



# **ECOLOGICAL IMPACT ASSESSMENT**

---

**The Copse Phase 02, Worthing Road, Southwater**

On behalf of: Ms T Starmer

|                   |                                               |                            |                              |                              |
|-------------------|-----------------------------------------------|----------------------------|------------------------------|------------------------------|
| <b>Client:</b>    | Ms T Starmer                                  |                            |                              |                              |
| <b>Project:</b>   | The Copse Phase 02, Worthing Road, Southwater |                            |                              |                              |
| <b>Reference:</b> | LLD3554-ECO-REP-001-00-EcIA                   |                            |                              |                              |
| <b>Revision:</b>  | <b>Date:</b>                                  | <b>Author</b>              | <b>Proof</b>                 | <b>Approved</b>              |
| 00                | 01/12/25                                      | Sam Hall<br>MSc BSc (Hons) | Catherine O'Reilly<br>MCIEEM | Catherine O'Reilly<br>MCIEEM |
| 01                | 11/12/25                                      | Sam Hall<br>MSc BSc (Hons) | Catherine O'Reilly<br>MCIEEM | Catherine O'Reilly<br>MCIEEM |
| 02                | 11/06/26                                      | Sam Hall<br>MSc BSc (Hons) | Catherine O'Reilly<br>MCIEEM | Catherine O'Reilly<br>MCIEEM |

**Disclaimer:**

The information provided within this report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

This report is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No liability is accepted by Lizard Landscape Design and Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. This report does not constitute legal advice. No warranty, express or implied, is made as to the advice in this report or any other service provided by us.

**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

Top Floor - Caravelle House, 17-19 Goring Road, Worthing, BN12 4AP  
01903 216033 office@lizardlandscape.co.uk lizardlandscapeecology.com

## Table Of Contents

|                                           |           |
|-------------------------------------------|-----------|
| <b>Summary</b>                            | <b>1</b>  |
| <b>1.0 Introduction</b>                   | <b>2</b>  |
| <b>2.0 Methodology</b>                    | <b>4</b>  |
| <b>3.0 Baseline Ecological Conditions</b> | <b>17</b> |
| <b>3.1 Designated Sites</b>               | <b>19</b> |
| <b>4.0 Assessment of Effects</b>          | <b>37</b> |
| <b>5.0 Ecological Enhancements</b>        | <b>45</b> |
| <b>6.0 Conclusions</b>                    | <b>46</b> |
| <b>7.0 References</b>                     | <b>48</b> |

## FIGURES

**Figure No. 01 – Walked Transect Route**

**Figure No. 02 – Locations of Static Bat Detectors**

**Figure No. 03 – Pond Plan**

**Figure No. 04 – Site Habitat Plan**

**Figure No. 05 – Species Recorded During Static Monitoring – North**

**Figure No. 06 – Species Recorded During Static Monitoring – South**

## APPENDICES

**Appendix A – Planning Policy and Legislation**

**Appendix B – Reptile Survey Report**

**Appendix C – GCN eDNA Results 2026**

**Appendix D – GCN eDNA Report 2024**



## SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Ms T Starmer to undertake an Ecological Impact Assessment of the proposed development of The Copse Phase 02, Worthing Road, Southwater (*Grid Reference: TQ 15882 28144 – hereafter referred to as 'the site'*). A Preliminary Ecological Appraisal of the site was undertaken on 17th of June 2025. Bat activity surveys and aerial inspections of trees were recommended and subsequently undertaken from July to October 2025. An assessment of the ecological impact of the proposals was then undertaken using this baseline data.

The site was dominated by other neutral grassland, with a sparse woodland parcel within the east half of the site, a ditch that intersects the site from northwest to south, UK priority habitat woodland along the northern boundary, and tree lines along the west boundary and adjacent to the south and east boundaries. These habitats are of broadly moderate ecological value, with the highest value associated with the woodland and tree lines, which would be retained and protected throughout development. The redline of the current proposal also covers an area dominated by modified grassland linking the main site area to Worthing Road to the east covering the area of an access road proposed in a separate planning application (DC/24/0622).

Bat activity surveys revealed that the site is used by a range of bat species; predominantly common and widespread species with a few calls of barbastelle recorded. Much of the suitable habitat on site would be retained and so risk avoidance measures have been deemed appropriate here. eDNA surveys of local ponds returned a positive and negative result for GCN presence in ponds 2 and 1, respectively. It is therefore recommended that a District Level Licence is obtained for GCN. Reptile surveys of the land to the east indicates the likely absence of these taxa in the local area and within the site. Further to this, the site offers some suitable habitats for [REDACTED] common invertebrates, roosting bats and breeding birds. Avoidance and mitigation measures for those taxa have been built into the design of the scheme in accordance with the mitigation hierarchy and BS42020: 2013.

Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible and non-significant**.

## 1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology (LLDE) has been commissioned by Ms T Starmer to undertake an Ecological Impact Assessment of the proposed development of The Copse Phase 02, Worthing Road, Southwater (*Grid Reference: TQ 15882 28144– 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 of the site was undertaken on 17th of June 2025. The following phase 2 survey work was recommended and subsequently undertaken:
- Aerial Inspections of trees
  - Bat activity surveys
- 1.4 An initial preliminary Ecological Appraisal was also undertaken on 27<sup>th</sup> of February 2024 for an application focused on proposals for development of a new care home in the east of the landholding (hereafter referred to as ‘phase 01’). Further survey including reptile surveys, great crested newt (GCN) environmental DNA (eDNA) analysis of local ponds and 2no. bat emergence surveys of a dwelling were recommended and subsequently undertaken from March 2024 to June 2024. eDNA analysis of local ponds was then repeated in April and May 2026.
- 1.5 A summary of the results of these surveys, 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**

- 1.6 The site consists of an irregular shaped plot of grassland with woodland, scrub and brash piles and a ditch in the central area and woodland and tree lines along and adjacent to the site boundaries. The site is situated in a suburban area with residential development to the east and farmland to the west, south and north. The soil on site is described as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

**Surrounding Landscape**

- 1.7 The site is located on the northern edge of the village of Southwater in west Sussex. The developed area of Southwater extends c. 3.3 km to the south of the site and the land in all other directions is dominated by farmland with frequent woodland parcels.

**Development Proposals**

- 1.8 It is understood that the proposals are for a residential development of approximately 23no. homes with associated soft and hard landscaping. The redline of the current proposal covers an area linking the main site area to Worthing Road to the east covering the area of an access road proposed in a separate planning application (DC/24/0622).

**Report 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 METHODOLOGY

### 2.1 Desk Study

- 2.1.1 The Multi-Agency Geographical Information Centre (MAGIC) website was consulted for information regarding the location of waterbodies, priority habitats, statutory designated sites and existing wildlife mitigation licences, within a potential zone of influence of the site. Additionally, the Local Planning Authority (LPA) website was consulted for information regarding the location of non-statutory designated areas, and satellite imagery and historic mapping was used to inform an assessment of the recent land use changes and habitat types within the area. The following potential zones of Influence's have been used for the following potential ecological receptors during the desk study assessment:

**Table No. 01 – Zones of Influences for Ecological Receptors**

| Potential Zone of Influence | Type of Record / Designation/s / Ecological Receptor                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.5km                       | <ul style="list-style-type: none"> <li>• Ponds, ditches and other water bodies.</li> </ul>                                                                                                                                                                                                                                                                                                      |
| 2.0km                       | <ul style="list-style-type: none"> <li>• Priority Habitats (UKBAP) (NERC, 2006);</li> <li>• European Protected Species Mitigation Licences (EPSMLs);</li> <li>• Local Nature Reserves (LNRs);</li> <li>• National Nature Reserves;</li> <li>• Sites of Special Scientific Interest (SSSIs); and</li> <li>• Local Wildlife Sites (LWS) / Site of Nature Conservation Interest (SNCI).</li> </ul> |
| 10.0km                      | <ul style="list-style-type: none"> <li>• Special Protection Areas (SPAs);</li> <li>• potential Special Protection Areas (pSPAs);</li> <li>• Ramsars (Wetlands of International Importance);</li> <li>• proposed Ramsars (pRamsar);</li> <li>• Special Areas of Conservation (SACs); and</li> <li>• possible Special Areas of Conservation (pSACs).</li> </ul>                                   |
| 12.0km                      | <ul style="list-style-type: none"> <li>• Special Areas of Conservation (SACs) and possible Special Areas of Conservation (pSACs) designated for supporting Annex II bat species.</li> </ul>                                                                                                                                                                                                     |

- 2.1.2 All protected / notable species records within a 2.0 km radius of the site were provided by Sussex Biodiversity Records Centre (SxBRC) in 2023 for a previous application adjacent to the east of the site. These records were considered within this report, along with the results of targeted surveys for bats and reptiles carried out as part of that separate application in 2024.
- 2.1.3 The Local Planning Authority website was consulted to inform of additional relevant information to this assessment, including local development plan policies in relation to ecology and biodiversity (see *Appendix A – Planning Policy and Legislation*) as well as any Local Nature Recovery Strategies, Nature Improvement Areas (NIAs) and Biodiversity Opportunity Areas (BOAs) etc.

## 2.2 Field Survey

- 2.2.1 The field survey was undertaken on 17th of June 2025 by a Suitably Qualified Ecologist (Sam Hall, Consultant Ecologist; Lizard Landscape Design & Ecology). Weather conditions were warm (c.24°C), with a light wind (Beaufort Scale 2), 10% cloud cover and no rain.
- 2.2.2 The field survey comprised a walkover inspection of the site, immediately adjacent land and boundaries features, in which ecological features were noted and mapped in accordance with principles of the UKHabs-Professional Classification System (UKHabs Ltd., 2023). A minimum mapping unit of 25m<sup>2</sup> / 5m length was used and habitats were identified to at least level 4 wherever practicable. Habitat categories were slightly amended to be consistent with those used as part of Biodiversity Net Gain calculations.
- 2.2.3 A list of plant species noted was compiled, together with an estimate of relative abundance made according to the DAFOR scale. In addition, Target Notes were used to provide supplementary information where necessary on any features encountered which were notable, relevant to the assessment or too small to map.

