on site and no bird nests were identified within the survey boundary. Although the hedgerow would offer value for nesting activity by an assemblage of local bird species.

Reptiles and Amphibians

- 3.20 No evidence of reptiles or amphibians was found during the site assessment and no ponds are present within the survey boundary as defined in Figure 2, therefore lacking suitable onsite breeding habitat for amphibians, including GCN. The hedgerow and the drainage ditch offer value for commuting and sheltering reptiles and amphibians, although terrestrial habitats within the survey area itself, which are dominated by short-grazed grassland, is considered to hold negligible value with no areas of refuge or suitable commuting/foraging habitats noted within the zone of impact during the survey.

Table 5: Habitat Suitability Index Assessment Scores

	Pond Name	Pond 2	Pond 4	Pond 5
HSI No	SI Description	SI Value	SI Value	SI Value
1	Geographic location	1	1	1
2	Pond area	0.7	0.4	0.4
3	Pond permanence	0.5	0.5	1
4	Water quality	0.33	0.33	0.67
5	Shade	0.6	1	0.6
6	Water fowl effect	1	1	1
7	Fish presence	1	1	1
8	Pond Density	1	1	1
9	Terrestrial habitat	0.33	0.33	0.33
10	Macrophyte cover	0.6	0.7	0.7
HSI Score		0.65	0.66	0.72
Pond suitability (see below)		Average	Average	Good

4 DISCUSSION & RECOMMENDATIONS

Proposals

- 4.1 The proposal is for the construction of a slurry lagoon on a plot of actively grazed poor quality semi-improved grassland. The purpose of the survey was to undertake an appraisal of the site for its potential ecological value to notable and protected wildlife, and to look for evidence of such species. The survey results provide information to determine the likely ecological impact the proposed development will have on protected species, and to inform the level of further survey effort and mitigation required to comply with relevant nature conservation policies and legislation.

Habitats

- 4.2 As part of the desk study, online resource MAGIC was checked for statutory and non-statutory designated sites, with two designated sites occurring within a 2 km radius of the site. The development proposals are considered to be small-scale and no impacts to the designated sites or habitats beyond the site boundaries are anticipated provided nocturnal lighting recommendations included in this report are adhered to and the slurry lagoon, pipes and channels are impermeable, meeting the standards set in British Standard 5502-50:1993+A2:2010 and are not put within 10 metres of the field drainage ditch that runs along the eastern boundary of the field.
- 4.3 Onsite, habitats within the survey boundary are dominated by poor semi-improved grassland. This grassland is classified as poor semi-improved grassland due to its restricted species assemblage and relatively low number of forbs (see Table 7) and was of limited botanical value, being comprised of common and widespread plant species which are not ecologically notable. This habitat is locally abundant and the required removal of the grassland to facilitate the lagoon is not considered likely to significantly impact local wildlife populations. Therefore, its loss does not represent a constraint to the development.
- 4.4 Although limitations have been recognised with regard to timings, because the field visit was undertaken at a time of year when some botanical species may be overlooked if not in flower, a follow-up National Vegetation Classification (NVC) survey of the site is unlikely to lead to the identification of further botanical species and is therefore not recommended in this instance.
- 4.5 No direct impacts to the hedgerow which is located along the eastern survey boundary are to occur as part of the proposed works. The UK BAP Priority Habitats include all hedgerows with at least 80% cover

of at least one woody UK native species⁹ and > 20 m in length. As such, it is considered likely that this hedgerow would qualify as a UK BAP Priority Habitat.

- 4.6 Although the hedgerow and mature oak tree are to be retained, measures should still be taken to suitably protect this feature at all times both during and after construction and use of nocturnal lighting should be carefully considered to ensure no indirect impacts occur (see point 4.9). It is recommended that the required 10 metre buffer zone should be clearly marked such as through use of timber post and red/white barrier tape and maintained throughout the excavation works. No vehicles should enter this area and it must not be utilised for storage of materials.

Species

Bats

- 4.7 No suitable onsite roosting habitat was identified during the ground level assessment of the mature oak tree and therefore no further survey effort upon this feature is recommended in relation to bats. Additionally, no bats, droppings or further evidence of bats was discovered during the assessment.
- 4.8 Linear features, in particular hedgerows and trees are important for commuting activity in bats and the boundary hedgerow will likely offer foraging opportunities to the local bat population. As such, use of nocturnal lighting as part of the development works must be carefully considered, with a view of retaining darkened corridors for bats (point 4:9 Nocturnal Lighting Scheme).

Nocturnal Lighting Measures

- 4.9 The insensitive use of external lighting within the proposed development could have a negative impact upon bats using the site for foraging and commuting activity.
- 4.10 As suitable bat habitat occurs within the nearby surrounding environment, a low-level lighting scheme should be implemented during and after construction to avoid indirect disturbance to bats and other nocturnal animal species that may exploit local habitats. Measures must be taken to ensure nocturnal animals are safeguarded from inappropriate use of light and noise throughout the hours of night during the construction period, as well as to protect important commuting corridors for bats. Any external lighting installed as part of the development must be used in accordance with Guidance Note 08/23: Bats and Artificial Lighting¹⁰.
- 4.11 Sensitive lighting strategy measures during the construction period are as follows:

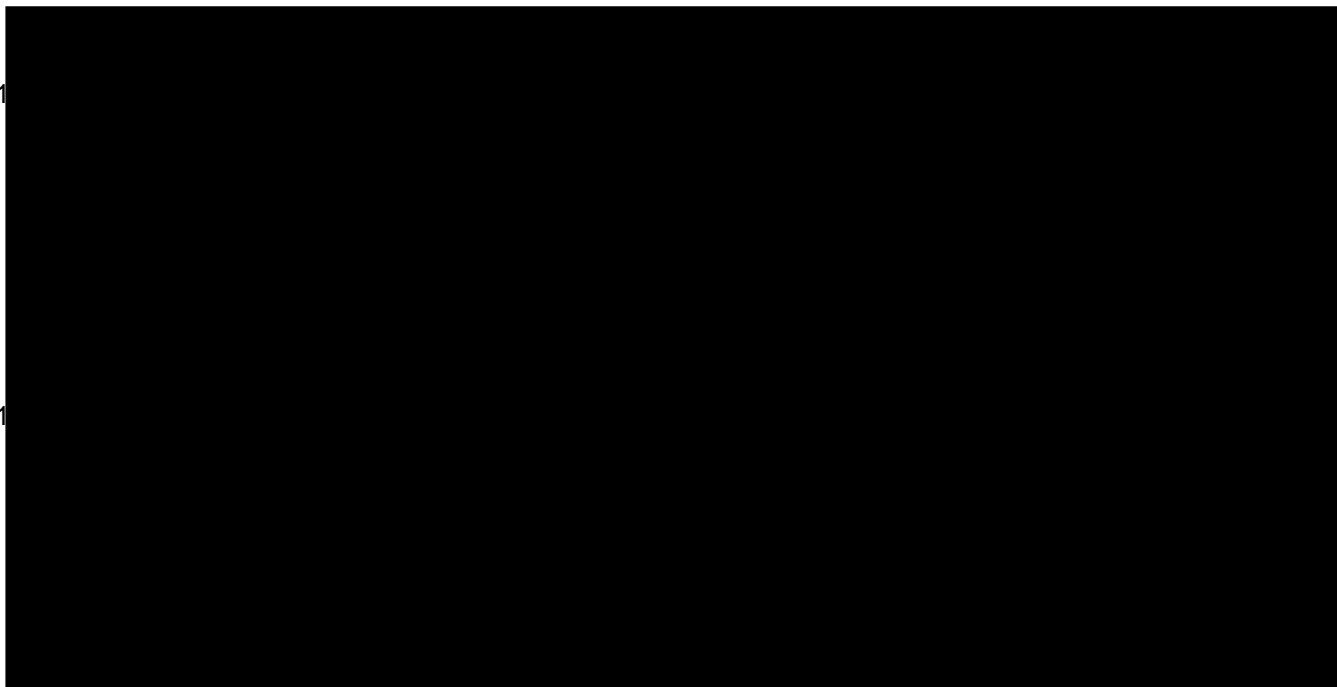
⁹ JNCC (2022) <https://data.jncc.gov.uk/data/ca179c55-3e9d-4e95-abd9-4edb2347c3b6/UKBAP-BAPHabitats-17-Hedgerows.pdf> [Accessed 20th March 2022]

¹⁰ <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Works must not be carried out after dusk and must not commence until after dawn.
 Generators and machinery that emit significant noise levels must not be left to run after dusk.
 LED lighting sources must be used, which generally have a narrower and more directional beam.
 Light spill must be controlled and if lighting is required at night, hooded shields must be fitted to prevent spill onto nearby habitats that are likely to support wildlife, including nearby trees and hedgerows.
 Lighting must not be directed towards any bat or bird compensation features.

4.12 In addition to the above, when selecting appropriate external lighting, the following specifications should be taken into consideration:

Any external lighting incorporated into the proposed development should be LED luminaires due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats¹¹.
 All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used¹²



European Hedgehog

4.15 No evidence of hedgehog was discovered onsite. However, it is recommended that the developer should ensure provisions are made that would allow hedgehog to continually access the site for commuting and foraging purposes. This can be achieved through retaining an open design to the site,

¹¹ Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation*
¹² Bat Conservation Trust & Institute of Lighting Professionals (ILP) 2018. *Guidance Note 8: Bats and artificial lighting in the UK*. Bats and the Built Environment Series.

otherwise it is important that provisions are made in each boundary line (if fenced or gated) with a view to allow them to successfully commute. Gaps in fences and under gates should be at least 130mm X 130mm.

Potential Impacts to European Hedgehog

- 4.16 Due to the suitability of the site and surrounding habitats for commuting and foraging, it is recommended that a Precautionary Working Method Statement (PWMS) detailing Reasonable Avoidance Measures (RAMs) be prepared in order to reduce risks to hedgehog at all times throughout the development works, to include the implementation of sloping ramps within any holes or foundations dug in association within the proposed works.

Reptiles and Amphibians

- 4.17 No evidence of reptiles or amphibians was discovered during the site assessment, though it is noted that the survey was undertaken at a suboptimal period of surveying of herpetofauna. Short-grazed grassland dominating the survey boundary offers negligible value to reptiles and amphibians, although the boundary hedgerow would provide a suitable site of refuge or cover that could be used by reptiles or amphibians during the terrestrial phase of their lifecycle. Notably, whilst 10 ponds were found to occur within a 500 m radius of the site, two of which occur within 250 m of the survey boundary, no ponds exist within the survey boundary which therefore lacks breeding potential for great crested newts – not loss of suitable terrestrial and aquatic habitat is anticipated as part of the proposed works.

Potential Impacts to Reptiles and Amphibians

- 4.18 Whilst impacts to reptiles and amphibians resulting from the proposed works, to further reduce risks during the construction phase and to protect suitable boundary habitats, it is recommended that a Precautionary Working Method Statement (PWMS) detailing Reasonable Avoidance Measures (RAMs) be prepared. This will include, but is not limited to, measures for:
- A toolbox talk to be undertaken for all onsite personnel prior to commencement of works, relating to reptiles and amphibians and their awarded level of protection.
 - Measures to protect boundary habitats, notably the species-rich hedgerow occurring at the eastern boundary.
 - How onsite habitats will be maintained to further reduce risks to reptiles and amphibians, as well as during the construction phase.
 - What to do in the event that reptiles or amphibians are discovered on site during the works.
- 4.19 Although considered unlikely, should a significant impact to GCN population(s) be determined during phased development, then all works must cease immediately and Cotswold Environmental be

contacted on 07557539979. A European Protected Species Licence would likely be required from Natural England in order to allow works to proceed further.

Nesting birds

- 4.20 No evidence of nesting was discovered during the site assessment; however, the boundary hedgerow would undoubtedly offer value to a variety of local bird species. However, as no direct impacts to the hedgerow are expected, impacts to nesting birds can be reasonably discounted.

Potential Impacts to nesting birds

- 4.21 Irrespective of the time of year, if any nesting birds are discovered on site, an area around the nest site will be protected from disturbance with a suitable fence (not HERAs fencing) that would include an appropriate buffer zone, as determined by the suitably qualified supervising ecologist. Work will then be avoided in this area until the nest is no longer in use. Buffer zones in this respect will normally be 5m in diameter, and will be delineated by canes, cordon tape and signage.

Biodiversity Enhancement

- 4.22 The NPPF (2021) outlines obligations of Local Planning Authorities to promote Biodiversity Net Gain where possible. There are various options available with regards to biodiversity enhancement on site:

Bats

- 4.23 An option to increase biodiversity relating to bats on site would be to affix one or more bat boxes to nearby mature trees within the site boundary, ideally using either Schwegler 1FF boxes (or similar) or Schwegler 2F boxes (or similar). Alternatively, bat boxes can be installed at the apex of a gable wall, but they can also be placed along other elevations at eaves level or below the fascia and / or soffits. They may also be pole-mounted in a garden. Bat boxes should be positioned no lower than 4m above ground level and they should not face in a northerly direction.

Nesting Birds

- 4.24 An option to increase biodiversity relating to nesting birds would be to create nesting opportunities for barn swallow *Hirundo rustica*. Swallows prefer to nest in covered structures and provisions can be made in nearby open-fronted buildings that are not included in the proposed development by using swallow nest cups, ideally using Schwegler No.10 Swallow Nest (or similar) which are installed internally, leaving a gap of 6cm between the top of the nest and the ceiling. Multiple nests should be positioned at least 1 m apart and the nests should be situated where there is always available access, i.e., through open elevations or permanently open and fixed doors/windows. Consideration should also be given to ensure nest cups are not placed directly above parked vehicles or stored equipment due to fall of droppings. If swallow nest cups are not a viable option onsite, an alternative enhancement relating to nesting birds would be to install one or more external bird nest boxes (Schwegler 1B or similar). For maximum success, our recommendations are as follows:

Bird boxes must be positioned away from the building's main access doors where disturbance would be likely.

Following British Ornithology Trust guidelines, bird boxes must be positioned no lower than 2m from ground level and preferably above 3 m to prevent possible predation.

The proposed placement of the bird nest boxes must allow for a clear flight path, without obstruction to the nest box entrance. It is recommended that they are installed in a south-westerly facing direction to offer protection from prevailing winds and rain and should ideally be slightly tilted in a downwards position to offer further weather protection.

APPENDIX A: PLANTS RECORDED¹³

Table 6: Indicative Plant list recorded on site

Scientific Name	Common Name
Grasses	
<i>Lolium perenne</i>	Perennial ryegrass
<i>Holcus lanatus</i>	Yorkshire fog
<i>Festuca rubra</i>	Red fescue
Forbs	
<i>Taraxacum sp.</i>	Dandelion
<i>Urtica dioica</i>	Stinging nettle
<i>Alliaria petiolata</i>	Garlic mustard
<i>Glechoma hederacea</i>	Ground ivy
<i>Rubus fruticosus agg.</i>	Bramble
<i>Cirsium arvense</i>	Creeping Thistle
<i>Rumex obtusifolius</i>	Bitter dock
<i>Plantago lanceolata</i>	Ribwort plantain
<i>Trifolium repens</i>	White clover
<i>Galium aparine</i>	Cleavers
Shrubs	
<i>Sambucus nigra</i>	Elder
<i>Crataegus monogyna</i>	Common hawthorn

¹³ Plant names according to Rose F, O'Reilly C (2006) The Wild Flower Key, Revised Edition. Penguin Books, London.

<i>Prunus spinosa</i>	Blackthorn
<i>Corylus avellana</i>	Hazel
<i>Rubus fruticosus agg.</i>	Bramble
<i>Hedera helix</i>	Ivy
<i>Acer campestre</i>	Field maple
Trees	
<i>Quercus robur</i>	Oak

APPENDIX B: LEGISLATION SUMMARY

Habitats Directive

Species listed in the Habitats Directive 1992 (transposed into UK law through the Conservation of Habitats and Species Regulations 2010 and subsequently 2017 as amended) for which it is illegal to deliberately capture, kill or disturb any individual, or deliberately damage or destroy a breeding site or resting site. In 2007 and 2009, the Habitats Regulations were amended to define illegal disturbance as that which would affect the ability of a significant group of animals of a European Protected Species to survive, breed or to rear or nurture their young, or to hibernate or migrate, or to affect the local distribution or abundance of the species.

Natural Environment and Rural Communities (NERC) Act 2006

The act to makes provision about bodies concerned with the natural environment and rural communities; to make provision in connection with wildlife, Sites of Special Scientific Interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

Countryside and Rights of Way (CRoW) Act 2000

The CRoW applies to England and Wales only, enforcing a statutory policy for biodiversity conservation. The UK Biodiversity Action Plan (BAP) provides the framework for fulfilling the UK's responsibilities towards the Convention on Biological Diversity. The CRoW Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.

The Conservation of Habitats & Species Regulations 2017 (the Habitat Regulations) (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017 and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

Bats

In England and Wales, bats and their roosts are protected under the Conservation of Species and Habitats Regulations 2017 (as amended) and the Wildlife & Countryside Act 1981 (as amended). Taken together, this legislation makes it an offence to:

- Deliberately capture (or take), injure or kill a bat

- Intentionally or recklessly disturb a group of bats where the disturbance is likely to significantly affect the ability of the animals to survive, breed, or nurture their young or likely to significantly affect the local distribution or abundance of the species whether in a roost or not

- Damage or destroy the breeding or resting place of a bat

- Possess a bat (alive or dead) or any part of a bat

- Intentionally or recklessly obstruct access to a bat roost

- Sell (or offer for sale) or exchange bats (alive or dead) or parts of bats

A roost is defined as being 'any structure or place that is used for shelter or protection' and since bats regularly move roost site throughout the year, a roost retains such designation whether or not bats are present at the time.

Reptiles

All native British species of reptile (of which there are six) are listed in Schedule Five of the Wildlife and Countryside Act (1981) (as amended) and as such are protected from deliberate killing, injury or trade. Therefore, where development is permitted and there will be a significant change in land use, a reasonable effort must be undertaken to remove reptiles off site to avoid committing an offence. The same act makes the trading of native reptile species a criminal offence without an appropriate licence.

Great Crested Newts

Great crested newts and their habitats receive protection under The Conservation of Habitats and Species Regulations 2017 (as amended). This species is also afforded full protection under the

Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under such legislation it is an offence to:

Intentionally or recklessly kill, injure or capture a great crested newt;

Possess or control any live or dead specimen or anything derived from a great crested newt;

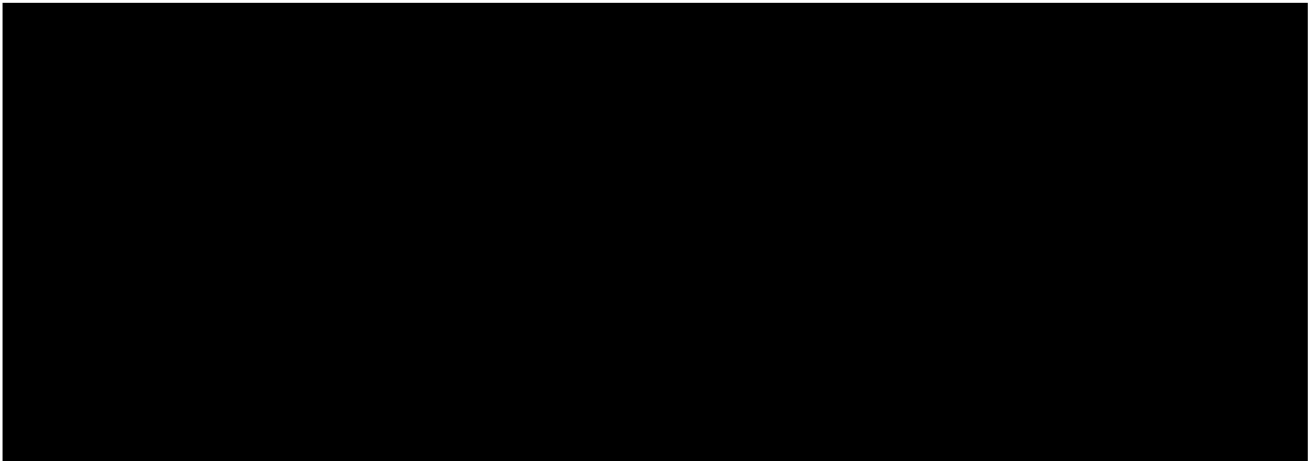
Intentionally or recklessly* damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and

Intentionally or recklessly* disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

Damage or destroy a breeding site or resting place.

Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.

*Reckless offences were added by the Countryside and Rights of Way Act 2000, which applies only to England and Wales.



Dormouse

The dormouse has undergone substantial declines in recent years as a result of habitat loss, deterioration and fragmentation and is consequently protected as a 'European Protected Species' under the 2017 Conservation of Habitats and Species Regulations, which implements the EC Habitats Directive 92/43/EEC in the United Kingdom. In relation to European Protected Species (EPS), the 2017 Regulations make it an offence to:

- Deliberately capture, injure or kill any wild animal of a EPS;
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to:
(i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate or (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy a breeding site or resting place of such an animal; and/or

- To (a) be in possession of, or to control; (b) to transport any live or dead animal or any part of an animal; (c) to sell or exchange or (d) offer for sale or exchange any live or dead animal or part of an animal of an EPS.

In addition, Dormice are protected under the 1981 Wildlife and Countryside Act (as amended).

Dormice are listed on Schedule 5 of the Act and are subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a Dormouse while it is occupying a structure or place which it uses for shelter or protection; and/or
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a Dormouse.

Birds

All common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended).

Under this legislation it is an offence to:

Kill, injure or take any wild bird

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

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

APPENDIX C: MAPS & SITE PLANS

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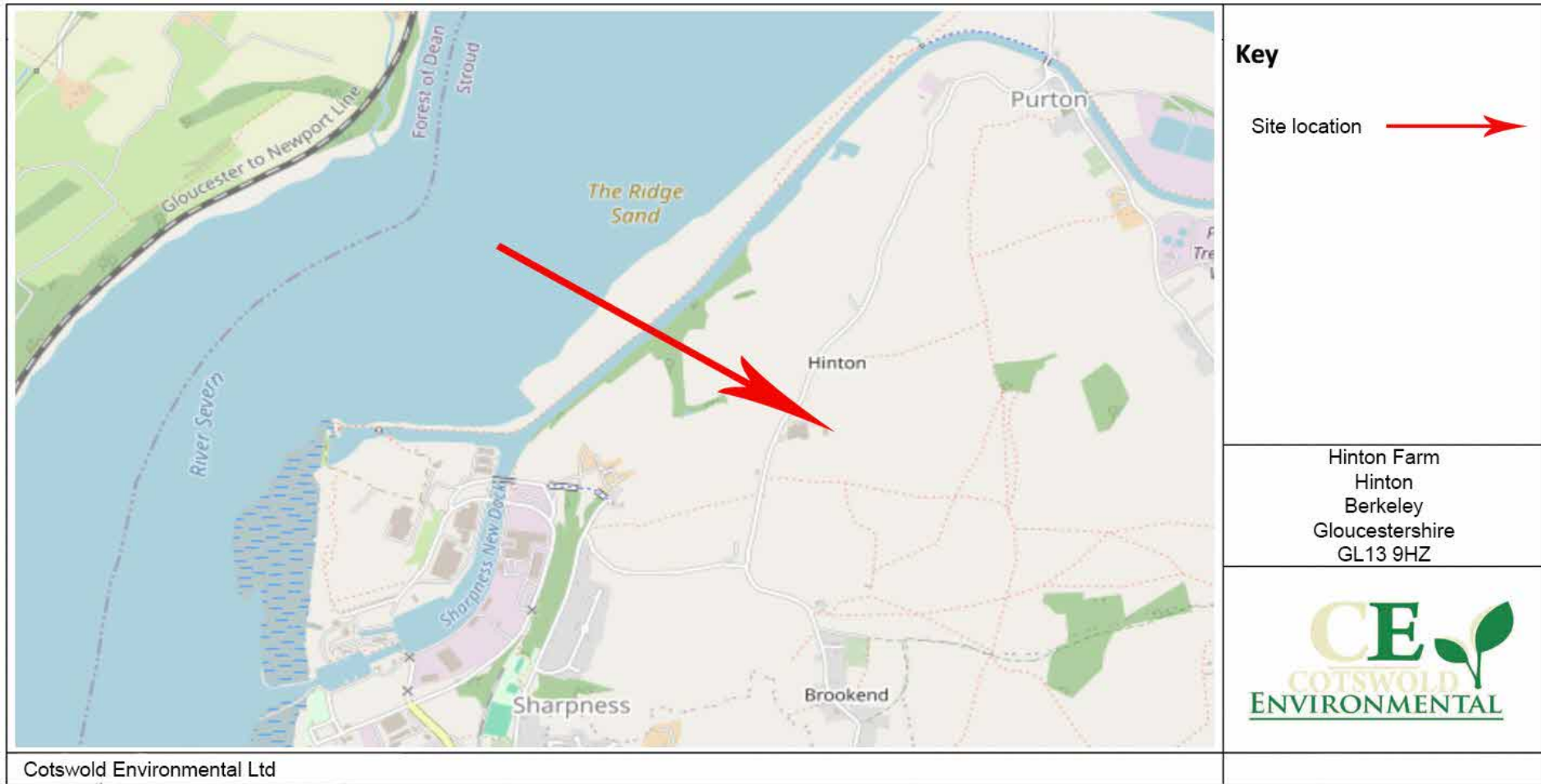


Figure 1: Location Map



Figure 2: Habitat Map

APPENDIX D: SITE IMAGES



Photo 1: General view of survey area from the north



Photo 2: General view of survey area from the south



Photo 3: Species rich hedgerow located at eastern boundary of survey area



Photo 4: Recently dug drainage ditch located along hedgerow to the outer eastern boundary



Photo 5: Mature oak tree located along eastern boundary of survey area



Photo 6: Pond 2



Photo 7: Pond 4



Photo 8: Pond 5