



ECOLOGICAL IMPACT ASSESSMENT

**Land Adjacent to Pucks Croft Cottage, Rusper,
West Sussex**

On behalf of: ECE Planning

Client:	ECE Planning			
Project:	Land Adjacent to Pucks Croft Cottage, Rusper			
Reference:	LLD3245-ECO-REP-001-01-ECIA			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.



LIZARD

Landscape Design and Ecology

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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by ECE Planning Ltd to undertake an ecological impact assessment of proposals at Land Adjacent to Pucks Croft Cottage, Rusper, West Sussex (*Grid Reference: TQ 20425 36910 – hereafter referred to as 'the site'*). A preliminary ecological appraisal (*PEA*) was previously undertaken in 2020 and again on the 23rd May 2024 to appraise the existing ecological resource within the site and surrounding area. Phase 2 protected species surveys were subsequently undertaken and updated before a full ecological impact assessment of the proposals was completed.

The site consists of an existing dwelling, single garage, timber framed barn, hard landscape access areas, garden areas and a grassland paddock. The construction zone and immediate surroundings are largely formed of hard surfaces, existing buildings and modified and other neutral grassland, with introduced shrub planting and trees. The site is generally considered to contain diverse grassland with the exception of the existing structures, the surrounding habitats are of moderate-high value.

Development proposals are not likely to have a direct adverse impact upon any surrounding non-statutory designated site. However, the site is located within the Sussex North Water Supply Zone whereby the scheme shall have to demonstrate water neutrality. Subject to a strategic solution being forthcoming, the scheme is unlikely to have an adverse impact upon any other surrounding designated site.

The grassland supports a 'good' population of slow worms and low population of newly recorded grass snake. A reptile translocation shall relocate these reptiles into the southern section of the site, which shall be retained and enhanced for reptiles.

The dwelling (B2) was identified as a roost in 2020 for three common pipistrelle bats, whilst the barn (B3) was recorded as a roost for two common pipistrelle bats and a single long-eared bat. The latest 2024 bat survey results have concluded that both B2 and B3 continue to support bat roosts. The works shall require a Natural England Mitigation Licence to proceed. The licence shall ensure that the proposals do not affect the favourable conservation status of the species.

The site also provides some suitable habitat for invertebrates, breeding birds and small mammals; avoidance and mitigation measures are outlined herein to ensure the protection of these features.

The overall impacts of the planned development upon biodiversity will be **negligible**.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by ECE Planning Ltd to undertake an ecological impact assessment of proposals at Land Adjacent to Pucks Croft Cottage, Rusper, West Sussex (*Grid Reference: TQ 20425 36910 – hereafter referred to as ‘the site’*).
- 1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).
- 1.3 An initial Preliminary Ecological Appraisal (PEA) was originally undertaken in 2020 and again on the 23rd May 2024 to appraise the existing ecological resource within the land and the surrounding area. Subsequent updated reptile and bat surveys were completed through the summer of 2024. Potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. Residual impacts are then discussed once all mitigation and compensation measures have been taken into account.

Site Information

- 1.4 The site consists of an existing dwelling, single garage, timber framed barn, hard landscape access areas, garden areas and a grassland paddock. The site is bordered with fences, hedges and trees forming a woodland edge. The north-western boundary borders the Horsham Road; the northern and eastern boundaries border extensive open grassland gardens; the southern boundary borders an area of open space known as Baldhorns Copse, and the western boundary borders an area of deciduous woodland.
- 1.5 The site is approximately 5.85 metres above sea level and measures approximately 0.3 Ha. Soils on site are described as *slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils*. The nearest area of woodland is just outside the western boundary of the site.

Surrounding Landscape

- 1.6 The site is located within the rural village of Rusper in Horsham District, west of Crawley and north of Horsham. The surroundings consist of small linear villages, pastoral land bounded by deep hedges, and parcels of woodland.
- 1.7 The local area is well-wooded; the nearest area listed on *The National Forest Inventory* is a 3.63-hectare plot of broadleaved woodland located 25 m to the south-west, within Baldhorns Copse. Part of Baldhorns Copse is also designated as Ancient Woodland.

Development Proposals

- 1.8 The development proposals consist of the extension and renovation of the existing dwelling, extension of the existing garage and demolition of the now derelict barn followed by the construction of 4no. new detached dwellings. The overgrown gardens shall be re-landscaped, and the existing access tracks shall be made into permanent hard surfaced access drives.

Survey Aims

- 1.9 The aim of the baseline surveys and Ecological Impact Assessment has been:
- Describe baseline conditions at the site;
 - Determine the importance of features which may be impacted by the scheme;
 - Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures;
 - To identify any residual impacts;
 - To provide details of enhancements to be incorporated into the scheme;
 - Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be proposed by the relevant authority.

2.0 PLANNING POLICY AND LEGISLATION

Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:

- The Conservation of Habitats and Species Regulations 2017;
- The Wildlife and Countryside Act 1981 (as amended);
- The Natural Environment and Rural Communities (NERC) Act 2006; and
- The Environment Act 2021.

2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

2.3 The National Planning Policy Framework (NPPF) 2023 sets out the government planning policies for England and how they should be applied. '*Chapter 15: Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'

2.4 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.

Local Planning Policy

- 2.5 Policy 31 of the *Horsham District Planning Framework Nov 2018* states;
- *Development will be supported where it can demonstrate that it maintains or enhances the existing network of green infrastructure. Proposals that would result in the loss of existing green infrastructure will be resisted unless it can be demonstrated that new opportunities will be provided that mitigates or compensates for this loss and ensures that the ecosystem services of the area are retained.*
 - *Development proposals will be required to contribute to the enhancement of existing biodiversity and should create and manage new habitats where appropriate. The Council will support new development which retains and /or enhances significant features of nature conservation on development sites. The Council will also support development which makes a positive contribution to biodiversity through the creation of green spaces, and linkages between habitats to create local and regional ecological networks.*
 - *Where felling of protected trees is necessary, replacement planting with a suitable species will be required. Particular consideration will be given to the hierarchy of sites and habitats in the district as follows: i. Special Protection Area (SPA) and Special Areas of Conservation (SAC) ii. Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) iii. Sites of Nature Conservation Importance (SNCIs), Local Nature Reserves (LNRs) and any areas of Ancient woodland, local geodiversity or other irreplaceable habitats not already identified in i & ii above.*
 - *Where development is anticipated to have a direct or indirect adverse impact on sites or features for biodiversity, development will be refused unless it can be demonstrated that: i. The reason for the development clearly outweighs the need to protect the value of the site; and, ii. That appropriate mitigation and compensation measures are provided.*
- 2.6 The current development proposals comply with all national and local planning policy with regards biodiversity.

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAGIC*) was consulted for all designated sites within a practicable zone of influence of the site. This included Local Nature Reserves (LNRs), National Nature reserves (NNR) and Sites of Special Scientific Interest (SSSIs) within a 2.0km radius of the site, and international statutory designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsars (Wetlands of International Importance) within a 10km radius of the site. Where SAC's designated for their bat interest are present this Zol has been extended to 12km in accordance with recent guidance (CIEEM, 2020).
- 3.1.2 *MAGIC* was also used to provide information on all Priority Habitats within a 2.0km radius of the site, and all records of granted European Protected Species Mitigation licences within a 1.0km radius of the site.
- 3.1.3 In accordance with Natural England's GCN Mitigation Guidelines (English Nature, 2001) a desktop search was undertaken to identify ponds within 500m and 250m of the site, which may have the potential to support breeding great crested newts (GCN) *Triturus cristatus*, using Ordnance Survey mapping, the *MAGIC* database and aerial photography.

3.2 Preliminary Ecological Appraisal

- 3.2.1 The initial field survey was undertaken on the 23rd May 2024 by Louise Barker (*MSc BSc (Hons)*), Senior Ecologist with 8 years' experience. Weather conditions were warm (c.19°C), with a gentle southerly wind (Beaufort Scale 1) and 20% cloud cover.

- 3.2.2 The field survey comprised a walkover inspection of the site and immediately adjacent land and boundaries features, in which ecological features were noted and mapped in accordance with principles of the UKHabs-Professional Classification System (Butcher *et al*, 2020). A minimum mapping unit of 25m² was used and habitats were identified to at least level 4 wherever practicable.
- 3.2.3 A list of plant species was compiled, together with an estimate of abundance made according to the DAFOR scale (*Table No. 11*). In addition, Target notes (*Table No. 12*) were used to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map.
- 3.2.4 The survey methodology was extended to provide more detail in relation to the sites potential to support rare or protected fauna, as described by the *Chartered Institute of Ecology and Environmental Management's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017)*. The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual (Gent and Gibson, 2003)* and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023)*.

3.3 Preliminary Bat Roost Assessment

- 3.3.1 A Daytime Bat Walkover (DBW) was undertaken on 23rd May 2024 by Louise Barker (Level 2 Bat Survey Licence 2023-11422-CL18-BAT) who undertook an external assessment of all trees and structures within the proposed construction zone.
- 3.3.2 The Daytime Bat Walkover (DBW) survey entailed a slow walkover of the site, during which time the surveyor identified any structures, trees and other features that could be suitable for bats to roost in, and any habitats which could be suitable for bats to commute, forage or swarm in.

- 3.3.3 During this survey any direct evidence of bats was searched for and recorded, such as grease marks, urine stains, bat droppings, feeding remains and dead / live bats. Furthermore, any structures or trees which offered features with the potential to support bats were noted. For trees this included the identification of features such as, but not limited to, cracks, crevices and holes naturally formed by trees. For structures this included the identification of features such as, but not limited to, slipped, missing or uneven tiles, gaps around the soffit / barge board, raised flashing.

Evaluation Criteria

- 3.3.4 All suitable bat habitat was assessed in accordance best practice criteria (Collins, 2023), which is outlined herein. During the survey all trees within and immediately adjacent to the site were assessed using the following criteria:

Table No. 01 – Criteria for Assessing the Bat Roosting Suitability of Trees

Suitability	Description
None	Either no potential roosting features in the tree, or highly unlikely to be any.
FAR	Further assessment required to establish if potential roosting features are present in the tree.
PRF	A tree with at least one potential roosting feature present.