## 2.3 Evaluation of Ecological Features

- 2.3.1 An assessment was made to determine the likely importance of any flora / habitats present, as well as determining whether any qualified as being of conservation merit, such as those listed as habitats and species of principal importance for the conservation of biodiversity (NERC, 2006). Likely importance was determined in reference to a predefined geographical frame of reference, as laid out in *Guidelines for Ecological Impact Assessment* (CIEEM, 2022), this was assessed in accordance with the criteria outlined below:

**Table No. 02 – Likely Importance Assessment Criteria**

| Likely Importance Categories | Likely Importance Criteria                                                                                 |
|------------------------------|------------------------------------------------------------------------------------------------------------|
| Negligible                   | Of no notable ecological value.                                                                            |
| Site                         | Ecologically valuable within the context of the site                                                       |
| Local                        | Ecologically valuable within the context of the immediate surrounds, i.e., c. 1km <sup>2</sup>             |
| District                     | Ecologically valuable within the context of the wider surrounds / LPA district, i.e., c. 10km <sup>2</sup> |
| County                       | Ecologically valuable within the context of the wider county, i.e., c. 100km <sup>2</sup>                  |
| Regional                     | Of ecological value within the region, i.e., south east, south west, midlands etc.                         |
| National                     | Of ecological value within the context of the United Kingdom, such as a SSSIs, NNR's etc.                  |
| International                | Ecological value of global significance, such as SACs, SPAs etc.                                           |

- 2.3.2 Habitats within and adjacent to the site were assessed to determine their potential to support protected and notable fauna. This assessment was based on professional judgment and experience, with due consideration to industry standard best practice guidance for the relevant taxa, as laid out in the table below. The possible presence of each taxon was summarised as either negligible, low, moderate, high or confirmed.

**Table No. 03 – Habitat Suitability Assessment References**

| <b>Fauna</b>        | <b>Relevant Best Practice Guidance</b>                                                                                                                                                           |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Great Crested Newts | <i>Great Crested Newt Conservation Handbook</i> (Langton et al, 2001) & <i>Evaluating the Suitability of Habitat for the Great Crested Newt</i> (Oldham et al, 2000)                             |
| Reptiles            | <i>Herpetofauna Workers' Manual</i> (Gent and Gibson, 2003)                                                                                                                                      |
| Bats                | <i>Bat Surveys for Professional Ecologists: Good Practice Guidelines (4<sup>th</sup> edition)</i> (Collins, 2023)                                                                                |
| Dormice             | <i>Hazel Dormouse Mitigation Handbook</i> (Wells et al, 2025)                                                                                                                                    |
|                     |                                                                                                                                                                                                  |
| Water Vole          | <i>The Water Vole Mitigation Handbook</i> (Dean et al, 2016)                                                                                                                                     |
| Birds               | <i>Guidance for Bird Surveys in Relation to Development</i> (NE, 2022)                                                                                                                           |
| Invertebrates       | <i>Considering Terrestrial Invertebrates in Preliminary Ecological Appraisals</i> (Jukes, 2021) and <i>Organising Surveys to Determine Site Quality for Invertebrates</i> (English Nature, 2005) |

- 2.3.3 Photographs were taken as evidence and to illustrate any notable ecological features on site. These have been provided within the body of the relevant parts of the Results section, where appropriate.

## 2.4 Daytime Bat Walkover Survey

- 2.4.1 A Daytime Bat Walkover (DBW) survey was undertaken as part of the field survey assessment by the suitably experienced surveyor (Sam Hall Accredited Agent under; Catherine O'Reilly (Bat Level 2 Class Licence; 2016-20460-CLS-CLS)).
- 2.4.2 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.
- 2.4.3 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*

- 2.4.4 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. 04 – 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.                                     |

2.4.5 If it was possible to adequately assess a Potential Roosting Feature (PRF) from ground level then this was completed, and the feature classified as either:

- **PRF-I:** Feature only suitable for individual or very small numbers of bats, either due to size or lack of suitable surrounding habitat; or
- **PRF-M:** PRF is suitable for multiple bats and therefore has the potential to be used by a maternity colony.

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

**Table No. 05 – Criteria for Assessing the Bat Roosting Suitability of Structures**

| Potential Suitability | Description                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>None</b>           | No habitat features on site likely to be used by any roosting bats at any time of year.                                                                                                                                                                                                                                                                                    |
| <b>Negligible</b>     | 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.                                                                                                                                                                                    |
| <b>Low</b>            | 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.                                                        |
| <b>Moderate</b>       | 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.                                                                                                        |
| <b>High</b>           | 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. |
| <b>Confirmed</b>      | Direct evidence of bats identified.                                                                                                                                                                                                                                                                                                                                        |

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

**Table No. 06 – 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. |

## 2.5

| Category   | Item   | Value (approx. %) |
|------------|--------|-------------------|
| Category 1 | Item 1 | 100               |
|            | Item 2 | 95                |
|            | Item 3 | 95                |
|            | Item 4 | 20                |
| Category 2 | Item 1 | 100               |
|            | Item 2 | 5                 |
|            | Item 3 | 15                |
|            | Item 4 | 25                |
|            | Item 5 | 35                |
|            | Item 6 | 65                |
|            | Item 7 | 65                |
|            | Item 8 | 50                |
| Category 3 | Item 1 | 100               |
|            | Item 2 | 35                |

## 2.6 Aerial Inspections

2.6.1 An aerial inspection survey was undertaken on all trees that were categorised as Further Assessment Required (FAR) within the initial site visit and DBW. Aerial inspections were carried out on 8<sup>th</sup> and 28<sup>th</sup> August 2025 by the following tree climbers.

- Louise Barker (Bat Licence 2023-11422-CL18-BAT / NPTC Level 2 Certificate of Competence in Tree Climbing and Aerial Rescue).
- Sam Hall (Consultant Ecologist / NPTC Level 2 Certificate of Competence in Tree Climbing and Aerial Rescue).
- Rich Emerson (Consultant Ecologist / NPTC Level 2 Certificate of Competence in Tree Climbing and Aerial Rescue).

## 2.7 Bat Activity Surveys

### *Walked Transect Surveys*

2.7.1 Bat activity survey visits were undertaken on 22<sup>nd</sup> July, 21<sup>st</sup> of August and 15<sup>th</sup> of September 2025.

2.7.2 During each visit 2no. bat surveyors walked a transect to ascertain the level of bat activity across the site. The transect was walked along the north, east and south of the site to monitor bat activity across the proposed construction zone with a focus on the boundary vegetation.



**Figure No. 01** – Walked transect route.

- 2.7.3 The dusk surveys started at sunset and terminated approximately 2no. hours after sunset. Data including species; general patterns of activity; and number of passes were recorded throughout the survey. Details of the survey visits can be found in *Table No. 07* below.

**Table No. 07 – Walked Transect Survey Details**

|                       |                 |                 |                 |
|-----------------------|-----------------|-----------------|-----------------|
| <b>Date</b>           | 22.07.25        | 21.08.25        | 15.09.25        |
| <b>Survey Type</b>    | Dusk            | Dusk            | Dusk            |
| <b>Surveyors</b>      | EH, LD          | AC, SR          | MD, AC          |
| <b>Weather</b>        | 17°C WF1<br>Dry | 16°C WF1<br>Dry | 17°C WF3<br>Dry |
| <b>Sunset / Start</b> | 21:05           | 20:11           | 19:15           |
| <b>Finish</b>         | 23:05           | 22:11           | 21:15           |

- 2.7.4 Bats were identified using Peersonic RPA3 and Echo Meter Touch 2 Pro bat detectors during transects.
- 2.7.5 Each walked transect survey was completed by two experienced ecologists, with each survey visit lead by a licenced ecologist or accredited agent.

#### *Static Monitoring*

- 2.7.6 A total of 5no. nights static monitoring per survey visit was carried out, in accordance with BCT guidelines. A static bat detector was deployed in the northern site boundary and another in the southern site boundary to provide data on habitat features which shall be impacted by the proposals.

#### *Data analysis*

- 2.7.7 Sonogram analysis was undertaken using the Kaleidoscope programme and the data for all visits has been collated and used to calculate bat activity indices. Within the analysis, a pass is defined as 1no. or more calls in sequence, each sequence separated by 1no. second or more in which no calls are recorded.



**Figure No. 02** – Locations of Static Bat Detectors.

## 2.8 Great Crested Newt Survey

2.8.1 Any ponds identified within or adjacent to the site were subject to a Habitat Suitability Index (HSI) assessment to determine their suitability to support GCN, in line with current guidance (Oldham *et al*, 2000). The HSI is a numerical index, between 0 and 1 (0 representing completely unsuitable habitat and 1 representing optimal habitat), calculated based on the suitability of 10 calculable indices.

2.8.2 HSI assessment is useful to aid in determining how suitable a given waterbody is for GCN, but it does not directly correlate with GCN presence or population numbers and serves as information only.

2.8.3 The 10 indices considered as part of the HSI assessment include geographic area, pond area, permanence of waterbody, water quality, shading, waterfowl presence, fish presence, number of ponds within 1.0km, suitability of terrestrial habitat and macrophyte cover, which were investigated during the field survey assessment.

### *eDNA survey*

2.8.4 In 2024, access was gained for ponds 1, 2 and 4 and water samples were collected from those ponds on the 15<sup>th</sup> of April 2024 and subsequently tested for traces of GCN environmental DNA. This targeted survey was carried out for the ecological assessment of the phase 01 proposal, but the information is also relevant to this scheme.

- 2.8.5 In 2026 access was gained for ponds 2 and 1 and water samples were collected from those ponds on the 28<sup>th</sup> of April and the 8<sup>th</sup> of May 2026, respectively and subsequently tested for traces of GCN environmental DNA.
- 2.8.6 20no. water samples were collected from the margin of each pond, with samples spaced as evenly as possible to collect a representative sample. All samples were collected using a sterile sampling kit as supplied by SureScreen Scientifics.
- 2.8.7 Each sample was stored in a refrigerator before return to SureScreen Scientifics for analysis. The results of the survey indicate the presence or absence of GCN eDNA within the water body.

## **2.9 Ecological Impact Assessment**

- 2.9.1 The methodology for Ecological Impact Assessment (EcIA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

2.9.2 The CIEEM guidelines (2018) state that ecological features should be considered within a 'defined geographical context'. The geographical frame of reference used to determine ecological importance in this assessment is detailed below:

- International and European;
- National;
- Regional;
- County;
- District;
- Local;
- Site Level;
- Negligible.

2.9.3 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.

2.9.4 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). When describing impacts the assessment refers to characteristics such as the extent; magnitude; duration; frequency; and, reversibility of the impact in order to provide justification for any conclusions about the nature and likelihood of the impact described.

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

## 2.10 Constraints and Limitations

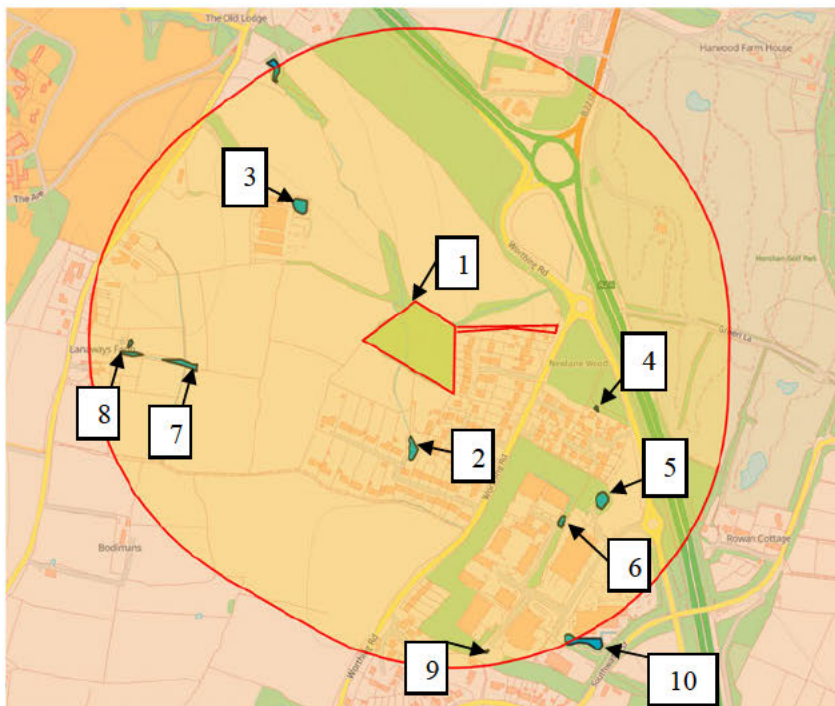
- 2.10.1 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible or may have been otherwise inconspicuous at the time of the survey and hence overlooked. These are accepted constraints associated with the UKHabs Survey Methodology.
- 2.10.2 The phase 2 surveys for this project were commissioned in late spring, so a spring bat activity visit was not possible. Previous activity surveys in 2015 recorded predominantly common and widespread bat species. There was also a malfunction of the static detector deployed along the northern boundary on 21<sup>st</sup> of August 2025 meaning that it did not record. Given the consistent levels of activity and similar species composition recorded across all survey periods this is not considered to have materially affected the outcome of this assessment.
- 2.10.3 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.

### 3.0 BASELINE ECOLOGICAL CONDITIONS

#### 3.1 Desk Study

##### *Pond Study*

- 3.1.1 A total of 10no. ponds were identified within 500.0 m of the site, of which Ponds 1, 2 and 4 were within 250.0 m, based on OS mapping and satellite imagery. Pond 1 is connected to the ditches that run along the north of the site and through the western half of the site and was found to be dry during the initial site visit. Pond No. 2 is located c. 130m south of the site within an area of woodland associated with a residential property. Pond No. 4 is located c. 250m east of the main construction zone and c. 160m southeast from the site entrance on Worthing Road within an area of woodland.



**Figure No. 03 – Pond Plan** - Buffer zone of 500m from the site boundary shown with ponds numbered. Data taken from MAGIC. Contains OS Data © Crown Copyright and database rights 2025.

### Priority Habitats

- 3.1.2 In accordance with the MAGIC dataset, within a 2.0 km search radius of the site there were UKBAP Priority Habitats (NERC, 2006) of Lowland Meadows, Lowland Mixed Deciduous Woodland (some of which was categorised as ancient), Traditional Orchards and Woodpasture and Parkland. MAGIC categorises much of the site as Lowland Mixed Deciduous Woodland however examination of aerial imagery reveals that the woodland was cleared at some point between April 2020 and June 2021.

### European Protected Species Mitigation Licence (EPSML) Search

- 3.1.3 In accordance with the MAGIC dataset, within a 2.0km search radius of the site, the following records for existing European Protected Species Mitigation Licences (EPSMLs) were returned:

**Table No. 08 – EPSMLs within Potential Zone of Influence**

| Year                 | Species                                                                                                 | Licence Permission                                                                               | Distance and Direction |
|----------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------|
| 2016<br>(Bats)       | Common pipistrelle <i>Pipistrellus pipistrellus</i>                                                     | Destruction of a breeding and resting site                                                       | 160m E                 |
| 2013<br>(Dormice)    | Soprano pipistrelle <i>Pipistrellus pygmaeus</i>                                                        |                                                                                                  |                        |
|                      | Brandt's bat <i>Myotis brandti</i>                                                                      |                                                                                                  |                        |
|                      | Hazel dormouse<br><i>Muscardinus avellanarius</i>                                                       |                                                                                                  |                        |
| 2020                 | Great crested newt<br><i>Triturus cristatus</i>                                                         | Destruction of a resting site                                                                    | 340m SE                |
| 2018<br>(Dormice)    | Hazel dormouse<br><i>Muscardinus avellanarius</i>                                                       | Destruction of a resting site                                                                    | 350m S                 |
| 2018/19<br>(GCN)     | Great crested newt<br><i>Triturus cristatus</i>                                                         |                                                                                                  |                        |
| 2015                 | Common pipistrelle <i>Pipistrellus pipistrellus</i><br>Soprano pipistrelle <i>Pipistrellus pygmaeus</i> | Destruction of a breeding site                                                                   | 370m NE                |
| 2018/20<br>(Dormice) | Hazel dormouse<br><i>Muscardinus avellanarius</i>                                                       | Destruction of a resting site and breeding site (Dormice)<br>Destruction of a resting site (GCN) | 470m S                 |
| 2018/19/20<br>(GCN)  | Great crested newt<br><i>Triturus cristatus</i>                                                         |                                                                                                  |                        |

### 3.2 Designated Sites

#### *Statutory Designated Sites*

- 3.2.1 There were no statutory sites identified within a potential zone of influence of the site, the nearest statutory site is St Leonards Forest SSSI, located 4.5km north-east.
- 3.2.2 The site is located c. 12.01km from The Mens SAC, just outside of the 12km Wider Conservation Zone whereby all impacts upon bat flightlines and commuting routes must be assessed.
- 3.2.3 The site is located within the Impact Risk Zone of Slinfold Stream and Quarry SSSI and St Leonards Forest SSSI, however development proposals do not to meet the criteria which would require consultation with Natural England.

### 3.3 Local Non-Statutory Protected Areas

- 3.3.1 Local Wildlife Sites (LWSs) are designations applied to the most important non-statutory nature conservation sites. They are recognised by the National Planning Policy Framework (2024) and as such are material considerations when assessing planning applications. The following LWSs are located within 2.0km of the site.

**Table No. 09 – Non-Statutory Designated Areas**

| Site                | Location    |
|---------------------|-------------|
| Sparrow Copse LWS   | c. 1.0km NW |
| High Woods LWS      | c. 1.2km SE |
| Courtland Woods LWS | c. 2.0km NW |

### 3.4 Existing Habitat Assessment

#### *Site Assessment*

##### 3.4.1 Habitats within and adjacent to the site include:

- Other neutral grassland
- Lowland mixed deciduous woodland (UK Priority Habitat).
- Other woodland; broadleaved
- Bramble scrub
- Bare ground
- Individual trees
- Modified grassland
- Developed land: sealed surface
- Ecologically valuable line of trees
- Ditch

#### *Other neutral grassland*

- 3.4.2 Grassland covered much of the site, and did not appear to be managed, with a tall sward up to c. 150cm and occasional areas of short sward with few grasses. The minimum floral species diversity seen in quadrats was 8no., grasses including false oat-grass (*Arrhenatherum elatius*), Yorkshire fog (*Holcus lanatus*) and false brome (*Brachypodium sylvaticum*) were abundant, pendulous sedge (*Carex pendula*) was occasional to abundant across the site and the most numerous forbs included common fleabane (*Pulicaria dysenterica*), common knapweed (*Centaurea nigra*) and broad-leaved dock (*Rumex obtusifolius*). This habitat is of **site level value**.



**Image No. 01** – View of the grassland sward.



**Image No. 02** – View of the grassland sward showing an area of short sward in the foreground.

#### *Lowland mixed deciduous woodland / wet woodland*

- 3.4.3 A mosaic of UK Priority Habitats of lowland mixed deciduous woodland and wet woodland was noted along the north and west boundaries of the site. The canopy was predominantly made up of oak (*Quercus robur*) and ash (*Fraxinus excelsior*) was noted as abundant (many with signs of ash dieback). Holly (*Ilex aquifolium*) and hawthorn (*Crataegus monogyna*) were noted in the shrub layer and wood melick (*Melica uniflora*) and pendulous sedge frequent in the ground layer. This habitat is of **local level value** and is likely what dominated the site before the clearance in 2020.

- 3.4.4 Please note that the site was previously dominated by woodland that, according to historical aerial imagery, was cleared sometime in 2020. The habitats recorded during the initial site visit in 2025 have been used to map the habitats in *Figure No. 04 - Site Habitat Plan*. Moreover, according to the BNG user guidelines regarding degradation of the site, the main site area to the west has been mapped entirely as lowland mixed deciduous woodland within the associated BNG package. Therefore, there is significant difference between the site habitat plan included with this report and the baseline habitat plan included in the BNG package.



**Image No. 03** – View of the woodland.

*Other woodland; broadleaved*

- 3.4.5 An area of sparse woodland was noted towards the east of the site, predominantly consisting of ash with dieback. The ground layer was not typical of woodland with the surrounding grassland sward continuing through this habitat, likely due to the sparse canopy. This habitat is of **site level value**.

*Blackthorn / bramble scrub*

- 3.4.6 Discreet parcels of blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus* agg.) scrub were noted colonising deadwood piles within the main site area and as present towards the site entrance. This habitat is of **site level value**.

*Bare ground*

- 3.4.7 Bare ground dominated some of the areas where deadwood piles were noted. Very few floral species had colonised these areas. This habitat is of **site level value**.

*Individual trees*

- 3.4.8 Some scattered trees were noted towards the northeast of the main site area, at the site entrance and adjacent to the south boundary. Species included ash, oak and field maple, and maturity ranged from early mature to mature. This habitat is of **site level value**.

*Modified grassland*

- 3.4.9 Grassland dominated the area of the redline that extends east from the main site area to Worthing Road. The floral species diversity here was lower and dominated by grasses such as Yorkshire fog *Holcus lanatus* and cocks foot *Dactylis glomerata*. This habitat is of **site level value**.

*Developed land; sealed surface*

- 3.4.10 An existing building intersects the red line close to the site entrance on Worthing Road. This habitat is of **negligible floristic value**.



**Image No. 04** – A view of the existing building.

*Ecologically Valuable Line of Trees*

- 3.4.11 Mature native trees were noted adjacent to the east and south site boundaries, ranging in maturity but predominantly from semi-mature to mature. Ash *Fraxinus excelsior* and oak *Quercus robur* were most numerous with occasional hazel *Corylus avellana* and field maple *Acer campestre*. This habitat meets the onsite woodland at the west site corner. This habitat is of **local level value**.

*Non-native and Ornamental Hedgerow*

- 3.4.12 A cherry Laurel *Prunus laurocerasus* hedgerow, c. 0.5m in width and c. 3m in height was noted along the southern site boundary, associated with an adjacent garden. This habitat is of **site level value**.

*Ditch*

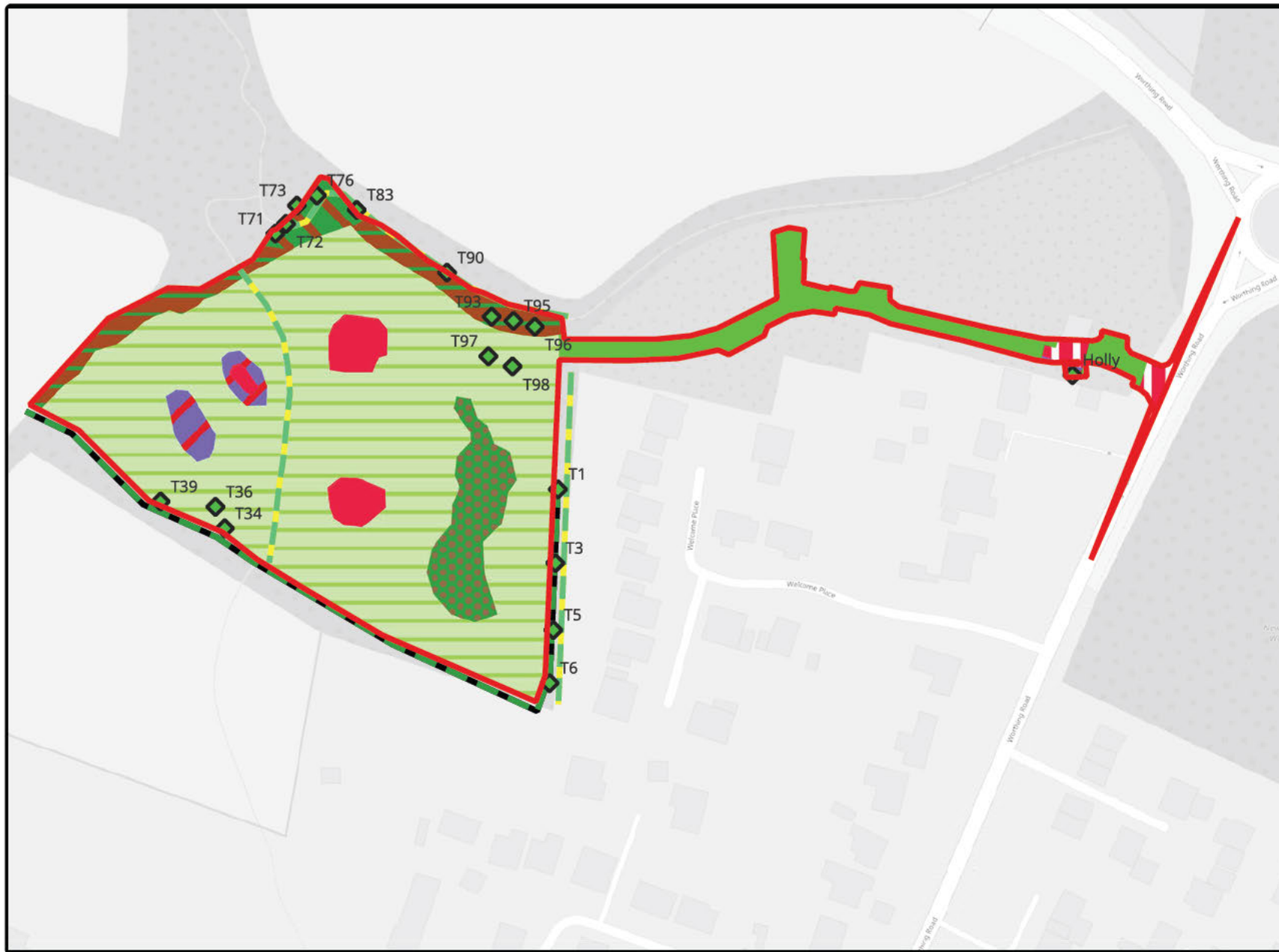
- 3.4.13 A wet ditch was noted adjacent to the north of the site that intersects with the on site woodland and then through the grassland to the south boundary and adjacent to the east boundary. Pendulous sedge *Carex pendula* dominated the banks with limited other vegetation where the ditch fell in the woodland. Where the ditch falls within grassland the banks also featured the grassland species seen across that habitat. The banks of the ditch were shallow (c. 50cm) but relatively steep. There was very little water held in the ditch but the ground was wet, which suggests that the ditch does hold water for part of the year.



Image No. 05 – A view of the ditch habitat within the grassland.

### 3.5 Invasive Species

- 3.5.1 No species listed on Schedule 9 of the Wildlife and Countryside Act 1981 were noted within the site. Please note that cherry laurel is recognised by the Sussex Biological Records Centre as a Sussex Invasive Non-Native Species.



## Legend

|                                     |  |
|-------------------------------------|--|
| Red Line Boundary                   |  |
| Ecologically valuable line of trees |  |
| Ditches                             |  |
| Blackthorn scrub                    |  |
| Bramble scrub                       |  |
| Developed land; sealed surface      |  |
| Lowland mixed deciduous woodland    |  |
| Modified grassland                  |  |
| Other neutral grassland             |  |
| Other woodland; broadleaved         |  |
| Watercourse footprint               |  |
| Wet woodland                        |  |
| Bare ground                         |  |
| Individual tree                     |  |



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

### Client

Ms T Starmer

### Project Title & Location

The Copse 02, Worthing Road, Southwater

| Drawn by | Approved by | Rev | Date     |
|----------|-------------|-----|----------|
| SH       | COR         | 00  | 01/12/25 |

Figure No. 04 - Site Habitat Plan

### 3.6 Protected Species Assessment

#### *Amphibians*

##### *Desk Study*

- 3.6.1 SxBRC returned 14no. records of common toad *Bufo bufo*, 21no. records of common frog *Rana temporaria*, 22no. records of palmate newt *Lissotriton helveticus* and 51no. records of smooth newt *Lissotriton vulgaris*. Additionally, there were 32no. records of GCN recorded within 2.0km of the site boundary. The majority of these records were located at Hop Oast Farm, which is c. 850m north-east of the site. The most recent record for GCN was from 2018 located c. 200m south of the site (Pond 2). This record consisted of 6no. adults.

##### *eDNA results*

- 3.6.2 eDNA analysis of water samples taken from ponds 1, 2 and 4 in 2024 returned negative results for GCN environmental DNA in all tested ponds. However, the updated eDNA analysis of water samples taken from ponds 1 and 2 in 2026 returned a positive result for pond 2 and negative for pond 1. See Appendix C for results.

##### *Site Assessment*

- 3.6.3 A ditch was noted on site although it was mostly dry at the time of the initial site visit with no submerged aquatic vegetation noted. The terrestrial habitats present on site, dominated by grassland and woodland likely offer moderate habitat suitability for amphibians including GCN. It is accepted that, unless connected by highly suitable habitat, GCN are likely to stay within 250m of breeding ponds (Langton *et al.*, 2001). The pond study identified 10no. ponds within 500m of the site, 4no. of which were within 250 m of the site.
- 3.6.4 Overall, the habitats onsite were assessed as of moderate potential value to amphibians including GCN and the results of the eDNA analysis indicate likely **presence of GCN**.

## Reptiles

### Desk Study

- 3.6.5 SxBRC returned 3no. records of slow worm *Anguis fragilis*, 17no. records of common lizard *Zootoca vivipara* and 13no. records of grass snake *Natrix Helvetica* within 2km of the site.

### Site Assessment

- 3.6.6 Reptiles require a mosaic of habitats to persist in a landscape, including vegetative cover for refuge opportunities, open areas for basking and a diverse flora to support viable invertebrate prey throughout the year. The habitats noted on site provide potential suitability for common and widespread species. However, a targeted reptile survey carried out as part of the development proposal in the east section of the landholding recorded no reptiles over 7no. visits in spring 2024. Reptile surveys were also carried out across the site and the phase 01 area in 2015. Those targeted surveys also recorded no reptiles across 7no. visits. Therefore, it is unlikely that reptiles are making use of the site and it has been assessed as of **negligible value** for this species group.

## Bats

### Desk Study

- 3.6.7 SxBRC returned records for 9no. species of bat within 2.0km of the site. Species included common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown-long eared *Plecotus auritus*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri*, Brandt's *Myotis brandti* and whiskered *Myotis mystacinus*. 2no. European Protected Species Licence in relation to bats were returned. The nearest located c. 150m east of the site. The licence was from 2015 and allowed the destruction of a breeding site for common pipistrelle and soprano pipistrelle bats.

### Daytime Bat Walkover - Trees

- 3.6.8 Various trees were identified as offering some level of bat roost suitability during the ground level assessment. A summary of these features is illustrated in the table below. The tree reference numbers align with the associated arb package and are illustrated on *Figure No. 03 – Site Habitat Plan*.

**Table No. 10 – Preliminary Bat Roost Assessment Results - Trees**

| Tree Ref     | Description                                                                                    | Category |
|--------------|------------------------------------------------------------------------------------------------|----------|
| T1           | Large oak with heavy pruning, adjacent to eastern site boundary.                               | FAR      |
| T3           | Large oak with moderate deadwood and some PRFs noted from the ground.                          | FAR      |
| T5           | Ash with significant tear out.                                                                 | FAR      |
| T6           | Ash with knot holes and a tear out.                                                            | FAR      |
| T71/72/73/76 | Large oaks in north woodland with varying levels of deadwood in their crowns, view obstructed. | FAR      |
| T83          | Ash tree with moderate deadwood and large potential cavity at c. 5m on south aspect.           | FAR      |
| T90          | Large oak on site boundary with major deadwood, view obstructed.                               | FAR      |
| T93          | Ash with significant tear out.                                                                 | FAR      |
| T95/96       | Large oak with tear out including some retained deadwood and woodpecker holes noted.           | FAR      |

*Daytime Bat Walkover - Buildings*

- 3.6.9 A dwelling was noted close to the site entrance. The building was a brick building with a pitched tiled roof and was in a state of disrepair including broken windows and missing roof tiles. Internal inspection was not possible. Previous bat emergence surveys identified 3no. day roosts of 4no. common pipistrelles. This building is expected to be demolished as part of a separate planning application, which will be done under licence and has been informed by an appropriate level of further survey for roosting bats.

*Winter Roosting Potential*

- 3.6.10 Given the results of the initial site visit and in consideration of the limited potential presence of hibernation features in trees, the suitability of the surrounding habitat for commuting and foraging, and the presence of known roosts, it was determined that the site offered **low** winter roosting potential.

*Walked Transect Surveys*

3.6.11 A total of 6no. bat species were recorded on site including:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Long-eared species (*Plecotus sp.*)
- Serotine (*Eptesicus serotinus*)

*Dusk Transect – 22<sup>nd</sup> July 2025*

3.6.12 Overall, bat activity was moderate with a total of 15no. passes of common pipistrelle including sightings of 5no. individual bats, 2no. passes of soprano pipistrelle and 1no. pass of serotine. Activity during this survey was predominantly recorded along the northern site boundary.

*Dusk Transect – 21<sup>st</sup> August 2025*

3.6.13 Bat activity was moderate with 10no. records of common pipistrelle, including up to 3no. bats seen foraging along the northern tree line. At least one of the bats recorded foraging along the northern tree line at the beginning of the survey was a soprano pipistrelle, and a single long-eared species was heard and not seen close to the northern boundary constantly calling between 21:46 and 21:52. Activity during this survey was predominantly recorded along the northern site boundary, with only a single common pipistrelle recorded along the southern boundary.

*Dusk Transect – 15<sup>th</sup> September 2025*

3.6.14 Bat activity was consistent with the previous transects. Moderate numbers of passes of common pipistrelle and low numbers of soprano pipistrelle were noted along the north boundary and some towards the southwest of the site. A total of 12no. records were made for common pipistrelle and 2no. for soprano pipistrelle.

*Static Monitoring*

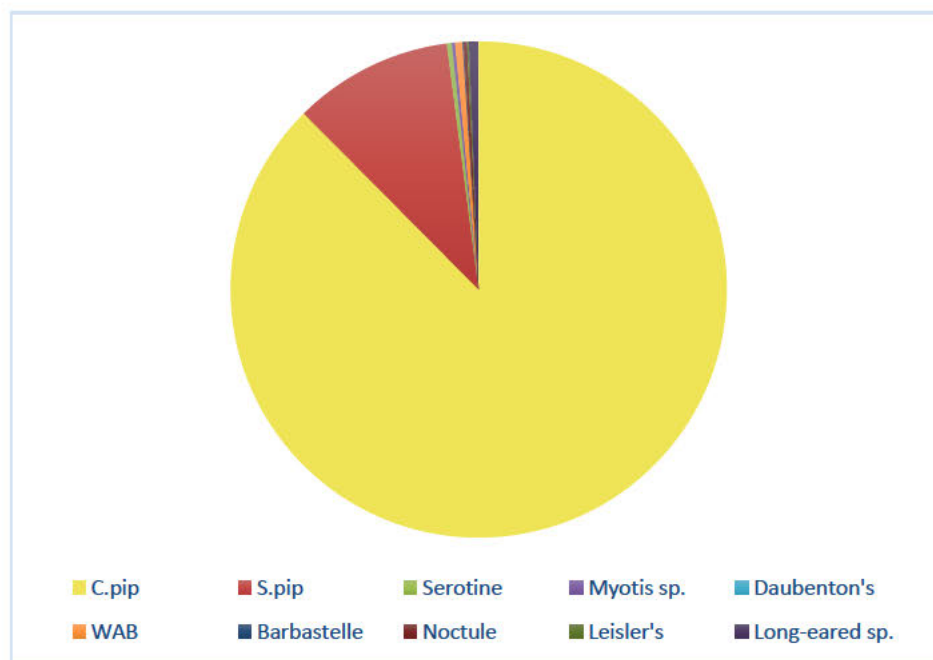
3.6.15 A total 10no. bat species were recorded during the static monitoring including:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Noctule (*Nyctalus noctula*)
- Leisler's (*Nyctalus leisleri*)
- Daubenton's (*Myotis daubentonii*)
- Barbastelle (*Barbastella barbastellus*)
- Serotine (*Cnephaeus serotinus*)
- Long-eared species (*Plecotus* sp.)
- WAB species (*Myotis mystacinus* / *alcathoe* / *brandti*)
- Myotis species (*Myotis* sp.)

*Static Detector Summary - North*

3.6.16 A total of 3,167 calls were recorded across the 2no. recording periods with a mean average of 317 calls per night. Activity was dominated by common pipistrelle and soprano pipistrelle, which accounted for 87.53% and 10.39% (respectively) of all calls during the static monitoring periods. Other species included 0.87% long-eared species and 0.47% WAB species. The remaining bat species / groups each represent less than 0.4% of the recorded calls.

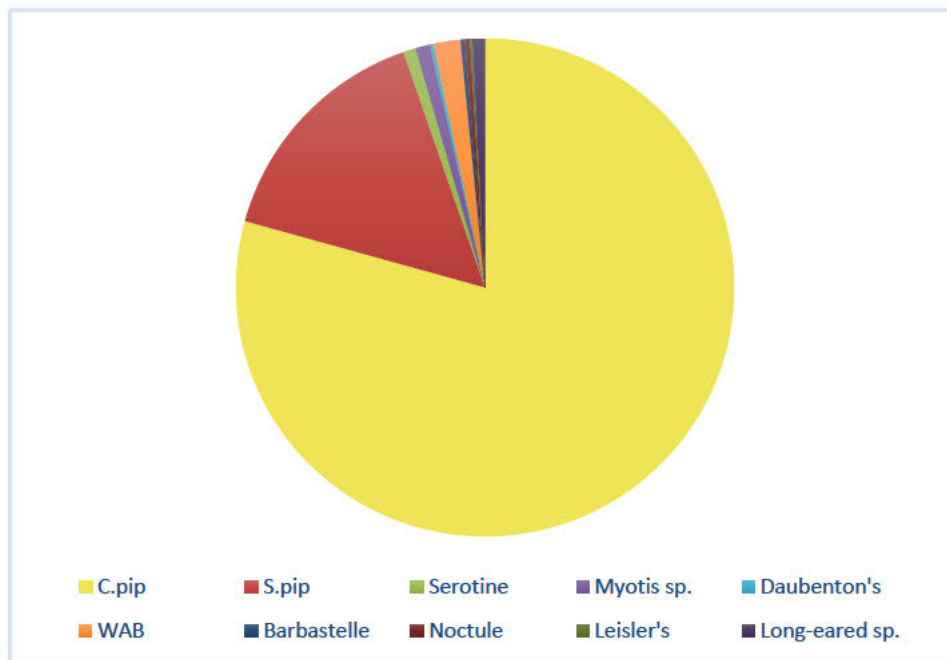
3.6.17 A total of 2no. barbastelle calls were recorded, a species listed under Annex II of the EU Habitats Directive, as referenced by the Conservation of Habitats and Species Regulations 2017 (as amended). A single recording of barbastelle was made on the 24<sup>th</sup> and the 25<sup>th</sup> of July, both between 01:30 and 01:50.



**Figure No. 04** – Species composition recorded during static monitoring of the north boundary.

#### *Static Detector Summary - South*

- 3.6.18 A total of 4,557 calls were recorded across the 3no. recording periods with a mean average of 304 calls per night. Activity was dominated by common pipistrelle and soprano pipistrelle, which accounted for 79.31% and 15.38% (respectively) of all calls during the static monitoring periods. Other species included 1.73% WAB species. The remaining bat species / groups each represent less than 1.0% of the recorded calls.
- 3.6.19 A total of 13no. barbastelle calls were recorded, a species listed under Annex II of the EU Habitats Directive, as referenced by the Conservation of Habitats and Species Regulations 2017 (as amended). Barbastelle recordings for the south static bat detector location were as follows:
- 1no. on 21<sup>st</sup> of August at 23:08
  - 2no. on 22<sup>nd</sup> of August at 00:19 / 23:58
  - 1no. on 23<sup>rd</sup> of August at 00:27
  - 5no. on 5<sup>th</sup> of October at 20:00 / 20:15 / 20:15 / 21:45 / 21:46
  - 4no. on 6<sup>th</sup> of October at 21:40 / 23:18 / 23:22 / 23:46



**Figure No. 05** – Species composition recorded during static monitoring of south boundary.

- 3.6.20 In summary, the site is a moderately active commuting route for common and widespread species with some occasional use by low numbers of less common species and notable species including an Annex II species.

#### *Aerial Inspection of Trees*

- 3.6.21 All trees identified within *Table No. 10* that required further assessment, with the exception of T83, were found to be unsuitable with all features found to be either too small for even a single bat or significantly exposed to sunlight and or wind. Tree T83 was climbed once and a large cavity identified at c. 5.0m on the south aspect that was confirmed to be of a size that could be expected to accommodate multiple bats or a maternity roost, and no direct signs of bat were recorded. Works to this tree are not required to allow works to proceed and it should be retained. If works to this tree are proposed in the future, prior to those works it should be subject to appropriate further assessment, under consultation from an appropriately qualified ecologist and in line with current guidance regarding roosting bats.

***Dormouse******Desk Study***

- 3.6.22 SxBRC returned 11no. records of hazel dormouse *Muscardinus avellanarius* within 2km of the site. The closest of these records were located 200m south of the site and 400m north-east of the site.

***Site Assessment***

- 3.6.23 The boundary vegetation of the site was characterised by native tree and shrub species of known value to dormouse. Further to this, the site contains an area of woodland to the north which spans beyond the site boundary and the site was noted as functionally connected with further suitable habitat in the surrounds. The other woodland parcel identified within the eastern half of the other neutral grassland was sparse and dominated by diseased ash and the grassland was not tussocky, making them of negligible value to this species. The site is therefore of **site level value** with a moderate potential for dormouse to make use of the **northern woodland and boundary vegetation**. Moreover, it is likely that the woodland that previously encompassed much of the site was suitable for this species.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## **Birds**

### *Desk Study*

- 3.6.26 SxBRC returned numerous records of protected and / or notable birds from within the search area including skylark *Alauda arvensis*, barn owl *Tyto alba*, cookoo *Cuculus canorus* and swift *Apus apus* on the BoCC Red List as well as Schedule I *The Wildlife and Countryside Act 1981 (as amended)* species including redwing *Turdus iliacus* and fieldfare *Turdus pilaris*

### *Site Assessment*

- 3.6.27 The individual trees and scrub concentrated along the site boundaries represent moderate nesting opportunities for passerine birds, and the suburban nature of this site is likely to limit potential species to more common and widespread species that are tolerant of human disturbance. The grass was uniformly tall across the eastern section of the site and with only occasional short areas in the western main development area, combined with tall boundary vegetation, suboptimal field size and no records of ground nesting birds made across all daytime site visits it is unlikely to support ground nesting species. The site is of **site level value** to local birds and it is unlikely to support rare or notable species.

## **Water Voles**

### *Desk Study*

- 3.6.28 SxBRC returned 2no. historic records of water vole *Arvicola amphibius*. These records were located c. 800m west and 2km north-east of the site. Albeit these records were from 1983 and 1997.

### *Site Assessment*

- 3.6.29 There was no evidence of water vole such as burrows, droppings or feeding signs found during the site visit. The slope of banks of the ditches were generally unsuitable, dominated by pendulous sedge and water levels are evidently not stable year-round. The site was therefore determined to be of **negligible** value to water vole which are unlikely to be present but development should be mindful of the potential presence of this species.

***Invertebrates****Desk Study*

- 3.6.30 Records were returned for various species of protected / notable invertebrates from within the search area, for Stag beetle *Lucanus cervus* and for Cinabbar moth *Tyria jacobaeae*.

*Site Assessment*

- 3.6.31 The diversity of native species and habitats noted across the site could support a moderate diversity of invertebrate species.

## 4.0 ASSESSMENT OF EFFECTS

- 4.0.1 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).
- 4.0.2 Protected species for which the site offers negligible suitability have been scoped out of further assessment.

### 4.1 Designated Sites

#### *Potential Impacts*

- 4.1.1 The site does not lie within or adjacent to any nationally or internationally designated sites. There are 3no. Local Wildlife Sites located within 2km of the site, the nearest is Sparrow Copse, which lies c.1km northwest of the site. Given the intervening distances and the scale of the development, no impacts upon any of the LWS are predicted.
- 4.1.2 The site is located just outside the 12km Wider Conservation Area of The Mens SAC whereby fragmentation of commuting routes or foraging habitat could impact on the integrity of the SAC. The proposals shall retain all existing boundary vegetation and will access the site via a grassland area. Therefore, no adverse effects upon The Mens SAC is predicted to occur.

*Mitigation and Compensation*

- 4.1.3 Standard measures should be incorporated into the construction phase to avoid potential impacts, such as through emissions, upon any local designated sites.

*Residual Impacts*

- 4.1.4 Once mitigation measures have been considered, there shall be **no likely significant effect** upon any designated site as a result of this development.

**4.2 Habitats***Potential Impacts*

- 4.2.1 Development proposals would predominantly result in the loss of other neutral grassland, as well as smaller areas of scrub and woodland habitats of broadly low ecological value and potential pollution and / or sedimentation of the ditches, the loss of which would be of moderate impact magnitude significant at the site level.
- 4.2.2 The site clearance that took place in 2020 removed woodland that was identified as UK priority habitat lowland mixed deciduous woodland, the loss of which should be considered of moderate impact magnitude at the local level.

*Mitigation and Compensation*

- 4.2.3 Mitigation measures to reduce impacts upon retained trees and the ditches during the construction phase should be detailed within a Construction Environmental Management Plan (CEMP) and secured via condition. Measures will follow industry standard guidance and include measures such as:
- Protection of retained trees with weld-mesh fencing fitted with a fine gauge debris mesh to prevent incursion of dust or debris. Full protection measures are detailed in the arboricultural package which accompanies this application.
  - Appropriate dust management measures to include sheeting of lorries carrying loose loads to and from site, wheel wash facilities, water suppression and reduced height of load tipping.

- Safe storage of chemicals a minimum of 10m from any watercourse and outside the Root Protection Areas (RPA) of retained trees.
- Measures to protect the watercourse from sedimentation shall include minimising the extent of vegetation stripping, timing vegetation removal to ensure that bare earth is not left exposed for extended periods and particularly not during wet times of the year, and the use of silt fencing in areas where the topography warrants their use.
- All re-fuelling and chemical storage shall take place in a bunded enclosure with appropriate containment measures in place and spill kits available.

4.2.4 All retained trees and hedgerows should be protected during construction and operation in accordance with BS5837:2012. Moreover, the proposed landscape scheme shall include the provision of new native planting or enhancement of existing habitats with a focus on native species that would replace those ecological niches that would be lost.

4.2.5 In order to compensate for the loss of lowland mixed deciduous woodland and to meet BNG requirements, off-site lowland mixed deciduous woodland units will need to be purchased from an off-site unit provider.

#### *Residual Impacts*

4.2.6 Loss of UK priority habitat during clearance works in 2020 has been identified for the site, the impact of which is **significant** and must be properly compensated for. Provided mitigation and protection measures are followed, no further priority or other important habitats or plant species will be affected by this development, the impact of which is **not significant**.

#### 4.4 Bats

##### *Potential Impacts*

- 4.4.1 The results of the activity surveys indicate that the site is used primarily by common and widespread species of bats for foraging and commuting with occasional activity by notable species such as barbastelle. Given the dominance of common and widespread bat species that are known to be relatively light and gap tolerant in the survey activity survey data, potential impacts would be limited to artificial light spill onto retained habitats and would be of minor impact magnitude significant at the site level.
- 4.4.2 Some trees are proposed for removal (many with ash die back), but no potential fragmentation of boundary features has been identified. Tree T83 was categorised as PRF-M and should be fully retained. If works to this tree are proposed in the future, prior to those works it should be subject to appropriate further assessment, under consultation from an appropriately qualified ecologist and in line with current guidance regarding roosting bats.

##### *Mitigation and Compensation*

- 4.4.3 Artificial light spill upon the retained boundary vegetation shall be avoided to allow the continued use of these areas as a foraging resource and commuting route for bats. To ensure that this is achieved, the scheme lighting design will be produced in accordance with the guidance note 08/23 (BCT/ILP). Furthermore, given the uncontrolled lighting of the proposed residences a landscape corridor planted with native shrub and tree species will be included in the scheme design to provide both space between the development and the existing boundaries and a physical semi-natural buffer once vegetation has established.
- 4.4.4 Native species of value for bats shall also be included when specifying species composition of habitat creation / enhancement that will include provision of diverse wildflower grassland, species rich scrub and woodland and enhancement of the ditch banks.

##### *Residual Impacts*

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

## 4.5 [REDACTED] Hedgehogs

### *Potential Impacts*

- 4.5.1 In the absence of mitigation, impacts could include the trapping of [REDACTED] / hedgehogs in footings / trenches, fragmentation of habitat, and disruption of commuting corridors. Future impacts would be of low significance but likely to occur.

### *Mitigation and Compensation*

- 4.5.2 In order to ensure that potential impacts to [REDACTED] hedgehogs are avoided, the following Reasonable Avoidance Measures (RAMs) shall be incorporated into the construction phase as follows:

- All contractors should be given a toolbox talk to make them aware of the potential presence of these species in the area;
- All trenches and / or excavations should be covered overnight or have a broad and shallow ramp installed to prevent [REDACTED] mammals becoming trapped;
- [REDACTED]  
[REDACTED];
- [REDACTED]  
[REDACTED],  
[REDACTED];
- Short-term stockpiles should be checked daily for any signs of digging and fenced if appropriate.

### *Residual Impacts*

- 4.5.3 Once mitigation measures are taken into account, the overall impact of the scheme will be **negligible**.

## 4.6 Breeding Birds

### *Potential Impacts*

- 4.6.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest.

### *Mitigation and Compensation*

- 4.6.2 Any dense scrub or trees scheduled for removal within this application will be removed outside the nesting season (*season: March-August, although pigeons may nest all year*) or shall be checked prior to removal by a suitably qualified ecologist. To compensate for the loss of small areas of suitable nesting habitat bird boxes shall be fitted to the northern side of trees and integrated into the northern aspect of buildings during construction.

### *Residual Impacts*

- 4.6.3 The overall impact of the scheme will be **negligible**, with the proposed scheme likely to provide a long-term minor positive impact.

## 4.7 Dormice

### *Potential Impacts*

- 4.7.1 The construction zone is of negligible value to dormice, with the northern woodland boundary offering some suitable habitat. However, this habitat is to be retained within the scheme therefore connectivity to the surrounding landscape will not be impacted.

### *Mitigation and Compensation*

- 4.7.2 Retained woodland and boundary vegetation will be protected in line with the associated arboricultural package, including measures such as tree protective barriers. These measures will ensure that construction activities are kept separate from all suitable dormouse habitat. Significant semi-natural buffers such as tree lines and scrub shall also be used to provide a barrier between development and all retained boundary vegetation and woodland. As a precautionary measure, suitable habitat should be subject to a fingertip search by a suitably qualified ecologist prior to removal where required.

## 4.8 Amphibians

### *Potential Impacts*

- 4.8.1 The eDNA results provided for pond 2 suggest the presence of GCN on site. Works will therefore result in the destruction of suitable terrestrial habitat and no ponds. In the absence of mitigation, impacts could include the killing or injuring and trapping of amphibians in footing, trenches, pipework or gully pots, habitat fragmentation and permanent loss of terrestrial habitats.

### *Mitigation and Compensation*

- 4.8.2 The site is located across an 'Amber and red Zone' for GCN, and a detailed mitigation strategy shall be agreed with the LPA through the process of district level licencing; to be obtained from Naturespace. An enquiry was made to Naturespace on the 11<sup>th</sup> of June 2026.

### *Residual Impacts*

- 4.8.3 Once mitigation measures are taken into account, the impact of the scheme shall be **non-significant**.

## 4.9 Reptiles

- 4.9.1 Previous targeted surveys have indicated likely absence of reptile species. However, given the identified suitability of the site all contractors should be given a tool box talk to ensure that if any reptile species is encountered all works shall cease and a suitably qualified ecologist contacted for advice.

## 4.10 Invertebrates

### *Potential Impacts*

- 4.10.1 In the absence of mitigation, areas of suitable habitat for common widespread invertebrates would be lost. Due to the common and widespread distribution of habitats on site, the impacts would be of moderate impact magnitude at the site level and certain to occur.

*Mitigation and Compensation*

- 4.10.2 The proposed landscape scheme shall include compensatory areas of semi natural habitats including creation of scrub, ditches and woodland and enhancement of wildflower grassland and ditch banks. Further to this, a proposed Sustainable Drainage System (SuDS) will be planted with native wetland specialists. Where ornamental species are required, species with a recognised wildlife value such as plants listed on RHS Plants for Pollinators will be selected.

*Residual Impacts*

- 4.10.3 The overall impact of the scheme will be **negligible**, with the range of native habitats proposed providing a positive impact in the long-term relative the existing site conditions once vegetation has established.

## 5.0 ECOLOGICAL ENHANCEMENTS

5.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife to ensure compliance with National Planning Policy Framework (Department for Levelling Up, Housing & Communities, 2024) and Local Planning Policy and the Environment Act (2021) which mandates a minimum 10% net gain in biodiversity across all development sites. Ecological enhancements which will be included as part of development proposals include:

- The use of flowering plants with a recognised wildlife value within the soft landscape scheme to provide year-round interest for invertebrates.
- Enhancement of existing retained grassland with an appropriate species-diverse wildflower seed mix.
- The use of seed and fruit bearing tree species such as cherry, rowan, birch and crab apple within the scheme to provide a foraging resource for birds and invertebrates.
- The provision of a landscape buffer of native scrub and woodland habitat along the south, east and north site boundaries, planted with appropriate species to act as a buffer to the development and to prevent residents from entering the woodland.
- Creation of new ditches and enhancement of existing ditch banks.
- Creation of a new SuDS including native wetland specialist species.
- Incorporation of bird and bat boxes suitable for a range of species.
- Installation of invertebrate boxes suitable for a range of invertebrates.
- Creation of log piles within retained grassland.

## 6.0 CONCLUSIONS

- 6.1 The site was dominated by other neutral grassland, with a sparse woodland parcel within the east half of the site, a ditch that intersects the site from northwest to south, UK priority habitat woodland along the northern boundary, and tree lines along the west boundary and adjacent to the south and east boundaries. These habitats are of broadly moderate ecological value, with the highest value associated with the woodland and tree lines, which would be retained and protected throughout development. The redline of the current proposal also covers an area dominated by modified grassland linking the main site area to Worthing Road to the east covering the area of an access road approved in a separate planning application (DC/24/0622).
- 6.2 The proposed development is not expected to impact upon any designated sites. Woodland categorised as UK priority habitat lowland mixed deciduous woodland was cleared from much of the construction zone in 2020. It is not known if the woodland supported protected species such as dormouse, nor the condition of that woodland prior to clearance. The scheme design has included compensatory woodland provision and to fully compensate for the loss of lowland mixed deciduous woodland and to meet BNG requirements, off-site lowland mixed deciduous woodland units will need to be purchased from an off-site unit provider.
- 6.3 Bat activity surveys recorded a range of bat species commuting and foraging on site with species predominantly comprising common and widespread species. Low numbers of barbastelle were also recorded. If the recommended mitigation measures are incorporated, then impacts upon local bat populations are not expected to be significant.
- 6.4 eDNA analysis of local ponds returned a positive result for pond 2 located c. 130m south of the site, suggesting presence of this species in the area. Naturespace have been contacted and a District Level Licence will be obtained to cover impacts to GCN.

- 6.5 Reptile surveys of the land to the east indicate likely of reptile species in the local area and within the site. Suitable habitat was also identified on site for birds, [REDACTED] roosting bats and invertebrates. Avoidance and mitigation measures have been built into the design of the scheme for these taxa, in accordance with the mitigation hierarchy and BS42020: 2013.
- 6.6 Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible and non-significant**. Proposed ecological enhancements shall result in the creation of a variety of habitats on site. Please see the associated Biodiversity Net Gain statement for details of how the scheme will meet these requirements.

## 7.0 REFERENCES

BCT & ILP. (2023). Guidance Note 08/23. Bats and artificial lighting at Night. Bats and the Built Environment series. Institution of Lighting Professionals Regent House, Regent Place, Rugby, Warwickshire.

BSI. (2012). BS 5837:2012 Trees in relation to design, demolition and construction: Recommendations. London: BSI - British Standards Institution.  
British Standards Institution. (2013). BS 42020:2013 Biodiversity – Code of practice for planning and development. London: BSI

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

BSI. (2022). BS 42021:2022 Integral nest boxes – selection and installation for new developments – specification. London: British Standards Institution.

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at <http://www.ukhab.org/>

Buxton., A.S. & Griffiths., R.A. (2022). A revised system for interpreting great crested newt habitat suitability indices. Herpetological Journal. Volume 32 (July 2022), 114-119. Available online: <https://doi.org/10.33256/32.3.114119>

CIEEM. (2017). Guidelines for Preliminary Ecological Appraisal, 2<sup>nd</sup> edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM. (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM. (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2<sup>nd</sup> Edition. Chartered Institute of Ecology and Environmental Management. Winchester, UK

Collins., J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4<sup>th</sup> ed.) The Bat Conservation Trust

Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

DEFRA (2025)., Multi-Agency Geographic Information for the Countryside (MAGIC). Interactive Map. [online]. Available at <https://www.magic.gov.uk/>

English Nature. (2001). Great Crested Newt Mitigation Guidelines. Peterborough: EN

Gent, T. & Gibson, S. (eds). (2003). Herpetofauna Workers' Manual (revised reprint), JNCC, Peterborough, ISBN 1 86107 450 6.

[REDACTED]

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.

Ministry of Housing, Communities & Local Government (2025) National Planning Policy Framework. Available at: [www.gov.uk/government/publications/national-planning-policy-framework--2](http://www.gov.uk/government/publications/national-planning-policy-framework--2) (Accessed: 21 November 2025).

Mitchell-Jones and McLeish (2004): Bat Workers Manual; JNCC, 3rd Edition.

NE. (2023). The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. Natural England. Available online: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>.

Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal*, 10, 143–155

Rose, F., (2006). *The Wild Flower Key. How to Identify wild flowers, trees and shrubs in Britain and Ireland.* Revised and updated by Clare O'Reilly. ISBN: 978-0-7232-5175-0

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747. Available online at <https://britishbirds.co.uk/content/status-our-bird-populations>.

Streeter, D.: *The Most Complete Guide to the Flowers of Britain and Ireland*; Harper Collins, London (2010).

UKHabs Ltd. (2023). UK Habitat Classification Version 2.0. Available online: <https://ukhabs.org>.

Wells, D., Chanin, P. & Gubert, L. (2025) *Hazel Dormouse Mitigation Handbook.* The Mammal Society. ISBN: 978-1-0687982-2

**Table No. 11 – Species List for Habitat Parcels****Bracken / bramble scrub**

| <b>Common Name</b> | <b>Scientific Name</b>     | <b>DAFOR</b> |
|--------------------|----------------------------|--------------|
| Bracken            | <i>Pteridium aquilinum</i> | <b>F</b>     |
| Bramble            | <i>Rubus fruticosus</i>    | <b>D</b>     |
| Cleavers           | <i>Galium aparine</i>      | <b>O</b>     |
| Common Nettle      | <i>Urtica dioica</i>       | <b>O</b>     |

**Hedgerow with trees / line of trees**

| <b>Common Name</b> | <b>Scientific Name</b>    | <b>DAFOR</b> |
|--------------------|---------------------------|--------------|
| Ash                | <i>Fraxinus excelsior</i> | <b>LA</b>    |
| Blackthorn         | <i>Prunus spinosa</i>     | <b>LD</b>    |
| Field Maple        | <i>Acer campestre</i>     | <b>O</b>     |
| Hazel              | <i>Corylus avellana</i>   | <b>LF</b>    |
| Holly              | <i>Ilex aquifolium</i>    | <b>O</b>     |
| Oak                | <i>Quercus robur</i>      | <b>F</b>     |
| Silver Birch       | <i>Betula pendula</i>     | <b>O</b>     |

**Lowland mixed deciduous woodland**

| <b>Common Name</b> | <b>Scientific Name</b>     | <b>DAFOR</b> |
|--------------------|----------------------------|--------------|
| Beech              | <i>Fagus sylvatica</i>     | <b>O</b>     |
| Cherry Laurel      | <i>Prunus laurocerasus</i> | <b>F</b>     |
| Common Nettle      | <i>Urtica dioica</i>       | <b>F</b>     |
| Garlic Mustard     | <i>Alliaria petiolata</i>  | <b>F</b>     |
| Hazel              | <i>Corylus avellana</i>    | <b>O</b>     |
| Holly              | <i>Ilex aquifolium</i>     | <b>O</b>     |
| Oak                | <i>Quercus robur</i>       | <b>F</b>     |
| Yew                | <i>Taxus baccata</i>       | <b>O</b>     |

**Modified Grassland**

| <b>Common Name</b> | <b>Scientific Name</b>           | <b>DAFOR</b> |
|--------------------|----------------------------------|--------------|
| Cocks Foot         | <i>Dactylis glomerata</i>        | <b>O</b>     |
| Common Hogweed     | <i>Heracleum sphondylium</i>     | <b>O</b>     |
| Common Knapweed    | <i>Centaurea nigra</i>           | <b>O</b>     |
| Common Sorrel      | <i>Rumex acetosa</i>             | <b>O</b>     |
| Dandelion          | <i>Taraxacum officinale</i> agg. | <b>O</b>     |
| Greater Plantain   | <i>Plantago major</i>            | <b>R</b>     |
| Meadow Buttercup   | <i>Ranunculus acris</i>          | <b>LA</b>    |
| Oxeye Daisy        | <i>Leucanthemum vulgare</i>      | <b>LF</b>    |
| St Johns Wort      | <i>Hypericum perforatum</i>      | <b>O</b>     |
| Sweet Vernal Grass | <i>Anthoxanthum odoratum</i>     | <b>O</b>     |
| Yorkshire Fog      | <i>Holcus lanatus</i>            | <b>R</b>     |

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

## **Appendix A – Planning Policy and Legislation**

### Legislation

Legislation relating to wildlife and biodiversity of particular relevance to this report 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.*

This above legislation has been addressed, as appropriate, in the production of this report. Further details of legislation relating to the protection of particular ecological receptors are provided in the table below:

| Ecological Constraint                                                                                                                           | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SACs (Special Area of Conservation), SPAs (Special Protection Areas) and Ramsars (Wetlands of International Importance)                         | Under the Conservation of Habitats and Species Regulations 2017 places a duty on the competent authority to maintain the favourable conservation status of designated SAC, SPA and Ramsar sites. Therefore, where it appears to the appropriate nature conservation body that a notice of a proposal relates to an operation which is, or forms, part of a plan or project which is likely to have a significant effect on a European site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, it must make an appropriate assessment of the implications for that site in view of that site's conservation objectives. In the light of the conclusions of the assessment, it may give consent for the operation only after having ascertained that the plan or project will not adversely affect the integrity of the site. |
| European protected species (bats, otters, dormice, water voles, great crested newts)                                                            | It is an offence under the Conservation of Habitats and Species Regulations 2017 to deliberately kill or injure a European protected species, to destroy breeding/resting sites, or to deliberately disturb these species and affect their ability to survive, rear young, breed, or hibernate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nationally protected species (bats, water vole, otter)                                                                                          | It is an offence under the Wildlife and Countryside Act 1981 (as amended) to intentionally or recklessly disturb a species listed on Schedule 5 whilst it is in a place of shelter, or to obstruct access to a place for shelter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Nationally protected species (reptiles)                                                                                                         | It is an offence under the Wildlife and Countryside Act 1981 (as amended) to kill or injure common species of reptiles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| National conservation priority species (white-clawed crayfish, fish, common toad, reptiles, noctule, water vole, otter, hedgehog), i.e., UKBAPs | Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of species and habitats that are of principal importance for the conservation of biodiversity, and to take, and promote others to take, such steps to further the conservation of these habitats and species. These species and habitats will be considered by Planning Authorities in regard to the National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021) to conserve and enhance the natural environment.                                                                                                                                                                                                                                                                                                                                                                                      |

| Ecological Constraint                                                     | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Wild mammals (rabbits, foxes, water vole, otter, hedgehog, badger)        | It is an offence under the Wild Mammals (Protection) Act 1996 to inflict unnecessary suffering to any wild mammal with intent.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nesting birds                                                             | It is an offence under the Wildlife and Countryside Act 1981 (as amended) to damage or destroy a bird's nest whilst it is in use, and to kill or injure a bird or destroy an egg.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Non-statutory designated sites (SNCI's, LWS, LNR's, etc.)                 | LNRs are designated under Section 21 of the National Parks and Access to the Countryside Act 1949, which was amended by the Natural Environment and Rural Communities Act 2006. The value for biodiversity of LNRs and LWSs are recognised, and the sites and surrounding buffers are protected by the Local Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Biodiversity                                                              | Section 40 of the NERC Act 2006 states that each public authority "must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications. Chapter 15 of the National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021) states that the planning system and policies should minimise impacts on and provide net gains for biodiversity, and that, if significant harm to biodiversity would result from a development, then development should be avoided (through locating on alternative sites with less harmful impacts). |
| Irreplaceable habitats (ancient woodland, veteran trees, lowland meadows) | Chapter 15 of the National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021) states that development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Biodiversity Net Gain                                                     | +10% Biodiversity Net Gain (BNG) for new developments will be mandatory under the Environment Act (2021), although this deadline will be extended to April 2024 for small sites and there are exemptions for development below a 25m2 threshold, and for householder applications and self-builds. BNG means that proposals must result in more and/or better-quality natural habitats than there were before development. This also requires that any proposed habitats within the scheme would be necessary to manage for at least 30 years, which would be sought through the provision of S106 legal agreements or conservation covenants.                                                                                                                                                      |

### Local Planning Policy

The Horsham District Planning Framework (HDC, 2015) sets out the planning policies for development in the district in relation to biodiversity. Those of potential relevance to this assessment are highlighted in the table below:

| Policy Reference                                 | Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Policy 31: Green Infrastructure and Biodiversity | <p>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.</p> <p>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.</p> <p>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.</p> <p>Where felling of protected trees is necessary, replacement planting with a suitable species will be required.</p> <p>Particular consideration will be given to the hierarchy of sites and habitats in the district as follows:</p> <ul style="list-style-type: none"> <li>i.) Special Protection Area (SPA) and Special Areas of Conservation (SAC)</li> <li>ii.) Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNRs)</li> <li>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 &amp; ii above.</li> </ul> <p>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:</p> <ul style="list-style-type: none"> <li>i.) The reason for the development clearly outweighs the need to protect the value of the site; and,</li> <li>ii.) That appropriate mitigation and compensation measures are provided.</li> </ul> <p>Any development with the potential to impact Arun Valley SPA or the Mens SAC will be subject to a HRA to determine the need for an Appropriate Assessment. In addition, development will be required to be in accordance with the necessary mitigation measures for development set out in the HRA of this plan.</p> |

## APPENDIX B – Reptile Survey Report



## **REPTILE SURVEY REPORT**

---

**The Copse, Worthing Road, Southwater**

On behalf of: Ms T Starmer

|                   |                                      |                        |                     |                     |
|-------------------|--------------------------------------|------------------------|---------------------|---------------------|
| <b>Client:</b>    | Ms T Starmer                         |                        |                     |                     |
| <b>Project:</b>   | The Copse, Worthing Road, Southwater |                        |                     |                     |
| <b>Reference:</b> | LLD3042-ECO-REP-003-00-Reptile       |                        |                     |                     |
| <b>Revision:</b>  | <b>Date:</b>                         | <b>Author</b>          | <b>Proof</b>        | <b>Approved</b>     |
| 00                | 18/04/24                             | Hayley Swann<br>PgCert | Caleb Fry<br>MCIEEM | Caleb Fry<br>MCIEEM |

**Disclaimer:**

The information provided within this report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

This report is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No liability is accepted by Lizard Landscape Design and Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. This report does not constitute legal advice. No warranty, express or implied, is made as to the advice in this report or any other service provided by us.

**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.



# Contents

|                            | <b>Page No.</b> |
|----------------------------|-----------------|
| <b>SUMMARY</b>             | <b>01</b>       |
| <b>1.0 Introduction</b>    | <b>02</b>       |
| <b>2.0 Legislation</b>     | <b>03</b>       |
| <b>3.0 Methodology</b>     | <b>04</b>       |
| <b>4.0 Results</b>         | <b>07</b>       |
| <b>5.0 Evaluation</b>      | <b>08</b>       |
| <b>6.0 Recommendations</b> | <b>09</b>       |
| <b>7.0 Conclusion</b>      | <b>09</b>       |
| <b>8.0 References</b>      | <b>10</b>       |

## FIGURES

**Figure No. 01 – Location of Reptile Refugia**

## TABLES

**Table No. 01 – Weather Conditions During Surveys**

**Table No. 02 – Population Size Assessment**

**Table No. 03 – Summary of Results (adults only)**

## APPENDIX

**Appendix A – Full Survey Results**



## SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Ms T Starmer to complete a reptile presence / absence and population assessment of land at The Copse, Worthing Road, Southwater (*Grid Reference: TQ1606 2818 – hereafter referred to as 'the site'*).

Suitable reptile habitat in the form of modified grassland with ruderal and tussocky swards to the centre and to the site margins were noted during the Preliminary Ecological Appraisal, therefore a full suite of reptile surveys was recommended and subsequently undertaken to assess the presence / likely absence of reptiles.

40no. artificial reptile refugia (*roofing felt; 1.0 x 0.50 m*) were laid out around the site on the 5<sup>th</sup> of March 2024. Mats were distributed throughout all suitable reptile habitat within the centre and to the margins of the site. Refugia were allowed to bed-in for 15 days prior to survey visits being undertaken between the 20<sup>th</sup> of March and the 15<sup>th</sup> April 2024.

Targeted reptile presence / absence surveys of the site recorded no reptile species on site; therefore, reptiles are likely absent, or if present the population is so low that it falls below the survey detection rate. As no reptiles were found whatsoever on site, no impacts are predicted, and implementation of mitigation measures are not required.

## 1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology (LLDE) has been commissioned by Ms T Starmer to complete a reptile presence / absence and population assessment of land at The Copse, Worthing Road, