

BURTON REID  
ASSOCIATES



# ECOLOGICAL IMPACT ASSESSMENT

**Land at Lower Molinnis, Bugle**

Mr Jonathan Penney

# DOCUMENT CONTROL

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## DECLARATIONS OF COMPLIANCE

The report which we have prepared and provided is in accordance with the Chartered Institute for Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

This report has been produced in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development" and the Chartered Institute of Ecology and Environmental Management's Guidelines for Ecological Report Writing (CIEEM, 2017).

## DATA VALIDITY

Please note that unless otherwise stated, the contents of this report will remain valid for a maximum period of 12 months from date of issue. Beyond this updated survey work may be required to establish any changes in baseline conditions.

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Nothing in this report constitutes legal advice or opinion. If legal opinion is required a qualified legal professional should be contacted for advice.

## NON-TECHNICAL SUMMARY

Burton Reid Associates Limited was instructed by Mr Jonathan Penney via Ercle Designs Ltd. to undertake an ecological assessment in relation to the construction of a single residential unit at Lower Molinnis, Bugle. Baseline ecological information was collated for the proposed development site on 31<sup>st</sup> October 2023. This included a desk study and Preliminary Ecological Appraisal (PEA) including a UK Habitat Classification survey in line with relevant best practice guidance. A summary of the ecological baseline and recommendations are provided below.

*Table 1: Executive summary*

ECOLOGICAL RECEPTOR	ECOLOGICAL BASELINE	MITIGATION/AVOIDANCE/ENHANCEMENT MEASURES
Grassland habitat	Loss of entire habitat during construction phase (c.64m <sup>2</sup> )	Re-seeding of grassland in areas outside of the residential unit footprint with wildflower-rich seed mixture post construction.
Hedgerow habitat	Overgrown native hedgerows present on north-western and south-eastern boundaries, to be retained in development proposals. Possible risk of damage during construction.	All retained hedgerows and trees within and bordering the proposed development areas should be protected during construction in accordance with BS5837:2012 (Trees in relation to design, demolition and construction) or the recommendations of a Suitably Qualified Arboriculturist (SQA). This will include use of suitable protection fencing (e.g., Heras fencing), where appropriate, to prevent accidental damage to stems and roots of trees during the construction phase.
Bats (roosting)	Trees on the hedgerows had low potential to support roosting bats. No suitable roosting features were identified within the garden building.	Any removal of trees on Site must be preceded by a Preliminary Bat Roost Assessment inspection by a licensed bat ecologist. This may include tree climbing inspections. To provide ecological enhancement, a minimum of 1no. integrated or external bat boxes should be installed on the new dwelling. See measures detailed in section 5.1.
Bats (foraging and commuting)	The habitats within the Site included a sheltered, overgrown garden and hedgerows which may provide moderate quality foraging and commuting habitat for bats, however foraging opportunities are widespread in the wider landscape to the north, south and east.	A sensitive lighting strategy should be implemented during the construction phase including measures such as night-time curfews (i.e., no night working) to minimise potential for indirect adverse effects of artificial lighting on wildlife.  Although levels of artificial light spill produced by the proposals are considered unlikely to result in significantly greater impacts on foraging and commuting bat habitat than existing, it is recommended

ECOLOGICAL RECEPTOR	ECOLOGICAL BASELINE	MITIGATION/AVOIDANCE/ENHANCEMENT MEASURES
		that proposals should seek to minimise light spill to reduce adverse effects of artificial light on nocturnal wildlife. Details provided in section 4.
Hazel Dormouse	The hedgerows provide suitable habitat for Hazel Dormice. No losses of habitat anticipated.	See hedgerow habitat mitigation measures above.
Badger	No evidence of Badger activity on Site. Possible that Badger may occasionally use the Site as part of wider territories.	Any excavations should be covered at night, or a plank /ramp should be placed to allow an escape route for wildlife which may become trapped.
Nesting birds	The mature trees and hedgerows forming the boundaries of the Site provide good quality nesting, and foraging habitats for a variety of common bird species.	It is strongly recommended that the removal of vegetation with the potential to support nesting birds should be timed to avoid the main bird nesting period, which falls between March and August inclusive. Any removal within this period must be preceded by a nesting check by an experienced ecologist. <b>Please note that attempting to remove vegetation between March and August inclusive may result in significant programme delays.</b>
Reptiles/amphibians	Unmanaged areas and hedgebanks on Site provide suitable habitat for reptiles,	Pre-construction, any taller ruderal vegetation and scrub should undergo a phased vegetation clearance methodology, details provided in section 4. These works should only be undertaken during the reptile active months (generally March to October inclusive), Creating and maintaining a short grassland sward will discourage reptiles away from the development areas until soil is stripped in preparation for construction works.  Removal of ground-level vegetation and stripping of soil should be carried out under guidance from a suitably experienced ecologist during reptile active months.
Hedgehog	No evidence of Hedgehog, however suitable habitat present.	See Badger mitigation above.

*Conclusion*

The Ecological Impact Assessment concludes that with proposed avoidance, mitigation and compensation measures in place, it is considered that there will be no likely significant effects or adverse impacts on biodiversity at the Site.

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# 1 INTRODUCTION

## 1.1 SITE BACKGROUND

Burton Reid Associates was instructed by Mr Jonathan Penney via Ercle Designs Ltd. to undertake an Ecological Impact Assessment of land at Lower Molinnis, Bugle, hereinafter referred to as 'the Site', in relation to a planning application being put forward for the construction of a single residential unit and associated garden.

The Site centre is located at National Grid Reference SX 0202 5937 on the edge of Bugle, north of St. Austell, Cornwall. The Site comprises a detached garden comprising a small lawn area, hardstanding areas and a small metal outbuilding enclosed by hedges, hedge banks and trees. The wider area comprises residential areas and gardens to the west with fields, hedgerows and scattered woodland and scrub to the north, east and south.

The following are detailed within this Ecological Impact Assessment (EcIA) report:

- Details of survey methods;
- Description of Site ecological baseline including habitat descriptions and potential for presence of protected species;
- An assessment of the anticipated impacts of the development on habitats/species present;
- Avoidance, mitigation and biodiversity enhancement measures required.

## 1.2 PROPOSED DEVELOPMENT

The proposed development will include the construction of a single residential unit and garden.

## 1.3 WILDLIFE LEGISLATION AND PLANNING POLICY

This report has been written with reference to current wildlife legislation and planning policy, a list of which can be found in Appendix I.

## 2 METHODS

### 2.1 SCOPE OF ECIA ASSESSMENT

The impact assessment has been undertaken following the Chartered Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment (CIEEM, 2018). These guidelines represent current best practice when assessing the impacts of development on biodiversity.

In summary, the guidelines provide a framework for describing the potentially significant effects of a proposed development on ecology and for setting out mitigation and enhancement measures to avoid/minimise impacts and create positive outcomes for biodiversity.

In the first instance, ecological features of importance are identified. Some features can already be recognised as having ecological value through their designation e.g. statutory/non-statutory designated sites, whilst others may require an evaluation based on professional judgement using available guidance and information. Key considerations taken into account include legal protection, local and national conservation status, population trends, range and distribution, diversity, connectivity and rarity.

The importance of each ecological feature has been given a geographic frame of reference within the relevant headings in Section 3 as per the CIEEM (2018) guidelines for EcIA: International, National, Regional, County, District/local authority area, Local or Site level.

An assessment has then been made of the scale and significance of anticipated impacts on any ecological features of importance. For the purposes of this report, this impact assessment takes into consideration mitigation and enhancement measures which have been developed and incorporated into the scheme design (i.e. embedded mitigation).

Additional mitigation and enhancement measures to avoid/minimise impacts during the construction and post-construction phases of the development are also included and are typically secured through the planning process via the use of planning conditions/obligations.

### 2.2 SURVEY APPROACH

#### 2.2.1 Desk Study

A data search was requested from the Devon Biological Records Centre in October 2023 for information on designated nature conservation sites and records of protected and notable and species within 1km of the Site. The search was to obtain background data on the presence and distribution of sensitive ecological receptors within the area surrounding the Site. This scope of search was considered appropriate for the nature and scale of proposals, and in view of the proximity of the Site to Mid Cornwall Moors SSSI, in accordance with CIEEM guidelines on use of biodiversity data (CIEEM, 2020).



The presence of nearby designated sites and priority habitats was established using the Defra MAGIC map tool ([www.magic.gov.uk](http://www.magic.gov.uk)). Statutory designated sites are those which are protected under current UK/European legislation and include Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites and Local Nature Reserves (LNR). Non-statutory designated sites include County Wildlife Sites (CWSs), Other Sites of Wildlife Interest (OSWIs) and Unconfirmed Wildlife Sites (UWSs). They are designated on account of the habitats, flora and fauna they support and are considered of county wildlife importance. UWSs are sites identified as having probable ecological interest but which have not been fully surveyed to confirm their value.

Protected species are those which are afforded legal protection. Priority habitats and species are those which have some level of nature conservation importance due to factors such as rarity, vulnerability or declining population/status and are considered as priorities for nature conservation. They may be of importance at a national scale, or at a more local level and include 'Habitats/Species of Principal Importance' as listed under the under Section 41 of the NERC Act (2006).

#### 2.2.2 Field survey

A Preliminary Ecological Appraisal (PEA) walkover survey of the Site was undertaken on 31<sup>st</sup> October 2023 by Gavin Young ACIEEM of Burton Reid Associates. This survey included a scoping survey for potential presence of protected species and impacts on notable or protected habitats. The survey was undertaken in accordance with guidance by the Chartered Institute of Ecology and Environmental Management (2017) and UK Habitat Classification guidelines (Butcher et al., 2020) for assessment of habitats. This system for habitat classification allows for clear interpretation of data as it takes into account important habitat types such as Priority and Annex I habitats.

#### 2.2.3 Limitations

No significant constraints were encountered during the desk study and field survey. The habitat survey was undertaken at a sub-optimal time of year for botanical recording, however due to the nature of the habitat types found at the Site, this limitation is unlikely to have had a significant impact on the findings or recommendations contained within this report.

## 3 ECOLOGICAL BASELINE

### 3.1 DESIGNATED SITES

#### 3.1.1 Statutory designated sites

1no. statutory designated site is located within 1km of the Site, namely Mid Cornwall Moors SSSI, which is situated c. 200m to the south of the Site and is designated for its diverse mosaic of semi-natural habitats.

The Site falls within a SSSI Impact Risk Zone, and meets criteria for consultation with Natural England, as follows:  
*All planning applications (except householder) outside or extending outside existing settlements/urban areas*

*affecting greenspace, farmland, semi natural habitats or landscape features such as trees, hedges, streams, rural buildings/structures.*

### 3.1.2 Non-statutory designated sites

2no. non-statutory nature conservation sites were identified by DBRC within 1km of the Site. The closest of these is Menadew CWS, which is situated c. 200m to the south of the Site and is designated for its complex diversity of habitats and species of note. Criggan Moor CWS is situated c. 335m to the north of the Site and is designated for supporting a mosaic of wetland and heathland communities and several species of note.

No areas of woodland listed on Natural England's Inventory of Ancient Woodlands are present within or adjacent to the Site.

### 3.1.3 Habitat Networks

The Site is not located within a National Habitat Network area (Edwards et al., 2020).

### 3.1.4 Priority habitats

No Habitats of Principle Importance (HPIs) were identified pertaining to or bordering the Site during a review of the MAGIC online database. The Site does, however, contain native hedgerows and hedgebanks, which meet criteria as Habitats of Principle Importance (comprised of more than 80% native woody species).


Each habitat within the Site is described below. The distribution of the main habitats present is shown in the habitat survey map in Appendix II.

### 3.2 HABITATS

\*DAFOR scale of relative abundance: Dominant, Abundant, Frequent, Occasional or Rare. L = Locally.

#### 3.2.1 Broad habitat: Grassland (g)



The south-western end of the Site comprises predominantly of lawn which has recently been reseeded.

Photos	UKHAB Codes	Description	Main species (DAFOR*)	Other notable species (DAFOR*)
	<p>g4 – modified grassland</p> <p>Secondary codes: 108 – Frequently mown</p>	<p>Frequently mown and recently re-sown (pers. comm) small area of lawn dominated by grasses but with sporadic forbs. Includes a large tree stump on the edge of the grass which has become overgrown with grasses and forbs.</p>	<p>Perennial Rye-grass <i>Lolium perenne</i> (D)                      Cock's-foot <i>Dactylus glomerata</i> (A)                      Broad-leaved Dock <i>Rumex obtusifolius</i> (F)                      Germander Speedwell <i>Veronica chamaedris</i> (F)                      Dandelion <i>Taraxacum</i> agg. (F)                      Hogweed <i>Heracleum sphondylium</i> (O)                      Creeping Buttercup <i>Ranunculus repens</i> (O)                      Male Fern <i>Dryopteris filix-mas</i> (O)                      Ground-ivy <i>Glechoma hederacea</i> (O)                      Herb Robert <i>Geranium robertianum</i> (O)                      Common Nettle <i>Urtica dioica</i> (O)                      Bramble <i>Rubus fruticosus</i> agg. (O)                      Red Campion <i>Silene dioica</i> (O)                      Tutsan <i>Hypericum androsaemum</i> (O)                      Common Sorrel <i>Rumex acetosa</i> (O)</p>	<p>n/a</p>

3.2.2 Broad habitat: Heathland and shrub (h)

h2a – Hedgerows (priority habitat)

2no. hedgerows were present within the red line boundary of the Site, running the length of the north-west and south-west boundaries respectively, apart from the gated entrance at the south-western corner. For individual descriptions, see table below.




Photos	UKHAB Codes	Description	Main species (DAFOR*)	Other notable species (DAFOR*)
	h2a6 – Other native hedgerow  Secondary codes: 11 – Hedgerow with trees 111 – Hedgebank 80 – Unmanaged 203 – Mature tree	H1 – Overgrown to >5m, minimally managed hedgerow with hedgebank comprising predominantly Hazel <i>Corylus avellana</i> . With large Goat Willow <i>Salix caprea</i> growing near the centre of its length. Gaps infilled with dead branches.	Hazel (D) Goat Willow (R) Common Nettle (LA) Foxglove <i>Digitalis purpurea</i> (LA) Bramble (F) Hogweed (O) Cock's-foot (O) Red Campion (O) Ground-ivy (O) Herb Robert (O) Hart's-tongue <i>Phyllitis scolopendrium</i> (O) Common Mouse-ear <i>Cerastium fontanum</i> (R) Holly <i>Ilex aquifolium</i> (R)	n/a
	h2a6 – Other native hedgerow  Secondary codes: 11 – Hedgerow with trees 111 – Hedgebank 80 – Unmanaged 210 – Coppice	H2 – Overgrown to >5m, minimally managed hedgerow with hedgebank comprising predominantly Hazel with Sycamore <i>Acer pseudoplatanus</i> towards the northern end.	Hazel (D) Bramble (A) Sycamore (F) Herb Robert (O) Male Fern (O) Wild strawberry <i>Fragaria vesca</i> (O) Wood sage <i>Teucrium scorodonia</i> (O) Blackthorn <i>Prunus spinosa</i> (R) Navelwort <i>Umbilicus rupestris</i> (R) Dog-rose <i>Rosa canina</i> (R) Cotoneaster <i>Cotoneaster sp.</i> (R)	



3.2.3 Broad habitat: Urban (u)

Paved and concreted areas of garden and associated fencing. For individual descriptions, see table below.

Photos	UKHAB Codes	Description	Main species (DAFOR*)	Other notable species (DAFOR*)
	u1e – built linear features  Secondary codes: 612 – Fence 827 – Garden 847 – Introduced shrub	Post and rail fence between the Site and a neighbouring residential property. Overgrown predominantly with Honeysuckle <i>Lonicera periclymenum</i> and some Bramble, but with no other woody species present.	Honeysuckle (D) Ivy <i>Hedera helix</i> (A) Bramble (O) Herb Robert (O) Common Polypody <i>Polypodium vulgare</i> (O) Hogweed (O) Hedge Bedstraw <i>Galium mollugo</i> (O) Montbretia <i>Crocasmia x crocosmiiflora</i> (O) Red Campion (R) Foxglove (R) Hawthorn <i>Crataegous monogyna</i> (R)	n/a
	u1b – Developed land – sealed surface  Secondary codes: 829 – Unvegetated garden	Paved area to the north-east of the lawn with garden and leisure objects. Some Ivy encroachment.	Ivy (O)	n/a
	u1b5 – Buildings  Secondary codes: 827 – Garden	Corrugated metal shed in good condition situated on concrete base.	n/a	n/a

Photos	UKHAB Codes	Description	Main species (DAFOR*)	Other notable species (DAFOR*)
	<p>u1d – Suburban mosaic of developed and natural surface</p> <p>Secondary codes: 827 – Garden</p>	<p>Overgrown garden area to the south of metal shed and north of paved area.</p>	<p>Bramble (A) Ivy (A) Montbretia (F) Tutsan (F) Cock-s-foot (F) Common Nettle (F)</p>	<p>n/a</p>
	<p>u1c – Artificial unvegetated, unsealed surface</p> <p>Secondary codes: 827 – Garden</p>	<p>Area to the side and behind shed with rubble and debris. Grass cutting piles to the sides of the shed. Hedgebank to the north-east of this parcel forms the boundary, but no shrub species are present. Four trees growing from bank including Hazel and Wild Cherry <i>Prunus avium</i>.</p>	<p>Ivy (O) Bramble (O) Wild Cherry (R) Hazel (R)</p>	<p>n/a</p>
	<p>u1c – Artificial unvegetated, unsealed surface</p> <p>Secondary codes: 510 – Bare ground 827 – Garden</p>	<p>North-eastern end of lawn area, previously covered in tarpaulin. Bare earth with no vegetation.</p>	<p>n/a</p>	<p>n/a</p>

### 3.3 PROTECTED SPECIES (SUMMARY TABLE)

A summary of desk study findings and field-based assessment of habitat suitability for protected and/or notable species are provided in the table below.

SPECIES	DESK STUDY	HABITAT ASSESSMENT
Bats (commuting and foraging)	<p>161no. bat records were provided by ERCCIS for within 1km of the Site. Records of the following species were returned (number of records per species in brackets):</p> <ul style="list-style-type: none"> <li>- Common Pipistrelle <i>Pipistrellus pipistrellus</i> (61)</li> <li>- Pipistrelle sp. <i>Pipistrellus sp.</i> (72)</li> <li>- Brown Long-eared bat <i>Plecotus auritus</i> (13)</li> <li>- Greater Horseshoe bat <i>Rhinolophus ferrumequinum</i> (4)</li> <li>- Lesser Horseshoe bat <i>Rhinolophus hipposideros</i> (11)</li> </ul> <p>Due to the low resolution of the records, the exact location in relation to the Site is unknown.</p>	<p>The habitats within the Site included a sheltered, overgrown garden and hedgerows which may provide moderate quality foraging and commuting habitat for bats, however the Site is small in area and foraging opportunities are widespread in the wider landscape to the north, south and east.</p>
Bats (roosting)	<p>2no. Natural England Protected Species Mitigation Licences relating to works to bat roosts was identified from the MAGIC map tool within 1km of the Site. These licences related to resting places for Brown Long-eared and Lesser Horseshoe bats.</p>	<p>No suitable roosting habitat was present within the metal building on Site. There is low potential for roosts within the mature Goat Willow on the north-western boundary and Wild Cherry on the north-eastern boundary. Both these trees have features which may provide roosting opportunities for small numbers or individual bats including peeling bark and gaps behind significant Ivy growth.</p>
Hazel Dormouse	<p>ERCISS returned no records of Hazel Dormouse <i>Muscardinus avellanarius</i> within 1km of the Site. No previously granted Protected Species Mitigation Natural England Hazel Dormouse licences within 1km were identified using MAGIC map tool.</p>	<p>The hedgerows on the north-west and south-east boundaries provide suitable foraging, commuting, and sheltering opportunities for Hazel Dormice.</p>
Badger	<p>ERCISS returned no records of Badger <i>Meles meles</i> within 1 km of the Site.</p>	<p>No evidence of Badger activity was observed on Site however the grassland provides suitable but limited foraging opportunities. As such, it is considered possible that Badger may occasionally use the Site as part of wider territories.</p>
Birds	<p>ERCISS returned 146no. records of birds within 1km of the Site, including Species of Principal Importance under Section 41 of the NERC Act 2006 and</p>	<p>The mature trees and hedgerows forming the boundaries of the Site provide good quality nesting, and foraging habitats for a variety of common bird</p>

SPECIES	DESK STUDY	HABITAT ASSESSMENT
	IUCN Red Listed species such as Yellowhammer <i>Emberiza citronella</i> , House Sparrow <i>Passer domesticus</i> and Starling <i>Sturnus vulgaris</i> .	species. Nesting birds are considered likely to be present in these habitats during the breeding season.
Reptiles	ERCCIS returned 2no. records of reptile species within 1km of the Site, both of Barred Grass Snake <i>Natrix helvetica</i> .	The unmanaged areas and hedgebanks on Site provide good terrestrial habitat for reptiles, particularly the areas of rubble and logs which offer suitable habitat for shelter and basking.
Amphibians (incl. Great Crested Newt)	ERCISS returned 1no. record of amphibians within 1km of the Site, namely Palmate Newt <i>Lissotriton helveticus</i> . Two ponds are present within 250m of the Site, which may offer potentially suitable breeding habitat for amphibian species (not surveyed).	The unmanaged areas and hedgebanks on Site may provide suitable sheltering and foraging habitat for species such as Common Toad during their terrestrial phase. Great Crested Newt are known to have extremely limited distributions in Cornwall and are considered highly unlikely to be present at or in the vicinity of the Site.
Invertebrates	There were 58no. records of invertebrates identified during the ERCCIS data search including Priority species such as Small Heath <i>Coenonympha pamphilus</i> , Marsh Fritillary <i>Euphydryas aurinia</i> , and Local Priority <sup>1</sup> species Small Red Damselfly <i>Ceriagrion tenellum</i> .	The grassland, hedgerows and trees adjacent to the Site provide suitable habitat for a range of common invertebrate species / species assemblages. However, these are considered reasonably unlikely to support rare or notable invertebrate species / species assemblages as the habitats present on the Site are common and widespread.
Plants	ERCCIS returned 202no. records of notable plant species within 1km of the Site, including Priority Species such as Marsh Pennywort <i>Hydrocotyle vulgaris</i> , Devil's-bit Scabious <i>Succisa pratensis</i> , and Local Priority Species such as Balm-leaved Figwort <i>Scrophularia scorodonia</i> , Field Woundwort <i>Stachys arvensis</i> and Corn Spurrey <i>Spergula arvensis</i> .	No notable plant species were recorded on Site.
Hedgehog	ERCCIS returned 9no. records of Hedgehog <i>Erinaceus europaeus</i> within 1km of the Site.	It is considered possible that Hedgehog may forage within the grassland and shelter within the unmanaged areas of garden and rubble on Site.

<sup>1</sup> Local Priority species refer to those listed in the Cornwall Red Data Book.



SPECIES	DESK STUDY	HABITAT ASSESSMENT
Invasive non-native species	74no. records of invasive non-native flowering plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were returned within 1km of the Site, including Japanese Knotweed <i>Fallopia japonica</i> , Himalayan Balsam <i>Impatiens glandulifera</i> , Montbretia <i>Crocasmia x crocosmiiflora</i> , and Three-cornered Garlic <i>Allium triquetrum</i> .	Montbretia (Schedule 9 invasive plant species) was recorded on Site during the survey visit. Furthermore <i>Crocasmia sp.</i> (exact species not confirmed) was also recorded during the survey visit. Several species of <i>Crocasmia</i> are included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), and as a precautionary measure the <i>Crocasmia</i> recorded on Site should be treated as such.

### 3.3 ECOLOGICAL EVALUATION

Table 1 below provides an analysis of the value of potential ecological receptors described in Sections 3.1-3.2. The valuation of the receptor takes into account factors such as legal protection, local and national conservation status, population trends, range and distribution, diversity, connectivity and rarity (CIEEM, 2018).

Table 1: Evaluation of ecological receptors at Site

ECOLOGICAL RECEPTOR	VALUE	REASON
<b>Designated sites</b>		
Mid Cornwall Moors SSSI	National	Determined by the site's statutory designation. Designated for a diverse mosaic of semi-natural habitats.
Menadew CWS	County	Determined by the site's non-statutory designation. Designated for its complex diversity of habitats and species of note.
Criggan Moor CWS	County	Determined by the site's non-statutory designation. Designated for supporting a mosaic of wetland and heathland communities and several species of note.
<b>Habitats</b>		
g4 – modified grassland	Site	Widespread in the area, low botanical species diversity.
h2a6 – Other native hedgerow	Local	Meet criteria as Habitats of Principal Importance. Although species-poor, form part of wider habitat networks/ corridors through the local area.
u1e – built linear features	Site	No intrinsic value in itself, but the vegetation growing on it (Honeysuckle, Bramble) form part of wider habitat networks/ corridors through the local area.
u1d – Suburban mosaic of developed and natural surface	Site	Vegetated areas of unmanaged garden are considered to be of site value for shelter and foraging.
u1c – Artificial unvegetated, unsealed surface	Site	Rubble and encroaching vegetation provide refuge for a range of wildlife.
<b>Protected and notable species</b>		
Bats (roosting - buildings)	Negligible	The inspection of the metal shed on Site did provide any evidence of roosting bats and did not offer any features suitable for supporting roosting bats.
Bats (roosting - trees)	Low	The trees on Site were inspected from ground level and provided low potential for roosting bats. A mature Goat Willow on the north-western boundary and semi-mature Wild Cherry on the north-eastern boundary were covered in Ivy which had the potential to support roosting bats in the crevices between its thick branches and the tree.
Bats (commuting/ foraging)	Local	The Site provides sheltered foraging habitat for local bats, however, the Site area is small and these opportunities are common and widespread in the surrounding landscape. The hedgerows on the Site boundary are part of a wider network which provide foraging and commuting habitat for a wide range of bat species.
Hazel Dormouse	Site	Suitable habitat adjacent to The Site provides suitable habitat within hedgerows and trees, however the length of hedgerows

ECOLOGICAL RECEPTOR	VALUE	REASON
		present are limited and these opportunities are common and widespread in the wider landscape.
Badger	Site	The grassland area may provide limited foraging commuting opportunities as part of wider territories, however these opportunities are common and widespread in the wider landscape and the Site is unlikely to constitute an important part of a territory due to small area and lack of evidence present.
Nesting birds	Site	Nesting and foraging opportunities within the hedgerows and trees, however these opportunities are common and widespread in the wider landscape.
Reptiles	Site	The Site provides suitable habitat for low numbers of common and widespread reptile species, however these opportunities are common and widespread in the wider landscape.
Amphibians	Site	The Site provides some suitable terrestrial habitat for low numbers of amphibians within hedgebanks and rubble, however these opportunities are common and widespread in the wider landscape.
Invertebrates	Site	Grassland, hedges and Ivy on Site provide habitat for a range of common invertebrates, however these opportunities are common and widespread in the wider landscape.
Plants	Site	Habitat types within the Site are relatively common and widespread. No notable plants or plant species of conservation concern were recorded.
Hedgehog	Site	The Site provides limited habitat for sheltering, foraging, and commuting hedgehog, however these opportunities are common and widespread in the wider landscape.

## 4 ECOLOGICAL IMPACT ASSESSMENT/AVOIDANCE, MITIGATION MEASURES

Ecological impacts on ecological receptors and avoidance/mitigation and enhancement measures to address them are summarised in Table 2 below.

*Table 2: Ecological impacts by ecological receptor and associated avoidance/mitigation and enhancement measures*

ECOLOGICAL RECEPTOR	PHASE	POTENTIAL IMPACTS	MITIGATION/AVOIDANCE/ENHANCEMENT MEASURES	RESIDUAL EFFECTS
Mid Cornwall Moors SSSI	Construction	Due to the nature and size of the development, it is considered impacts on this site are unlikely.	None required.	No significant residual effects anticipated
	Operation			
Menadew CWS	Construction	Due to the nature and size of the development, it is considered impacts on this site are unlikely.	None required.	No significant residual effects anticipated
	Operation			
Criggan Moor CWS	Construction	Due to the nature and size of the development, it is considered impacts on this site are unlikely.	None required.	No significant residual effects anticipated
	Operation			
Grassland habitat	Construction	Loss of entire habitat during construction phase (c.64m <sup>2</sup> )	Re-seeding of grassland in areas outside of the residential unit footprint with wildflower-rich seed mixture post construction.	Probable no negative long-term impacts

Hedgerow habitat	Construction	Cutting back of hedgerow and loss of basal ground flora during clearance for building footprint. Risk of damage to trees by machinery.	All retained hedgerows and trees within and bordering the proposed development areas should be protected during construction in accordance with BS5837:2012 (Trees in relation to design, demolition and construction) or the recommendations of a Suitably Qualified Arboriculturist (SQA). This will include use of suitable protection fencing (e.g., Heras fencing), where appropriate, to prevent accidental damage to stems and root compaction during the construction phase.	No significant residual effects anticipated
Bats (roosting)	Construction	Potential for trees to be cut back or removed during the construction phase.	Any removal of trees on Site must be preceded by a Preliminary Bat Roost Assessment inspection by a licensed bat ecologist. Where required, this may included tree climbing inspections.	Moderate positive impact (subject to implementation of enhancement measures).
	Operation	Provision of enhanced roosting opportunities.	To provide ecological enhancement, a minimum of 1no. integrated or external bat boxes should be integrated into the proposed dwelling. See measures detailed in section 5.1.	
Bats (foraging and commuting)	Construction	Construction-phase lighting has the potential to disturb foraging and commuting bats.	A sensitive lighting strategy should be implemented during the construction phase including measures such as night-time curfews (i.e., no night working) to minimise potential for indirect adverse effects of artificial lighting on wildlife.	No significant residual effects anticipated
	Operation	Minor increases in artificial light spill into adjacent naturalised habitats.	Although levels of artificial light spill produced by the proposals are considered unlikely to result in significantly greater impacts on foraging and commuting bat habitat than existing (due to the Site's existing urban edge setting), it is recommended that proposals should seek to minimise light spill to reduce adverse effects of artificial light on nocturnal wildlife. A selection of measures to be considered for incorporation into the scheme design is set out below. More detailed technical guidance on avoiding lighting impacts on bats is provided by the Institute of Lighting Professional (ILP, 2018).  For external lighting:	

			<ul style="list-style-type: none"> <li>• Only the minimum amount and intensity of external lighting needed for safety should be used;</li> <li>• Minimise light trespass (spillage) onto bat habitats through use of directional lighting at the appropriate height and positioning to light only the intended area. Upwards lighting should be avoided;</li> <li>• Luminaires should have a warm white spectrum (ideally &lt;2700Kelvin) with minimal blue light component and should lack a UV component when manufactured. The peak wavelength should be higher than 550nm;</li> <li>• Use narrow spectrum bulbs (as this will lower the range of species affected by the lighting). LED luminaires are usually best due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.</li> </ul>	
Hazel Dormouse	Construction	Risk of damage to hedgerow and tree habitat. No proposed loss of overall habitat extent.	See hedgerow habitat mitigation measures above.	No significant residual effects anticipated
Badger	Construction	There is a risk that Badger may become trapped if excavations are left open overnight.	Any excavations should be covered at night, or a plank /ramp should be placed to allow an escape route for wildlife which may become trapped.	No significant residual effects anticipated
Nesting birds	Construction	Risk of damage and/or destruction of nests if tree or scrub vegetation is removed during the active breeding season.	See hedgerow habitat mitigation measures above. It is strongly recommended that should removal of vegetation with the potential to support nesting birds be required, this should be timed to avoid the main bird nesting period, which falls between March and August inclusive. Any removal within this period must be preceded by a nesting check by an experienced ecologist. If active nests are identified vegetation removal must be postponed until the nesting attempted has	No significant residual effects anticipated

			completed or the young have fledged. <b>Please note that attempting to remove vegetation between March and August inclusive may result in significant programme delays.</b>	
Reptiles/amphibians	Construction	There is a minor risk of killing or injury during clearance of grassland habitats and rubble.	<p>Pre-construction, any taller ruderal vegetation and scrub should undergo a phased vegetation clearance methodology, whereby two cuts are undertaken moving in a direction from the centre of the Site towards retained habitats. The first cut should be to approximately 20cm and then 24 hours following this a second cut to ground level can be completed. These works should only be undertaken during the reptile active months (generally March to October inclusive), to allow individuals to move out of the area of their own accord. Creating and maintaining a short grassland sward will discourage reptiles away from the development areas until soil is stripped in preparation for construction works.</p> <p>Removal of ground-level vegetation and stripping of soil from areas supporting suitable reptile habitat should be carried out under guidance from a suitably experienced ecologist, again during reptile active months.</p> <p>Any reptiles or amphibians found during the habitat removal should be moved to a place of safety away from the area of works to areas of retained vegetation in the north of the Site.</p> <p>Ecological enhancement could be provided through habitat creation in the form of log/brush piles on Site.</p>	No significant residual effects anticipated
Hedgehog	Construction	There is potential for Hedgehogs to become trapped in excavations left open overnight.	See Badger mitigation above.	No significant residual effects anticipated

## 5 BIODIVERSITY ENHANCEMENTS

The following enhancement measures for biodiversity are proposed for inclusion at the Site in line with requirements under the Cornwall Local Plan and NPPF (2023).

*Table 3: Proposed habitat creation, enhancements and ecological features*

### Invertebrate-friendly shrub and flower planting

Development proposals should include areas of wildlife-friendly planting using native nectar-/pollen-rich species of flowers and shrubs within the planting scheme for the development in order to maximise its value for a range of species. These areas will provide enhanced opportunities for pollinating insects which in turn can benefit local bird and bat populations.



### Wildlife-friendly gardening techniques

Gardens can provide havens for local wildlife if managed appropriately. Ways of promoting the wildlife value of the wider garden include:

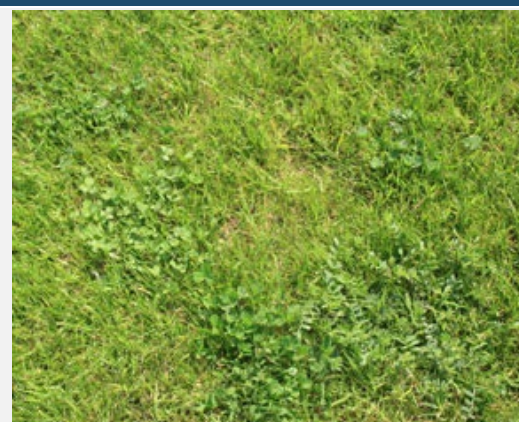
- leaving wild/ messy areas and deadwood piles,
- planting nectar/ fruit producing plants,
- provision of insect boxes for solitary bees.

These principles are suggested for inclusion in the creation of the landscape scheme for the Site.



### Species-rich amenity grassland

New areas of amenity grassland will use a species-rich lawn seed mixture or wildflower turf (such as WFG20 Eco Species Rich Lawn by Germinal Amenity) which are suitable for frequently mown grassland and provide a greater diversity of habitats and opportunities to benefit a range of species.





### Habitat piles

Arisings from habitat clearance/management should be used to create habitat piles including logs, brash and some grass cuttings. These will be located along retained hedgerows to provide foraging and refuge opportunities for reptiles, amphibians, invertebrates, and a range of other species.



### Hedgehog boxes

1no. Hedgehog box to be provided adjacent to a hedgerow and hidden within an area of rough vegetation to provide shelter for this Priority Species.



Source: [www.nhbs.com](http://www.nhbs.com)

### Bird Boxes

A generalist bird nesting box (e.g. Schwegler 1B/ Vivara Pro Seville Nest Box) suitable for common bird species, either mounted on a tree or built structure.

This should be sited at least 3m off the ground and ideally north- to east-facing to avoid overheating and prevailing weather conditions.



Source: [www.nhbs.com](http://www.nhbs.com)

### Bat boxes

Minimum provision of 1no. of the following (or equivalent) would provide long-term enhancement for roosting bats at the Site:

- A pre-fabricated integrated bat roosting feature suitable for the proposed construction type (e.g. Ibstock Enclosed Bat Box) installed within the new extension.

OR

- A Vivara Pro Beaumaris Bat Box or equivalent wall-mounted box mounted externally on walls of the property.



Source: [www.nhbs.com](http://www.nhbs.com)

Bat boxes should be at least 2-3m off the ground, and ideally on south- to west- facing aspects to benefit from solar warming.

### Bee bricks

Minimum of 1no. bee bricks (e.g. Green & Blue) to be integrated into the walls of the new dwelling. This should be positioned in a warm sunny spot, south facing, with no vegetation in front of the fascia. Ideally placed at least 1 metre from the ground with no upward limit.



Source: [www.nhbs.com](http://www.nhbs.com)

## 6 MANAGEMENT PLANS

### 6.1 CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN (CEMP)

The contractors' CEMP should include the mitigation measures as described within this report to ensure these are delivered during the construction phase.

The CEMP should include details of measures to be implemented in advance of (or at the immediate commencement of) the main construction period (such as works associated with any advanced vegetation clearance) and measures which must be implemented throughout the main construction phase.

The following should also be included within the CEMP:

- Identification of ecological protection zones where works are to be restricted;
- Areas where protective fencing is to be installed and maintained;
- Procedures to avoid pollution incidents;
- Ecological working methodologies to avoid/minimise impacts on sensitive ecological receptors;
- Timing of works to avoid/minimise impacts on sensitive ecological receptors;
- Where and when ecological supervision and/or toolbox talks to Site personnel are required;
- Method statements for installation of enhancement features (e.g. bat and bird boxes);
- Responsible persons.

## 7 CONCLUSIONS

Based on the findings and recommendations of this assessment, with proposed biodiversity avoidance, mitigation and compensation measures in place, it is concluded that the development as proposed would have no likely significant effects or adverse impacts on biodiversity.

It can therefore be concluded that the development as proposed meets the relevant legislation and policy requirements in accordance with Cornwall Local Plan, Environment Act 2021, the NPPF 2021 and NERC Act 2006.

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## 9 APPENDICES

### Appendix I: Legislation and Planning Policy

This report has been produced with reference to the following relevant wildlife and environmental legislation and planning policy.

LEGISLATION/ PLANNING POLICY	LINK
The Environment Act 2021. Part 6: Nature and Biodiversity	<a href="https://www.legislation.gov.uk/ukpga/2021/30/pdfs/ukpga_20210030_en.pdf">https://www.legislation.gov.uk/ukpga/2021/30/pdfs/ukpga_20210030_en.pdf</a>
The Conservation of Habitats and Species Regulations 2017 (as amended)	<a href="https://www.legislation.gov.uk/uksi/2017/1012/contents/made">https://www.legislation.gov.uk/uksi/2017/1012/contents/made</a>
The Wildlife and Countryside Act (W&CA) 1981 (as amended)	<a href="http://www.legislation.gov.uk/ukpga/1981/69/contents">http://www.legislation.gov.uk/ukpga/1981/69/contents</a>
Countryside and Rights of Way (CRoW) Act 2000	<a href="http://www.legislation.gov.uk/ukpga/2000/37/contents">http://www.legislation.gov.uk/ukpga/2000/37/contents</a>
Natural Environment and Rural Communities (NERC) Act 2006	<a href="http://www.legislation.gov.uk/ukpga/2006/16/contents">http://www.legislation.gov.uk/ukpga/2006/16/contents</a>
ODPM Circular 06/2005: Biodiversity and Geological Conservation	<a href="https://www.gov.uk/government/publications/biodiversity-and-geological-conservation-circular-06-2005">https://www.gov.uk/government/publications/biodiversity-and-geological-conservation-circular-06-2005</a>
Cornwall Local Plan (2010 – 2030)	<a href="https://www.cornwall.gov.uk/media/ozhj5koz/adopted-local-plan-strategic-policies-2016.pdf">https://www.cornwall.gov.uk/media/ozhj5koz/adopted-local-plan-strategic-policies-2016.pdf</a>
UK Post 2010 Biodiversity Framework	<a href="http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf">http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf</a>
National Planning Policy Framework (2021 update)	<a href="https://www.gov.uk/government/publications/national-planning-policy-framework--2">https://www.gov.uk/government/publications/national-planning-policy-framework--2</a>

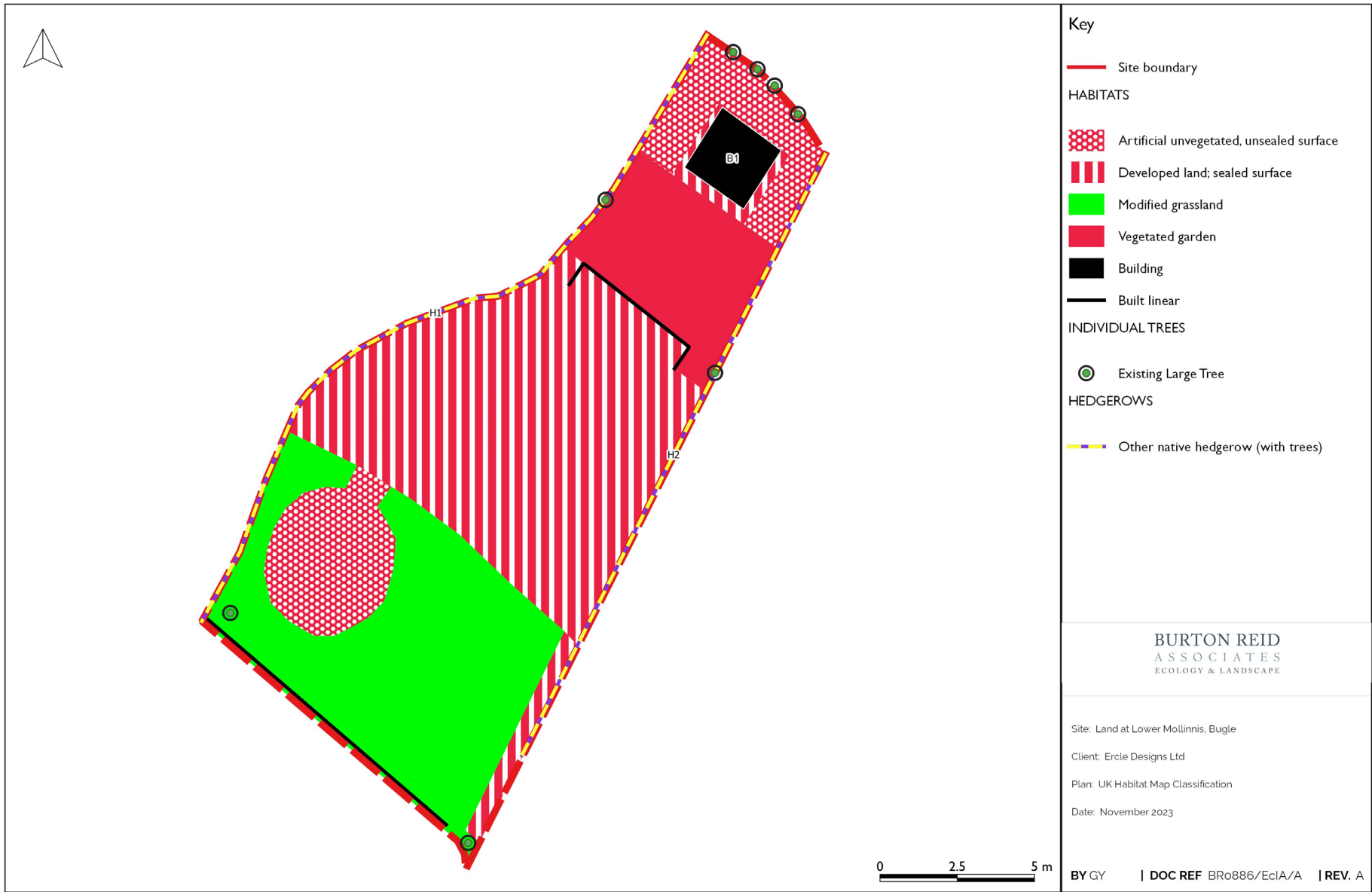
The most relevant legislation pertaining to each of the protected species described within this document is given in the table below.

SPECIES	LEGISLATION	PROTECTION
Bats (all species)	Sch.5 of The Wildlife and Countryside Act 1981 (as amended)	It is an offence to: <ul style="list-style-type: none"> <li>Intentionally or deliberately take, kill or injure a bat;</li> <li>Damage, destroy or obstruct access to bat roosts;</li> <li>Deliberately disturb bats in a resting place or roost.</li> </ul>
	Conservation of Habitats and Species Regulations 2017 (as amended)	
Hazel Dormouse	Sch.5 of The Wildlife and Countryside Act 1981 (as amended)	It is an offence to: <ul style="list-style-type: none"> <li>Intentionally or deliberately take, kill or injure;</li> <li>Damage, destroy or obstruct access to any structure or place used for shelter or protection;</li> <li>Disturb an animal occupying such a structure or place.</li> </ul>
	Conservation of Habitats and Species Regulations 2017 (as amended)	
Great Crested Newt	Sch.5 of The Wildlife and Countryside Act 1981 (as amended)	It is an offence to: <ul style="list-style-type: none"> <li>Intentionally or deliberately take, kill or injure;</li> <li>Damage, destroy or obstruct access to any structure or place used for shelter or protection;</li> <li>Disturb an animal occupying such a structure or place.</li> </ul>
	Conservation of Habitats and Species Regulations 2017 (as amended)	

SPECIES	LEGISLATION	PROTECTION
Reptiles*	Sch.5 of The Wildlife and Countryside Act 1981 (as amended)	Part of sub-section 9(1) and all of sub-section 9(5) apply; <ul style="list-style-type: none"> <li>Prohibits the intentional killing and injuring of reptile species</li> </ul>
Badgers	The Protection of Badgers Act 1992	It is an offence to: <ul style="list-style-type: none"> <li>intentionally or recklessly damage, destroy or obstruct access to a sett; and</li> <li>to disturb a Badger whilst it is occupying a sett.</li> </ul>
Nesting birds (all species)	The Wildlife and Countryside Act 1981 (as amended)	It is an offence to: <ul style="list-style-type: none"> <li>Kill, injure, or take any wild bird;</li> <li>Take, damage or destroy the nest of any wild bird while that nest is in use or being built;</li> <li>Take or destroy an egg of any wild bird.</li> </ul>
Non-native invasive plants	Sch.9 of The Wildlife and Countryside Act 1981 (as amended)	It is an offence to: <ul style="list-style-type: none"> <li>Plant, or otherwise cause to grow, in the wild any plant species listed on Schedule 9.</li> </ul>

\* Excludes Sand Lizard and Smooth Snake for which a higher level of protection is granted. These species were not considered here, as no suitable habitat was available for them and the Site falls outside of their recorded range.

Appendix II: UK Habitat Classification Survey Map





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