- 3.3.5 Furthermore, all structures were assessed externally, and internally wherever possible for their potential to support bats, using the following criteria:

Table No. 02 – Criteria for Assessing the Bat Roosting Suitability of Structures

Potential Suitability	Description
None	No habitat features on site likely to be used by any roosting bats at any time of year.
Negligible	No obvious habitat features on site likely to be used by roosting bats. However, some small uncertainty remains, as bats can use small and apparently unsuitable features occasionally.

Potential Suitability	Description
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these do not provide enough shelter, space, protection, appropriate conditions or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but unlikely to support a roost of high conservation status, irrespective of species conservation status.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat, with the potential to support high conservation status roosts irrespective of species conservation status.
Confirmed	Direct evidence of bats identified.

3.3.6 Finally, an assessment of the winter hibernation potential of the structures was made, in accordance with the following criteria:

Table No. 03 – Criteria for Assessing the Winter Bat Roosting Suitability of Structures and Trees

Potential Suitability	Description
Low	No or very limited potential winter roosting habitat
Moderate	Non classic site
High	'Classic sites', which offer stable humidity and consistent temperatures throughout the winter period, such as underground sites, cellars, tunnels etc.

3.4 Bat Emergence Surveys

3.4.1 Emergence surveys of Building B1, B2 and B3 were undertaken in June and July 2024 in accordance with guidelines outlined in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023)*.

3.4.2 Bat surveyors were each assigned a survey point, ensuring that all features of interest were covered (refer to Figure No. 02 - Bat Survey Plan for locations of survey points) were utilised, along with Nightfox IR cameras to provide additional detail and record footage for review.

3.4.3 The dusk surveys started 15 minutes before sunset and terminated 1.5 hours after. Bats were identified using full-spectrum bat detectors Echo Meter Touch 2 Pro. Sound analysis was undertaken using Kaleidoscope Viewer. Table No. 04 shows the details of the bat survey.

Table No. 04 – Bat Survey Details

Date	10/06/2024	09/07/2024	30/07/2024
Survey Type	Dusk	Dusk	Dusk
Building No.	B3	B2 & B3	B1, B2 & B3
Surveyors	COR, FB	SH, JP, LB, JT	COR, AC, OB, KB, WM, PA
Weather	11°C, WF0, 1/8 cloud, dry.	17°C, WF3, 7/8 cloud, light rain	24°C, WF0, 1/8 cloud, dry
Sunset / Sunrise	21:15	21:15	21:21
Start time	21:00	21:00	21:06
Finish time	22:45	22:45	22:51

Surveyor Details

3.4.4 The surveys were led by licenced surveyors, assisted by experienced field ecologists. The following surveyors were used during these surveys:

- Catherine O'Reilly – MCIEEM, NE Class 2 Licence Holder, 10 years survey experience.
- Louise Barker – NE Class 2 Licence Holder, 7 years' survey experience.
- Sam Hall – Consultant Ecologist with 3 years' experience.
- Will Mills – Consultant Ecologist with 5 years' experience.
- James Tann – Assistant Ecologist with 1 year survey experience.
- Joe Peterson – Assistant Ecologist with 1 year survey experience.
- Fleur Booth - Assistant Ecologist with 2 year survey experience.

- Penny Andrews – Field Surveyor with 2 years survey experience.
- Angus Cairncross – Field Surveyor with 2 years survey experience.

3.5 Great Crested Newt Habitat Suitability Index Assessment

3.5.1 The *Habitat Suitability Index (HSI)* was developed by *Oldham et al (2000)* as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against 10 no. different criteria, each of which have a bearing on the likelihood of great crested newts (*Triturus cristatus*) being present in the pond under consideration.

3.5.2 The 10 no. attributes against which ponds can be assessed are:

- *Geographic Location;*
- *Pond Area (at its highest level);*
- *Permanence;*
- *Water Quality;*
- *Perimeter Shading;*
- *Numbers of Wildfowl;*
- *Numbers of Fish Present;*
- *Pond Count (within a 1.0 km radius);*
- *Terrestrial Habitat (within 250.0 m);*
- *Macrophyte Coverage.*

3.5.3 The *HSI* results in a score between 1 and 0; with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support great crested newts and is not a substitute for more detailed presence / absence surveys for protected species of amphibian.

3.6 Reptile Survey

- 3.6.1 50 no. artificial reptile refugia (roofing felt; 1.0 x 0.50 m) were laid out in all suitable habitat on the 21st of May 2024. Refugia were allowed to bed-in for 18 days prior to survey visits beginning on the 4th of June 2024. Reptile populations were assessed in accordance with population level criteria as stated for the Key Reptile Site Register (Froglife, 1999). This system classifies populations of individual reptile species into three population categories assessing the importance of the population. These categories are based on the total number of adult animals observed during individual survey occasions and based upon a survey density of 10/Ha, given the site area is approx. 0.3 ha and a far higher density of refugia were used (100 no. mats /Ha), these have been taken into consideration within the result.
- 3.6.2 07 no. site visits were conducted, where the number, species, age and sex of the reptiles' present were recorded.
- 3.6.3 Surveys were undertaken where possible during recommended times (08:00–11:00 and 16:00-18:30) with suitable weather conditions for surveying reptiles (*guidelines recommend temperatures 9-18°C with intermittent or hazy sunshine during warm days*). Weather conditions recorded at each survey visit are shown in the table below.

Table No. 05 – Details of Weather Conditions during the Reptile Surveys

Survey	Date of Visit	Time	Temp.	Weather
1	04/06/24	9:30	16°C	Dry, WF1, 90% cloud
2	07/06/24	8:30	13°C	Dry, WF1, 0% cloud
3	12/06/24	10:00	13°C	Dry, WF1, 30% cloud
4	18/06/24	10:00	17°C	Dry, WF1, 30% cloud
5	24/06/24	9:30	20°C	Dry, WF1, 0% cloud
6	01/07/24	9:15	16°C	Dry, WF2, 70% cloud
7	16/07/24	9:25	16°C	Dry, WF0, 30% cloud

- Local;
- Site Level;
- Negligible.

3.8.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- Its inclusion as a Designated Site or other protected area;
- The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);
- The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);
- The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;
- The sites social and economic value.

3.8.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018). This assessment considers residual impacts (once all mitigation has been taken into account), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*".

3.8.5 The confidence that a certain activity will result in a significant adverse effect has been ranked as follows:

- Highly probable;
- Probable;
- Unlikely;
- Highly unlikely.

3.8.6 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

3.9 Constraints and Limitations

- 3.9.1 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible or may have been otherwise inconspicuous at the time of the survey and hence overlooked. These are accepted constraints associated with the standard Survey Methodology.
- 3.9.2 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Desk Study

4.1.1 The following designated sites are not necessarily representative of the existing site's ecology but are indicative of the ecological context of the surrounding area; a factor that may be important when assessing the presence / absence potential of certain species groups.

Statutory Protected Sites

4.1.2 No statutory protected sites were identified present within the zone of influence of the development.

4.1.3 The development is within the Impact Risk Zone of House Copse SSSI (2.25 km SE) but does not fall into a category requiring consultation with *Natural England*. The site is c. 20 km from the Ashdown Forest SPA/SAC; Ebernoe Common SAC and The Mens SAC and as such does not fall into any of their impact zones. The site is however located within the Sussex North Water Supply Zone, whereby additional water extraction could have an adverse effect upon the integrity of Arun Valley SAC.

Non-Statutory Protected Areas

4.1.4 *Sites of Nature Conservation Importance (SNCIs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2023)* and as such are material considerations when assessing planning applications. The following *SNCIs* were identified within 2.0km of the site:

Table No. 06 – Non-Statutory Protected Sites

Site	Location
Horsegills Wood SNCI	325 m NW
Orltons Copse SNCI	2000 m NE

- 4.1.5 The proposed development site is not located either within or adjacent to any SNCI. The site is not within or near any Bat Sustenance Zone. Given the intervening distance and the lack of connectivity between the proposed development site and surrounding sites the development is predicted to have a negligible impact upon surrounding SNCI's.

4.2 Habitats

Desk Study

- 4.2.1 UK Priority Habitats within 2.0 km of the site include; *ancient woodland; deciduous woodland; lowland meadows; ponds; traditional orchard*. None of these habitats are present within the site, although an area of deciduous woodland is only c. 25 m away. An area of the woodland to the west of Baldhorns Copse is designated as Ancient Woodland. The source of the River Mole is within Baldhorns Copse just to the south-west of the site.

Site Assessment

- 4.2.2 Habitats within and adjacent to the development site area include:
- *u1b5 - Existing Buildings;*
 - *u1b - Developed Land; Sealed Surfaces;*
 - *g3c.18.32.847 - Other Neutral Grassland; Species-rich with Scattered Trees; Introduced Shrubs;*
 - *h3h.10.522.523 - Mixed Scrub; Scattered; Native; Non-Native*
 - *h2a – Native Hedgerows;*
 - *w1f - Other Broadleaved Woodland.*

Existing Buildings

- 4.2.3 The site contains a timber barn, a detached dwelling and a small brick store / garage connected to an adjacent garage present to the north. The buildings are detailed later in the bat roost assessment.

Developed Land; Sealed Surfaces

- 4.2.4 The house is surrounded by paved and gravel paths, which are now overgrown. Previous gravel tracks are also overgrown with ephemeral species and scrub. These areas offer **negligible** ecological value.

Other Neutral Grassland

- 4.2.5 To the front of the property is what would have originally been lawn (containing a lower diverse sward), and a paddock (with a higher diverse sward). The grass across the entire site has not been managed regularly and now has a high sward height of c.80cm. The grasses present include common species such as cocksfoot (*Dactylis glomerata*) whilst a number of flowering plants are present, with large numbers of marsh thistle (*Cirsium palustre*); oxeye daisy (*Leucanthemum vulgare*); common centaury (*Centaureum erythraea*) and fleabane (*Pulicaria dysenterica*). The grassland is of **site** value.

Scattered Trees

- 4.2.6 A small number of scattered ornamental trees were present within the gardens such as apple (*Malus sp.*). The boundaries contain several lines of mature pedunculate oaks (*Quercus robur*). The woodland edge is lined with Scots pine (*Pinus sylvestris*) and wild cherry (*Prunus avium*). The garden trees are of **site** value whilst the mature native trees are of **local value**.

Introduced Shrubs

- 4.2.7 The gardens contained a number of shrub and vine species such as grape; Wisteria, Berberis and cypress. Smaller herbaceous plants such as wild strawberry and Bergenia line the driveway. The gardens are now overgrown with ruderal and scrub, including nettle and bramble. Of note are several small specimens of *Cotoneaster horizontalis* growing in the gravel. This plant is listed on **Schedule 9 Part II of the Wildlife and Countryside Act** as an invasive species. The habitat is of **negligible** ecological value.

Mixed Scrub

- 4.2.8 Surrounding the barn is an area of dense scrub consisting mainly of blackthorn (*Prunus spinosa*). Several patches of scattered scrub, consisting largely of bramble with small elder (*Sambucus nigra*) and ash (*Fraxinus excelsior*) saplings are noted. The habitats are of **site value**.

Hedges

- 4.2.9 Small sections of now defunct ornamental and native hedges exist along fence lines, and a new cypress hedge has been planted in the neighbouring garden to the east. The northern boundary is lined on the neighbour's side by a tall hedge which at the western edge is mainly formed of introduced shrubs, but at the eastern end becomes formed of small trees such as hazel (*Corylus avellane*). Hedges are of **site value** at most.

Broadleaved Woodland (off-site/adjacent land)

- 4.2.10 The nearby woodland runs close to the edge of the site, with trees on the south-western boundary forming a similar habitat. The woodland edge is formed of scots pine, wild cherry and silver birch (*Betula pendula*) with occasional ash and oak. There is then a footpath, beyond which are several mature horse chestnuts (*Aesculus hippocastanum*) and then the woodland proper, formed of oak, hornbeam (*Carpinus betulus*) and sycamore (*Acer pseudoplatanus*). The woodland is of **local value**. An area of the woodland to the west of Baldhorns Copse is designated as Ancient Woodland. This irreplaceable habitat is of **district value**.

4.3 Protected Species

Amphibians

Desk Study

- 4.3.1 Great crested newts (GCN) and their resting / breeding sites are protected under The Conservation of Habitats and Species Regulations 2017 and The Wildlife and Countryside Act 1981 (as amended). There are 4 no. records of GCN within 2.0 km of the site, including 2015 records from Millfields Farm within 500m of the site.

- 4.3.2 From satellite imagery a total of 4 no. water bodies were identified within 500 m of the site. A small pond present near to the Rusper Village Hall, 150 m north. Several small pools forming part of the River Mole are present 225 m south-west (P1). A small woodland pond is present 265 m south-east. A larger woodland pond is present 500 m north-east. See, Figure No. 02 – Pond Plan below.

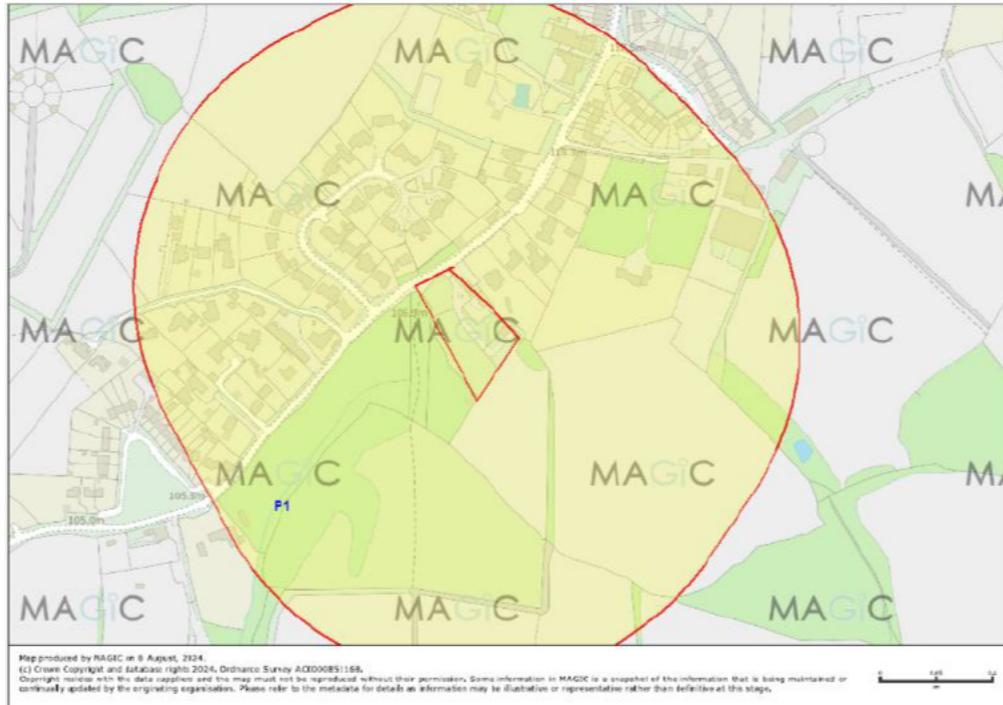


Figure No. 02 – Surrounding Pond Plan (250 m buffer from site boundary)

- 4.3.3 The site is located between green and white zones on the Nature Space Map for Horsham, which suggests a low to moderate habitat suitability.

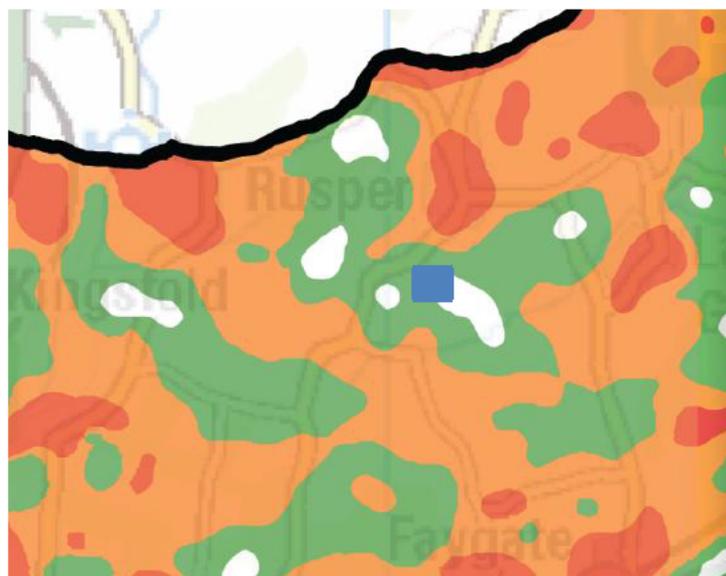


Figure No. 03 – Nature Space Impact Risk Zones (Site location blue square)

Site Assessment

- 4.3.4 The only waterbodies considered of relevance to proposals of this scale (*within 250 m and not isolated by main roads*) are the pools forming part of the River Mole Spring. The pools were considered one waterbody (P1) and have been subject to HSI assessment. The ponds within site were assigned a score based on criteria outlined in *ARG Advice Note 5* is assigned according to each category with a total score given between 1 and 0 ($HSI = SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10}$)^{1/10}; pond suitability is then determined according to the scale below.

Table No. 07 – Pond Suitability Based on HSI Score

HSI Score	Suitability
<0.5	'poor'
0.5 - 0.59	'below average'
0.6 - 0.69	'average'
0.7 - 0.79	'good'
>0.8	'excellent'

Table No. 08 – HSI Assessment Undertaken of Ponds

Criteria	P1
SI1: Location	1.00
SI2: Pond Area	0.20
SI3: Pond Drying	0.50
SI4: Water Quality	0.33
SI5: Shade	0.70
SI6: Fowl	1.00
SI7: Fish	1.00
SI8: Ponds	0.80
SI9: Terrestrial Habitat	1.00
SI10: Macrophytes	0.40
Score	0.61
Result	Average

- 4.3.5 The ponds are considered to offer 'average' suitability for GCN. This is considered a generous assessment in terms of shading and water quality. Being c. 225.0 m outside of the site, and surrounded by high-quality habitat, it is considered highly unlikely that GCN if present in low numbers would traverse this distance. The Natural England Risk Assessment Tool suggests that an offence related to GCN in this situation would be highly unlikely. The site is considered of value to GCN at the **site** level at most.

Reptiles

Desk Study

- 4.3.6 Populations of common and widespread reptiles, such as grass snake *Natrix helvetica*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* exist within areas of suitable habitat throughout the landscape. Reptile surveys undertaken during August-September 2020 recorded a low population of slow worm using the site, with a peak count of 3no. adults and 1no. juvenile on any single visit.

Site Assessment

- 4.3.7 The grassland continues to offer optimal foraging habitat for reptiles, whilst the scrub, log piles and adjacent woodland offer hibernation habitats. A juvenile slow worm was found under a log during the PEA.

Reptile Surveys

- 4.3.8 The results of the survey recorded a peak count of 25no. adult slow worm and 1no. adult grass snake on site. No other reptile species were recorded during the surveys.
- 4.3.9 A peak count of 15no. juvenile slow worm were found during the surveys, indicative of a good breeding population on site. A summary of each visit is detailed below.

Table No. 09 – Summary of Reptile Results (adults only)

Survey	Date of Visit	Results
1	04/06/24	24no. slow worm, 1no. grass snake
2	07/06/24	11no. slow worm
3	12/06/24	20no. slow worm
4	18/06/24	25no. slow worm
5	24/06/24	10no. slow worm
6	01/07/24	9no. slow worm
7	16/07/24	11no. slow worm, 1 no. grass snake

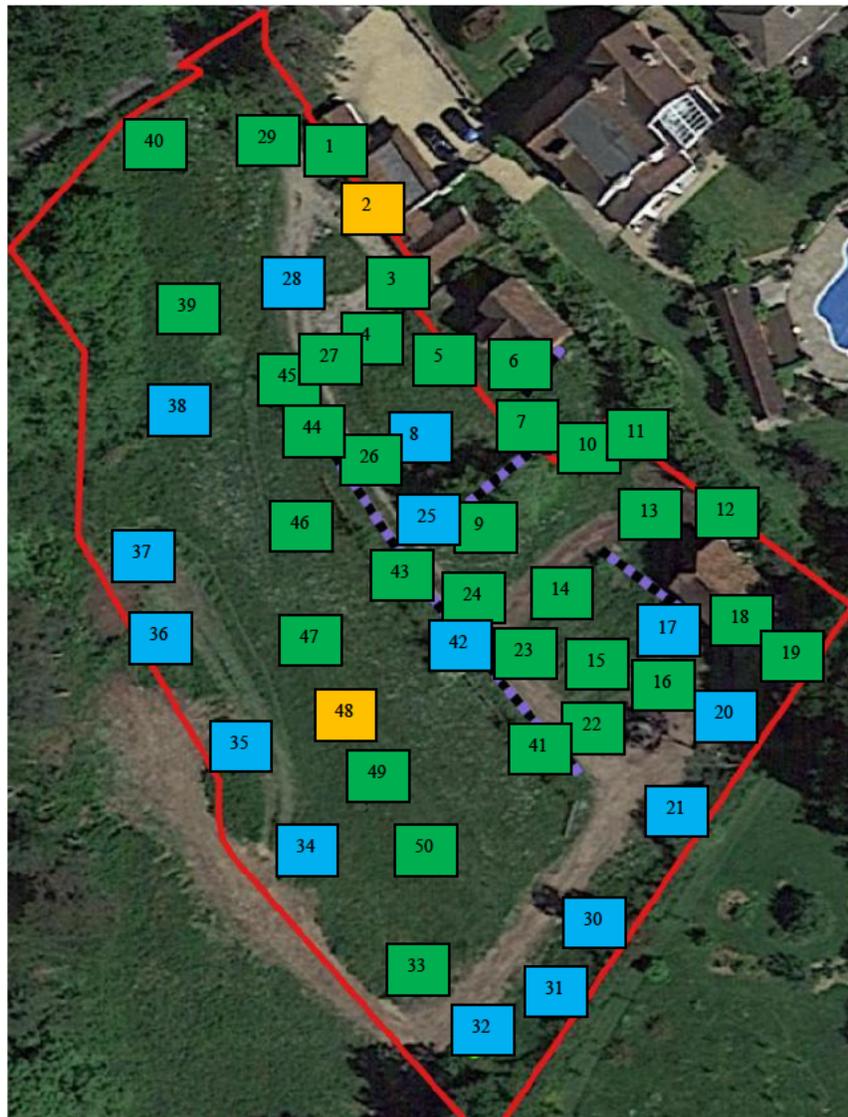


Figure No. 04 – Reptile Survey Results (green = slow worm, orange = slow worm and grass snake, blue = no reptiles).

- 4.3.10 The results indicate a continued ‘good’ population of slow worm and ‘low’ population of grass snake. Reptiles were widely distributed across the entire site, concentrated along the north-eastern border and central region of the site.

Bats

Desk Study

- 4.3.11 Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Brown Long-eared (*Plecotus auritus*) Noctule Bat (*Nyctalus noctula*) and Myotis bat (*Myotis sp.*) bats have been recorded within the local area. The site does not fall within a ‘Bat Sustainance Zone’.
- 4.3.12 Emergence surveys completed in 2020 recorded a day roost of up to 3no. individual common pipistrelle within B2 and day roosts of common pipistrelle and brown long-eared bats within B3.

Preliminary Roost Assessment

- 4.3.13 The existing buildings on site were assessed for their potential to support roosting bats, a summary of the assessment is shown below:

Table No. 10 – Bat Roost Assessment - Buildings

Ref.	Description	Category
B01	Small brick store with pitched clay tile roof. No membrane is present and no droppings or other evidence of bats was noted. Weatherboarding to the north and small crevices between tiles offer limited opportunities for individual bats.	Low
B02	Small brick cottage of east-west gable with a further southern gable forming a T shape. The clay tiled roof and wooden soffits and fasciae are well-sealed. The loft was well-sealed and heavily cobwebbed, with 2no. old bat droppings found within. Hanging tiles are present to the eastern aspect, with several missing and warped providing access points for bats.	Confirmed in 2020
B03	Timber half-hipped barn with clay tile roof. An open central bay leads to boarded stables on the east and an open barn with window on the west. Felt is present beneath the tiles. A scattering of pipistrelle droppings were noted, as were several discrete piles of long-eared bat droppings, particularly under a timber beam joint. In 2020, the central and eastern bays collapsed inward.	Confirmed in 2020
B04	Located off-site; Small derelict wooden stable with corrugated roof in disrepair. Building is light and lacks evidence of bats.	Negligible

- 4.3.14 A small number of mature oak and ash trees were considered to offer Potential Roost Features (PRF) for individuals (PRF-I) to bats due to their size and/or presence of features of limited value to bats. A Scots pine with several shallow woodpecker holes also offers PRF to individual bats (PRF-I). See Trees with Bat roosting Potential labelled on the Site Habitat Plan.

Emergence Survey

- 4.3.15 The surveys of building B3 recorded a day roost of 1no. common pipistrelle within a mortice joint, and a day roost of 1no. brown long-eared bat. Activity was relatively high in the vicinity of the building, with common pipistrelle frequently foraging along the hedgerow and oak tree to east of the building.
- 4.3.16 Survey of B2 recorded 1no. common pipistrelle roosting behind hanging tile to the south-eastern gable of the building and 1no. common pipistrelle roosting beneath roof tiles near the existing chimney.
- 4.3.17 No bats emerged from building B1 during the survey period.
- 4.3.18 The above surveys were undertaken during suitable conditions and were considered sufficient to accurately categorise the roosts and access features. The numbers and species of bats observed during emergence surveys were consistent with the evidence found during the preliminary roost assessments and previous survey. Foraging was recorded by common pipistrelles, occasional long-eared bats, and rare records of serotine, Myotis sp. and soprano pipistrelle bats. Overall the site supports 4no. low conservation significance bat roosts and is considered of significance at the **site level** only.

Dormouse

Desk Study

- 4.3.19 There were no EPSL's on Magic Maps in relation to dormice returned from within the search area nor did SxBRC return any results with the search.

Site Assessment

- 4.3.20 The bordering woodland edge in the west and eastern boundary hedge are well connected to suitable habitats further south. However, these habitats are not proposed to be impacted and shall be protected and retained. The scrub and introduced shrub vegetation on-site that is set for removal is also more isolated from other linking habitat corridors. The habitat on site is therefore of **negligible value** to dormice whilst adjacent and protected bordering habitats are likely of **local value**.
- [REDACTED]

*Water Vole**Desk Study*

- 4.3.23 There are no records of water vole locally.

Site Assessment

- 4.3.24 There is no suitable habitat for water voles on the site. The site is of **negligible value** to water vole. The nearby stream is heavily shaded and devoid of suitable vegetation. No further assessment with regard to water vole shall be undertaken.

Winter Birds

Desk Study

- 4.3.25 Relevant wintering bird species returned within the data search include redwing, fieldfare, brent goose, Bewick's swan and curlew. The site is not within nor adjacent any areas listed within the *Solent Waders and Brent Goose Strategy*.

Site Assessment

- 4.3.26 The site habitats are relatively suitable for wintering birds, but the location lacks suitable aquatic habitats for birds such as geese. The habitats are limited in extent and of **site value** to wintering bird species.

Breeding Birds

Desk Study

- 4.3.27 Numerous bird species are present locally, including 41no. Sussex Notable Bird species. Birds of relevance to the habitats present include barn and tawny owl, yellowhammer, nightingale, meadow pipit, skylark, woodcock, turtle dove.

- 4.3.28 Breeding bird surveys in 2020 recorded 19no. species on-site and did not record the presence of any ground nesting birds such as woodlark or skylark, nor any red-listed species. Numerous barn owl pellets were found within the Barn B3, as were several old passerine nests.

Site Assessment

- 4.3.29 The sward is too long and the site too enclosed to offer optimal habitat for ground nesting species. Areas of dense scrub, trees and hedgerows on site offer suitable nesting habitat for small passerines.
- 4.3.30 Building B3 has partially collapsed since the previous survey period, leaving only the western-most bay intact. No barn owl pellets, nor any other evidence such as whitewashing or feathers, was recorded on site during the updated surveys in 2024. The habitats on site are common and widespread and of **site value** to birds.

Invertebrates

Desk Study

- 4.3.31 SxBRC returned c. 700no. records for invertebrates within the search area, all of which are scarce, rare, or red listed. And, of these listed under WCA Sch5 s9.5a, NERC S41, include the stage beetle, purple emperor, white admiral, chalk hill blue, brown hairstreak and small heath butterfly and hundreds of records of moths.

Site Assessment

- 4.3.32 The grassland offers potential for invertebrates such as butterflies and bees, with a marbled white noted during the PEA. Log piles and woodland edges offer potential for beetles. The woodland and stream within offer invertebrate potential but lack significant deadwood or ground flora and would not be impacted by proposals. The overgrown gardens and scrub offer limited potential for common invertebrates whilst the hard surfaces offer negligible potential. The habitats within the construction zone are common and of value within the **site only**.

5.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.0.1 Using the Guidelines for Ecological Impact Assessment (IEEM, 2006 & updated by CIEEM, 2018), the assessment set out below considers the potential impacts of the scheme prior to mitigation. Detailed avoidance, mitigation and compensation measures are then discussed, with residual impact identified once these measures have been taken into account. Wherever possible mitigation measures have been designed into the scheme as this gives greater certainty over deliverability and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).

5.1 Designated Sites

Potential Impacts

5.1.1 The development is within the Impact Risk Zone of House Copse SSSI (2.25 km SE) but does not fall into a category requiring consultation with *Natural England*. The impacts from increased recreation are likely to be very small. The site is c. 20.0 km from any international designated site and therefore there would be no direct impacts upon any of these sites.

5.1.2 The site is located within the Sussex North Water Supply Zone. In the absence of mitigation measures, additional dwellings in this area could cause increased water extraction leading to an adverse effect upon Arun Valley SAC.

5.1.3 The site is unlikely to impact SNCI's or bat sustenance zones due to intervening distances and the small scale of the proposals.

Mitigation and Compensation

5.1.4 The properties are limited in number and contain extensive gardens and adjoin public footpaths through Baldhorns Copse, providing local outdoor recreational opportunities and limiting the likelihood of frequent visits to local designated sites.

- 5.1.5 Demonstrating water neutrality by minimising water use of new builds. All new builds should demonstrate that they can achieve strict water targets (e.g., 85L/pp/day). This shall be achieved by grey water recycling; rainwater harvesting and water efficient fixings. The mitigation shall be suitably certain to comply with the Habitats Regulations and Caselaw.

Residual Impacts

- 5.1.6 There will be **no likely significant effect** upon any surrounding protected site as a result of this development.

5.2 Habitats

Potential Impacts

- 5.2.1 Development proposals will result in the loss of areas of introduced shrubs; grassland, scrub and several scattered trees, all habitats with value at the site level only. Impacts in the absence of mitigation would be low-moderate. In the absence of mitigation construction may impact higher value woodland habitat off-site.

Mitigation and Compensation

- 5.2.2 Post-development, garden habitats lost shall be replaced with further areas of trees, hedges, amenity grassland and introduced shrub areas within gardens. The loss of other neutral grassland shall be compensated for through retention and enhancement of the southern section of grassland. This will be enhanced through overseeding and the sward sensitivity maintained as meadow.
- 5.2.3 Works during the construction phase will be undertaken in accordance with guidance provided within *The Control of Dust and Emissions During Construction and Demolition SPG (July 2014)* to control any excess dust creation which may impact adjacent priority habitat.

- 5.2.4 All fuels / liquids will be stored in an appropriate compound out of the RPAs of trees on the site, at least 10 m from the woodland and 20 m from any watercourse. Trees, hedges and woodland shall be protected in accordance with British Standard 5837. Lighting shall be designed in accordance with ILP Guidance Note 08/23 with minimal outside lighting, no light spill onto the woodland and tree lines and low-level or downlighters used wherever possible.
- 5.2.5 *Cotoneaster horizontalis* is noted on the site; a listed **invasive species**. The plant shall be removed by hand (*unless being retained in planting beds*) and taken to an appropriate green waste recycling centre. The ecologist shall undertake a check to ensure no invasive plant material remains following any clearance.

Residual Impacts

- 5.2.6 Provided the above mitigation measures are implemented, no priority or other important habitats or plant species will be affected by this development, the impact of which is negligible.

5.3 Amphibians

Potential Impacts

- 5.3.1 Impacts may include removal of habitat and harm to individual amphibians. The likelihood of GCN being impacted, as determined by the Natural England Rapid Risk Assessment Tool, is determined to be unlikely.

Mitigation and Compensation

- 5.3.2 The mitigation and compensation proposed for reptiles shall adequately protect amphibians on-site and prevent their entry during construction. Should a GCN be found works shall cease until a licenced surveyor is contacted for advice.

Residual Impacts

- 5.3.3 The overall impacts will be **negligible**.

5.4 Reptiles

Potential Impacts

- 5.4.1 Impacts would include loss of habitat and harm to reptiles on the site. Impacts would be of moderate magnitude and likely to occur.

Mitigation and Compensation

- 5.4.2 A full reptile translocation exercise shall be undertaken, this is detailed below.
- 5.4.3 The adjacent suitable habitats shall be isolated from the site through installation of reptile exclusion fencing. This shall be 750 mm in height and constructed using 1000-gauge UV-treated polythene fixed to 50 x 50 mm stakes and buried 250 mm underground. A trench will be excavated to a depth of approximately 250 mm; the fence sheet laid around the edge and the trench backfilled. The top of the fence will be rolled back outwards and the stakes fitted inside the fence such that reptiles cannot climb up and over the fence.
- 5.4.4 The above works will be conducted under the supervision of a suitably qualified ecologist to ensure the welfare of any reptile species which may otherwise be adversely affected. The fencing will be maintained for the duration of the construction period and until all works have been completed on site. Fencing will be checked on a regular basis and repaired where necessary as soon as possible.
- 5.4.5 Artificial reptile refugia will be installed in suitable vegetation at a minimum density of 100 / Ha and checked in appropriate weather conditions for at least 30 days, with completion after 5 days in suitable weather conditions with no reptiles discovered. Habitat manipulation shall be used to encourage reptiles to use the refugia more rapidly. Any reptiles discovered will be stored in cloth drawstring bags and transported to the receptor site within 1 hour of collection, to be released in a sheltered but warm location.

- 5.4.6 The translocation shall be completed through a careful destructive search of the site. The top 100mm turf layer shall be scraped off using a toothed bucket excavator, and any remaining piles of materials, concrete slabs, debris etc. shall be manually checked and removed from the site. Any reptiles discovered during the destructive search will be stored in cloth drawstring bags and transported to the receptor site within 1 hour of collection, to be released in a sheltered but warm location.
- 5.4.7 An area of land within Baldhorns Copse within the same ownership is proposed for the receptor site. The grassland here is currently much shorter and thinner and largely unsuitable for reptiles. An area of the grassland equivalent to the area of suitable habitat lost shall be allowed to grow with bare patches seeded. New log piles, hibernacula and compost heaps will provide hibernation habitats, whilst the grassland shall be managed as a meadow with twice annual cuts, and access paths mown. Translocation works shall not begin until habitat improvement works within the receptor have taken place and grassland has established. Continued management and enhancement of this habitat shall compensate for loss of the development area, which is relatively immature with habitats previously maintained as gardens and paddock.

Residual Impacts

- 5.4.8 The overall impact of the scheme will be **negligible**.

5.5 Bats

Potential Impacts

- 5.5.1 In the absence of mitigation impacts may include habitat fragmentation, loss of foraging areas, increased predation and killing or injuring of individual bats using B2 and B3 as a roost. Impacts would be of moderate-high magnitude at the site level and likely to occur.

Mitigation and Compensation

- 5.5.2 A mitigation licence from Natural England will be required prior to works to building B2 and B3. Mitigation will be as follows:
- Apply for a Mitigation Licence from Natural England;
 - Install bat boxes suitable for common pipistrelle and long-eared bats to southern aspect of an adjacent mature tree or to the store;
 - Once licence is received, soft strip all roof and hanging tiles, and weatherboarding in the vicinity of the roosts of B2 and B3 by hand under ecological supervision;
 - Any bats found will be moved to the adjacent bat boxes;
 - The buildings will only be altered once declared free of bats by the supervising ecologist;
 - Permanent roosting provision will be provided within the southern aspect of the buildings nearest the original roost location. A new feeding perch opportunity shall be incorporated into one of the proposed garages in a similar location to the replaced barn.
- 5.5.3 A sensitive lighting scheme will be employed in accordance with ILP Guidance Note 08/23 with lighting kept to the minimum levels and angled down and away from surrounding hedge lines and mature trees and woodland. The landscape scheme will include '*bat-friendly*' planting to increase the foraging resource while new hedge / tree planting will retain connectivity between the site and wider area.

Residual Impacts

- 5.5.4 The overall impact of the scheme will be neutral.

5.6 Dormouse

Potential Impacts

- 5.6.1 Given the likely absence of dormice and lack of habitat on site, impacts within the site from construction will be **negligible**. Construction has the potential to negatively impact upon surrounding suitable habitats of value to dormice. This would be of moderate magnitude.

Mitigation and Compensation

- 5.6.2 Works during the construction phase will be undertaken in accordance with guidance provided within *The Control of Dust and Emissions During Construction and Demolition SPG (July 2014)* to control any excess dust creation which may impact adjacent priority habitat.
- 5.6.3 All fuels / liquids will be stored in an appropriate compound out of the RPAs of trees on the site, at least 10 m from the woodland and 20 m from any watercourse. Trees, hedges and woodland shall be protected in accordance with British Standard 5837. New hedge planting shall be undertaken to reinforce the woodland edge and make it more suitable for dormice. Any scrub removal on-site shall be undertaken manually under ecological supervision, with works halting should evidence of dormice be found.

Residual Impacts

- 5.6.4 The short-term impact of the scheme will be **negligible** with enhancements resulting in a minor **positive increase** in the long-term.

5.7

[REDACTED]

5.8 Birds

Potential Impacts

- 5.8.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest and loss of a previously identified barn owl roost. The likelihood of ground nesting or farmland birds being impacted is determined to be very low.

Mitigation and Compensation

- 5.8.2 Prior to works commencing, the barn shall be inspected for signs of barn owl or and bird nests to ensure no bird shall be disturbed. A new barn owl box shall be provided to a mature oak tree along the woodland edge. New habitats for reptiles shall also compensate for lost barn owl within the same ownership habitat by creating better foraging habitat with more potential for small mammals.
- 5.8.3 The removal of any scrub and trees shall be undertaken outside the nesting season or shall be removed following inspection by a suitably qualified ecologist.

Residual Impacts

- 5.8.4 The overall impact of the scheme will be **negligible**.

5.9 Invertebrates

Potential Impacts

- 5.9.1 No significant impacts predicted. Loss of habitats suitable for common invertebrates would not have a significant impact beyond the immediate site impacts.

Mitigation and Compensation

- 5.9.2 New habitats for reptiles shall also compensate for lost invertebrate habitat. The removal of any log or brash piles shall be completed by hand as per the reptile mitigation strategy, with any stag beetle or other larvae moved to new log piles within retained grassland to the south. All planting used within the soft landscape scheme shall be species with a known wildlife value to compensate for the loss of areas of shrub planting on site.

Residual Impacts

- 5.9.3 The overall impact of the scheme will be **negligible**.

6.0 ENHANCEMENTS

6.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife in line with the National Planning Policy Framework and Local Planning Policy. Ecological enhancements which will be included as part of development proposals (in addition to the mitigation measures outlined above) include:

- The use of flowering plants as listed within the RHS 'Plants for Pollinators' within areas of ornamental planting;
- The use of trees providing fruits, nuts and berries;
- The planting of new native, mixed species hedges between residential plots and the surrounding grassland areas;
- Installation of 1no. integrated nest boxes to the northern aspect of each new building;
- The creation of a pond to the northern section of the site to provide sustainable drainage and ecological habitat;
2no. crevice and 2no. hollow bat boxes to be installed to the southern aspect of mature trees.

7.0 CONCLUSIONS

- 7.1 The development site is formed of derelict buildings, compact gravel, scrubby hedgerow and areas of varying diversity of grassland. The site is bounded to the west by habitats of higher value including deciduous woodland.
- 7.2 The site supports two small bat roosts of two common bat species. The works shall require a Natural England Mitigation Licence to proceed. The licence shall ensure that the proposals do not affect the favourable conservation status of the species.
- 7.3 A barn owl has previously used the barn as a roost, although the roost does not appear to be in current use. The proposals shall provide a barn owl box installed to a mature tree to the woodland edge.
- 7.4 The grassland contains a 'good' population of slow worms and low population of grass snake. A reptile translocation shall relocate these reptiles into land adjacent to the south of the site, which shall be retained and enhanced for reptiles.
- 7.5 Once mitigation measures have been taken into the account, the impacts of the planned development upon biodiversity will be **negligible** with proposed ecological enhancements offering **net gains** in biodiversity in line with national planning policy guidance.

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Table No. 11 – Species List for Habitat Parcels**Other Neutral Grassland**

Common Name	Scientific Name	DAFOR
Bent	<i>Agrostis sp.</i>	A
Bird's-foot Trefoil	<i>Lotus corniculatus</i>	LA
Bluebell	<i>Hyacinthoides non-scripta</i>	O
Broadleaved Dock	<i>Rumex obtusifolius</i>	O
Broadleaved Plantain	<i>Plantago major</i>	R
Centaury	<i>Centaurium erythraea</i>	R
Cocksfoot Grass	<i>Dactylis glomerata</i>	LA
Common Knapweed	<i>Centaurea nigra</i>	A
Creeping Buttercup	<i>Ranunculus repens</i>	O
Creeping Cinquefoil	<i>Potentilla reptans</i>	LF
Creeping Thistle	<i>Cirsium arvense</i>	O
Cut-leaved Cranesbill	<i>Geranium dissectum</i>	O
Fescue	<i>Festuca sp.</i>	LD
Fleabane	<i>Pulicaria dysenterica</i>	O
Fox and Cubs	<i>Pilosella aurantiaca</i>	O
Marsh Thistle	<i>Cirsium palustre</i>	F
Meadow Buttercup	<i>Ranunculus acris</i>	O
Oxeye Daisy	<i>Leucanthemum vulgare</i>	LA
Pendulous Sedge	<i>Carex pendula</i>	O
Ragwort	<i>Jacobaea vulgaris</i>	O
Red Clover	<i>Trifolium pratense</i>	LA
Ribwort Plantain	<i>Plantago lanceolata</i>	O
Rush	<i>Juncus sp.</i>	O
Selfheal	<i>Prunella vulgaris</i>	LF
Sorrel	<i>Rumex</i>	LA
Square-stalked St John's Wort	<i>Hypericum tetrapterum</i>	O
Tormentil	<i>Potentilla</i>	O
Vetch	<i>Vicia sp.</i>	O
Wild Carrot	<i>Daucus carota</i>	LF
Yorkshire Fog	<i>Holcus lanatus</i>	A

Introduced Shrubs and Overgrown Garden

Common Name	Scientific Name	DAFOR
Ash	<i>Fraxinus excelsior</i>	O
Bramble	<i>Rubus fruticosus</i>	LD
Broadleaved Dock	<i>Rumex obtusifolius</i>	R
Columbine	<i>Aquilegia vulgaris</i>	R
Common Nettle	<i>Urtica dioica</i>	O
Cotoneaster	<i>Cotoneaster sp.</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	O
Creeping Thistle	<i>Cirsium arvense</i>	O
Darwin's Barberry	<i>Berberis darwinii</i>	F
Field Bindweed	<i>Convolvulus arvensis</i>	LF
Firethorn	<i>Pyracanth asp.</i>	R
Fuschia	<i>Fuschia sp.</i>	R
Goldenrod	<i>Solidago sp.</i>	O
Grape	<i>Vitis vinifera</i>	R
Harebell	<i>Campanula sp.</i>	O
Horizontal Cotoneaster	<i>Cotoneaster horizontalis</i>	O
Ivy-leaved Toadflax	<i>Cymbalaria muralis</i>	O
Lilac	<i>Syringa vulgaris</i>	R
Marsh Thistle	<i>Cirsium palustre</i>	O
Pendulous Sedge	<i>Carex pendula</i>	LA
Ragwort	<i>Jacobaea vulgaris</i>	F
Reb Barberry	<i>Berberis thunbergii atropurpureum</i>	R
Square-stalked St John's Wort	<i>Hypericum tetrapterum</i>	R
St John's Wort 'Hidcote'	<i>Hypericum 'Hidcote'</i>	R
Vetch	<i>Vicia sp.</i>	O
White Clover	<i>Trifolium repens</i>	O
Wild Strawberry	<i>Fragaria vesca</i>	LA
Willow	<i>Salix sp.</i>	O
Wood Avens	<i>Geum urbanum</i>	R

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Trees and Hedges

Common Name	Scientific Name	DAFOR
Apple	<i>Malus sp.</i>	R
Ash	<i>Fraxinus excelsior</i>	F
Bay	<i>Laurus nobilis</i>	R
Cypress	<i>Cupressus sp.</i>	R
Hornbeam	<i>Carpinus betulus</i>	LA
Pedunculate Oak	<i>Quercus robur</i>	A

Woodland

Common Name	Scientific Name	DAFOR
Ash	<i>Fraxinus excelsior</i>	O
Hornbeam	<i>Carpinus betulus</i>	D
Pedunculate Oak	<i>Quercus robur</i>	A
Silver Birch	<i>Betula pendula</i>	LF
Sycamore	<i>Acer pseudoplatanus</i>	O

Mixed Scrub

Common Name	Scientific Name	DAFOR
Ash	<i>Fraxinus excelsior</i>	O
Blackthorn	<i>Prunus spinosa</i>	LD
Bramble	<i>Rubus fruticosus</i>	LD
Common Hawthorn	<i>Crataegus monogyna</i>	F
Guelder Rose	<i>Viburnum opulus</i>	O
Hazel	<i>Corylus avellana</i>	R
Hornbeam	<i>Carpinus betulus</i>	O
Marsh Thistle	<i>Cirsium palustre</i>	O
Nettle	<i>Urtica dioica</i>	O
Pedunculate Oak	<i>Quercus robur</i>	O
Rose	<i>Rosa sp.</i>	O
Yew	<i>Taxus baccata</i>	R

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

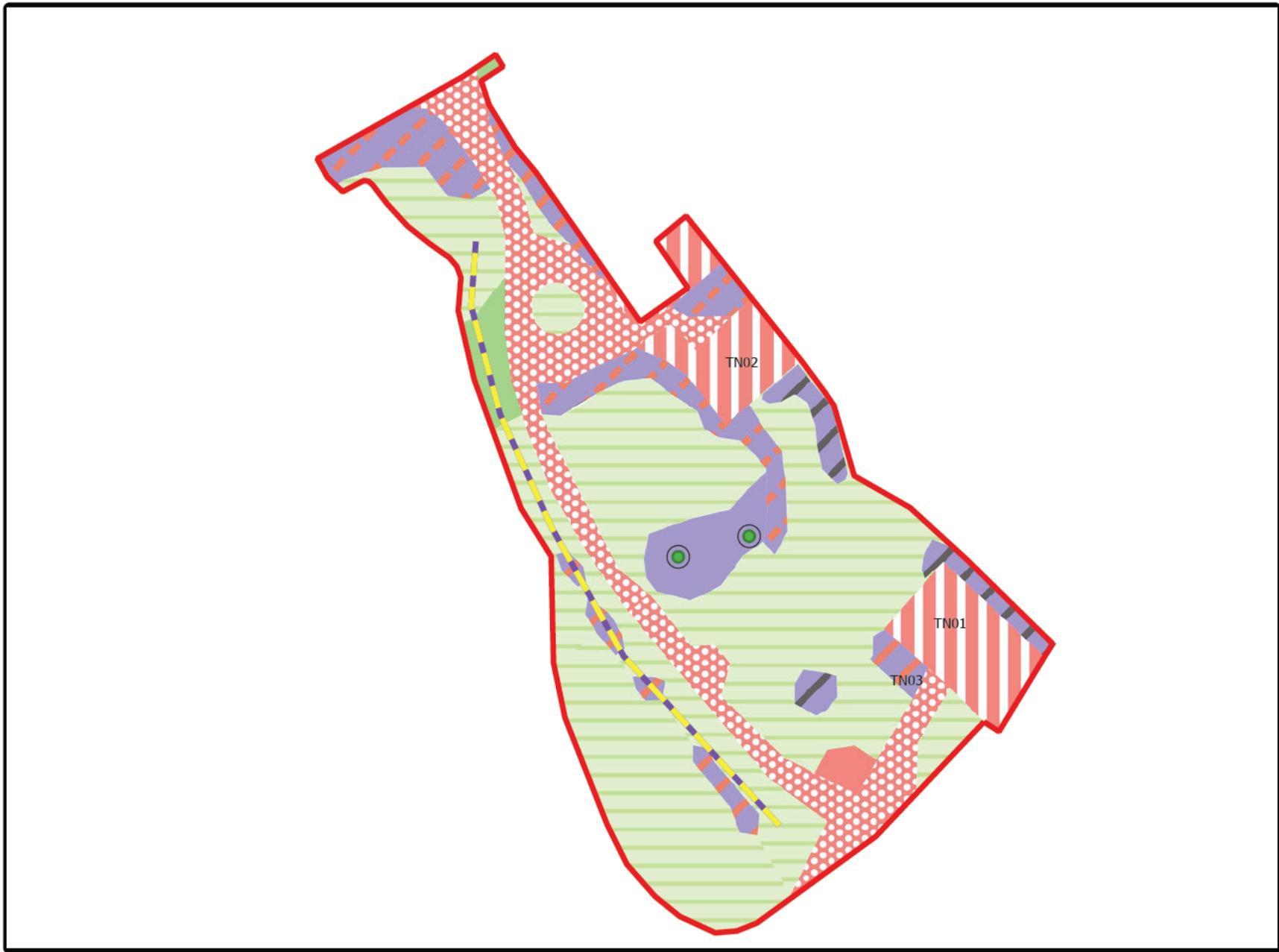
Table No. 12 – Target Notes for Protected Species

Note	Description
TN01	Accumulation of relatively old barn owl pellets.
TN02	Accumulations of bat droppings.
TN03	Location of large log and stone piles suitable for reptiles.

FIGURES

Figure No. 01 – Site Habitat Plan

Figure No. 05 – Bat Survey Plan



Legend

- Red Line Boundary
- Existing Small Rural Tree
- Native hedgerow
- Artificial unvegetated, unsealed surface
- Blackthorn scrub
- Bramble scrub
- Developed land; sealed surface
- Introduced shrub
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Bare ground

TN - Target Notes

LIZARD
Landscape Design and Ecology

The Old Bank, 34 South Street, Torrington, Worthing, West Sussex, BN14 7JH
T: 01903 716033 E: office@lizardlandscape.co.uk W: lizardlandscape.co.uk

Client
ECE Planning
Project Title & Location
Pucks Croft cottage, Rusper

Drawn by	Approved by	Rev	Date
LB	COR	00	29/08/2024
LB	COR	01	17/06/2025

Figure No. 01 - Site Habitat Plan

N
1:600



Legend

- Existing Small Rural Tree
- Native hedgerow
- Artificial unvegetated, unsealed surface
- Blackthorn scrub
- Bramble scrub
- Developed land; sealed surface
- Introduced shrub
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Bare ground
- Surveyor Point on Bat survey
- Buildings

LIZARD
Landscape Design and Ecology

The Old Bank, 34 South Street, Torrington, Worthing, West Sussex, BN14 7JH
T: 01903 716033 E: office@lizardlandscape.co.uk W: lizardlandscape.co.uk

Client
ECE PLANNING
Project Title & Location
**PUCKS CROFT COTTAGE,
RUSPER**

Drawn by	Approved by	Rev	Date
LB	COR	00	29/08/24
LB	COR	01	19/06/25

25 50 m

1:600

Figure No. 02 - Bat Survey Plan

APPENDICES

Appendix A – Site Photographs

Appendix B – Bat Survey Results

Appendix C – Reptile Survey Results

Appendix D – Sussex Biodiversity Records Centre (Summary Page)

Appendix A – Site Photographs

Photograph 1: View of B1 (right section with separate roof) which is not considered a bat roost.



Photograph 2: View of B2 which is a roost for common pipistrelle bats.



Photograph 3: View inside the loft of B2.



Photograph 4: Internal View of B3.



Photograph 5: Building B3.



Photograph 6: View of the grassland within the site, with a low population of slow worm and grass snake.



Photograph 7: The adjacent woodland edge and trees.



Photograph 8: Overgrown gardens and ruderal vegetation.



LAND ADJACENT TO PUCKS CROFT COTTAGE
RUSPER, WEST SUSSEX
LLD3245-ECO-REP-001-01-EcIA

Photograph 9: Patches of scrub with some forming hedge are present throughout the site.



Photograph 10: Mature trees to the boundaries.



Appendix B – Bat Survey Results

Date	10/06/2024 (Building B3)	
Survey Type	Dusk	
Sunrise / Sunset	21:15	
Start Time	21:00	
End Time	22:45	
Start Temperature	11C	
End Temperature	10C	
Wind (Beauforts)	0	
Cloud Cover	1/8	
Rain	None	
Surveyor	COR	
Survey Point	West of B3	
Time	Species	Notes
21:32	pip	Emerged from barn, flew towards oak
21:36	CPip	Flew along S side of barn towards hedge, possible emergence
21:39	CPip	Flew past building towards hedge
21:41	LE	Emerged from open end of barn, towards oak tree
21:42	LE	Flew into barn.
21:44	LE	Out of barn, was possible same LE that re-entered previously
21:53	CPip	Flying along hedge
22:07	Nyctalus	HNS
22:10	LE	Gleaned insect off roof then flew into barn
22:20	CPip	HNS
22:26	Nyctalus	HNS
22:31	Myo	HNS
22:38	pip	Flying around barn, appeared from W
22:43	LE	Re-entered barn
22:46	LE	out of barn
Surveyor	FB	
Survey Point	SE of B3	
Time	Species	Notes
21:39	CPip	flew east to west
21:52	CPip	HNS
22:23	CPip	HNS
22:33	myo?	HNS
22:37	cpip	HNS
22:41	Long eared	flying west to east south of barn
22:45	CPip	HNS

Date	09/07/2024 (Building B3)	
Survey Type	Dusk	
Sunrise / Sunset	21:15	
Start Time	21:00	
End Time	22:45	
Start Temperature	17	
End Temperature	16	
Wind (Beauforts)	3	
Cloud Cover	7/8	
Rain	Light and Partial	
Surveyor	LB	
Survey Point	SE of B3	
Time	Species	Notes
21:24	CPip	hns commuting pass
21:27	CPip	foraging
21:30	noct	foraging high above
21:35	CPip	hns commuting pass
21:38	CPip	foraging in and out of B3 using the eastern aspect
21:42	CPip	foraging over the boundary vegetation to the south and above SP
21:43		<i>*light persistent rain started*</i>
21:44	CPip	foraging about SP
21:46-21:54		<i>*moderate and consistent rain*</i>
21:55-22:05		<i>*light rain*</i>
21:57	Unk	SNH above SP, no call
22:04	Unk	appeared by roof ridge no call, flew S
Surveyor	JT	
Survey Point	E of B3	
Time	Species	Notes
21:30	Noct	flying high overhead
21:42	CPip	HNS
21:47	CPip	HNS
21:51 - 53	CPip	HNS
21:56 - 58	CPip	foraging to the NE
21:59	CPip	flew S to N
22:00-	CPip	continuous foraging

Date	30/07/2024 (Building B3)	
Survey Type	Dusk	
Sunrise / Sunset	20:51	
Start Time	20:36	
End Time	22:21	
Start Temperature	24	
End Temperature	21	
Wind (Beauforts)	2	
Cloud Cover	1/8	
Rain	None	
Surveyor	OB	
Survey Point	West of B3	
Time	Species	Notes
21:03	CPip	HNS
21:21	LE	emergence.
21:24	CPip	foraging west of barn
21:30	CPip	HNS
21:33	CPip	HNS
21:36	serotine	HNS
21:40	CPip	HNS
22:05	CPip	HNS
22:08	CPip	flying from east to west.
22:14 - 22:15	CPip	HNS
Surveyor	KB	
Survey Point	South of B3	
Time	Species	Notes
21:03	CPip	3no. bats entering the barn.
21:15	CPip	HNS
21:21	CPip	Entering barn
21:23	CPip	Emergence from barn
21:24	CPip	Repeatedly using the barn shelter for foraging
21:31-:2133	CPip	Foraging inside barn.
21:36	BLE	HNS faint
21:38	CPip	HNS faint
21:47	CPip	HNS
22:05	CPip	HNS

Date	30/07/2024 (Building B3)	
Survey Type	Dusk	
Sunrise / Sunset	20:51	
Start Time	20:36	
End Time	22:21	
Start Temperature	24	
End Temperature	21	
Wind (Beauforts)	2	
Cloud Cover	1/8	
Rain	None	
Surveyor	WM	
Survey Point	West of B2	
Time	Species	Notes
21:16	C.pip	Flew over the building headed north-west
21:24	C.pip	HNS
21:30	C.pip	Flew over the building and flew towards the south
21:34	C.pip	Foraging around the house
21:43	C.pip	HNS
21:48	C.pip	Flew over the building and flew towards the south
Surveyor	PA	
Survey Point	Southeast of B2	
Time	Species	Notes
21:16	C.pip	Bat flew across front of garage from SE to NW
21:24	C.pip	Bat flew east between house and Garage
21:26	C.pip	2 bats flew over the garage roof from east to west
21:30	C.pip	Bat flew over the cars towards the garage and veered off in front of the house
21:34	C.pip	Foraging between house and garage
21:43	C.pip	HNS
21:48	C.pip	HNS
22:14	C.pip	HNS

Date	09/07/2024 (Building B2)	
Survey Type	Dusk	
Sunrise / Sunset	21:15	
Start Time	21:00	
End Time	22:45	
Start Temperature	17	
End Temperature	16	
Wind (Beauforts)	3	
Cloud Cover	7/8	
Rain	Light and Partial	
Surveyor	JP	
Survey Point	SW of B2	
Time	Species	Notes
21:26	CPip	faint hns
21:28	unk	emergence from chimney
21:30	noct	HNS
21:37	CPip	emergence from south of building flew south
21:57	CPip	foraging around the house
22:00	CPip	HNS
22:03	CPip	HNS
Surveyor	SH	
Survey Point	SE of B2	
Time	Species	Notes
21:29	noctule	HNS
21:37	CPip	Emerged from south aspect and flew south.
21:49	CPip	HNS
21:51	CPip	commute NE overhead
21:55 -58	CPip	hns multiple passes
22:00	CPip	HNS
22:03	CPip	HNS

Date	30/07/2024 (Building B2)	
Survey Type	Dusk	
Sunrise / Sunset	20:51	
Start Time	20:36	
End Time	22:21	
Start Temperature	24	
End Temperature	21	
Wind (Beauforts)	2	
Cloud Cover	1/8	
Rain	None	
Surveyor	COR	
Survey Point	Southeast of B2	
Time	Species	Notes
21:01	CPip	Emerged from HT on a gable
21:22	LE	Foraging along hedge, appeared from S
21:24	CPip	Flying towards building
21:48	CPip	Circling roof
22:15	CPip	Foraging along hedgerow
Surveyor	AC	
Survey Point	South west of B2	
Time	Species	Notes
21:01	CPip	flew from NE to W, emergence on catherines side.
21:22	CPip	flew NE, foraging
21:24	CPip	flew from W
21:29	CPip	flew SE
21:27	CPip	Commuting from NW to NE
21:29	CPip	commuting H/NS
21:43	CPip	flew around building
22:08-22:15	CPip, spip	Foraging, HNS

Appendix C – Reptile Survey Results

Surveyor	MD			
Date	04/06/2024			
Time	9:30			
Temperature	16°C			
Wind (Beaufort)	1			
Cloud Cover %	90%			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Juvenile	Unknown	x2
2	Slow Worm	Adult	Female	x2
2	Slow Worm	Juvenile	Unknown	
3	Other	Juvenile	Unknown	Toad
4	Slow Worm	Juvenile	Unknown	
5	Slow Worm	Juvenile	Unknown	
6	Slow Worm	Adult	Female	x2
6	Slow Worm	Juvenile	Unknown	x3
9	Slow Worm	Juvenile	Unknown	
10	Slow Worm	Juvenile	Unknown	x3
10	Slow Worm	Adult	Male	
11	Slow Worm	Juvenile	Unknown	
14	Slow Worm	Adult	Male	
14	Slow Worm	Adult	Female	x2
15	Slow Worm	Juvenile	Unknown	x2
18	Slow Worm	Adult	Male	
18	Slow Worm	Adult	Female	x3
19	Slow Worm	Juvenile	Female	
27	Slow Worm	Juvenile	Unknown	
29	Slow Worm	Adult	Female	
33	Slow Worm	Adult	Female	x2
43	Slow Worm	Adult	Female	
44	Slow Worm	Adult	Male	
46	Slow Worm	Adult	Female	x2
47	Slow Worm	Adult	Female	
48	Grass Snake	Adult	Unknown	Subadult
49	Slow Worm	Adult	Male	
49	Slow Worm	Adult	Female	
50	Slow Worm	Adult	Male	
50	Slow Worm	Adult	Female	

Surveyor	MD			
Date	07/06/2024			
Time	08:30			
Temperature	13°C			
Wind	1			
Weather	Clear & Sunny			
Tile No.	Species	Ad/J	Sex	Notes
3				Toad
4	Slow Worm	Adult	Male	
27	Slow Worm	Juvenile	Unknown	
29	Slow Worm	Adult	Male	
29	Slow Worm	Adult	Female	
39	Slow Worm	Adult	Female	
43	Slow Worm	Adult	Male	
45	Slow Worm	Adult	Female	x2
46	Slow Worm	Adult	Female	
47	Slow Worm	Adult	Female	
49	Slow Worm	Adult	Male	
49	Slow Worm	Adult	Female	
50	Slow Worm	Adult	Female	x2

Surveyor	MD			
Date	12/06/2024			
Time	10:00			
Temperature	13°C			
Wind	1			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Female	
2	Slow Worm	Adult	Female	x2
4	Slow Worm	Juvenile	Unknown	
5	Slow Worm	Juvenile	Unknown	
6	Slow Worm	Adult	Female	
6	Slow Worm	Juvenile	Unknown	x3
9	Slow Worm	Adult	Male	
9	Slow Worm	Juvenile	Unknown	
10	Slow Worm	Juvenile	Unknown	x2
10	Slow Worm	Adult	Male	
12	Slow Worm	Juvenile	Unknown	x2
15	Slow Worm	Adult	Female	
29	Slow Worm	Adult	Female	
33	Slow Worm	Juvenile	Unknown	

Surveyor	MD			
Date	12/06/2024			
Time	10:00			
Temperature	13°C			
Wind	1			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
39	Slow Worm	Adult	Unknown	
41	Slow Worm	Adult	Male	
41	Slow Worm	Adult	Female	x2
43	Slow Worm	Adult	Male	
45	Slow Worm	Adult	Female	
46	Slow Worm	Juvenile	Unknown	
47	Slow Worm	Adult	Female	
49	Slow Worm	Adult	Male	
49	Slow Worm	Adult	Female	x2
50	Slow Worm	Adult	Male	
50	Slow Worm	Adult	Female	

Surveyor	SH			
Date	18/06/2024			
Time	10:00			
Temperature	17°C			
Wind	1			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Female	
1	Slow Worm	Adult	Female	
2	Slow Worm	Adult	Male	
2	Slow Worm	Adult	Female	
22	Slow Worm	Adult	Female	
26	Slow Worm	Adult	Male	
26	Slow Worm	Juvenile	Unknown	
26	Slow Worm	Adult	Female	
16	Slow Worm	Adult	Male	
33	Slow Worm	Adult	Female	
33	Slow Worm	Adult	Female	
33	Slow Worm	Adult	Male	
33	Slow Worm	Adult	Male	
50	Slow Worm	Adult	Male	
50	Slow Worm	Adult	Male	
46	Slow Worm	Adult	Female	

Surveyor	SH			
Date	18/06/2024			
Time	10:00			
Temperature	17°C			
Wind	1			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
46	Slow Worm	Adult	Female	
46	Slow Worm	Adult	Male	
13	Slow Worm	Adult	Male	
7	Slow Worm	Adult	Female	
7	Slow Worm	Adult	Male	
7	Slow Worm	Adult	Male	
7	Slow Worm	Adult	Male	
7	Slow Worm	Adult	Male	
5	Slow Worm	Adult	Female	
5	Slow Worm	Adult	Male	

Surveyor	MD			
Date	24/06/2024			
Time	930.00			
Temperature	20°C			
Wind	1			
Weather	Clear & Sunny			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Female	x3
1	Slow Worm	Juvenile	Unknown	x2
2	Slow Worm	Adult	Female	x2
3	Slow Worm	Adult	Female	
6	Slow Worm	Juvenile	Unknown	x8
6	Slow Worm	Adult	Female	x1
9	Slow Worm	Adult	Female	
11	Slow Worm	Adult	Female	
11	Slow Worm	Juvenile	Unknown	x3
19	Slow Worm	Adult	Female	
40	Slow Worm	Juvenile	Unknown	

Surveyor	SH			
Date	01/07/2024			
Time	09:15			
Temperature	16°C			
Wind	2			
Weather	Overcast			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Female	
1	Slow Worm	Adult	Female	
2	Slow Worm	Adult	Female	
2	Slow Worm	Adult	Female	
2	Slow Worm	Adult	Male	
5	Slow Worm	Juvenile		
19	Slow Worm	Adult	Male	
24	Slow Worm	Adult	Female	
33	Slow Worm	Adult	Female	
48	Slow Worm	Adult	Female	

Surveyor	JT			
Date	16/07/2024			
Time	09:25			
Temperature	16°C			
Wind	0			
Weather	Light Cloud			
Tile No.	Species	Ad/J	Sex	Notes
1	Slow Worm	Adult	Male	
1	Slow Worm	Adult	Female	
1	Slow Worm	Juvenile	Unknown	x2
2	Slow Worm	Juvenile	Unknown	
2	Grass Snake	Adult	Unknown	
4	Slow Worm	Juvenile	Unknown	
5	Slow Worm	Juvenile	Unknown	x3
11	Slow Worm	Juvenile	Unknown	
14	Slow Worm	Juvenile	Unknown	
15	Slow Worm	Adult	Female	
19	Slow Worm	Adult	Female	x2
19	Slow Worm	Juvenile	Unknown	
23	Slow Worm	Adult	Male	
24	Slow Worm	Adult	Female	
40	Slow Worm	Adult	Male	
33	Slow Worm	Adult	Male	x2
33	Slow Worm	Adult	Female	

Appendix D – Sussex Biodiversity Records Centre



Ecological Data Search SxBRC/24/375 - Summary Report

An ecological data search was carried out for land adjacent to Pucks Croft Cottage, Rusper on behalf of Louise Barker (Lizard Landscape Design & Ecology) on 20/08/2024.

The following datasets were consulted for this report:

	Requested	Radius/buffer size
Designated sites, habitats & ownership maps	No	
Protected, designated and invasive species	Yes	2km

Summary of results

Sites and habitats

Statutory sites	Not requested
Non-statutory sites	Not requested
Section 41 habitats	Not requested
Ancient and/or ghyll woodland	Not requested

Protected and designated species

International designations	20 species	175 records
National designations	109 species	1,717 records
Other designations	189 species	2,923 records
Total	202 species	3,013 records
Invasive non-native	19 species	183 records

The report is compiled using data held by Sussex Biodiversity Record Centre (SxBRC) at the time of the request. SxBRC does not hold comprehensive species data for all areas. Even where data are held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there – the area may simply not have been surveyed.

**This summary page may be published.
The full report and maps may not be published or otherwise shared.**

The data search report is valid until 20/08/2025 for the site named above.

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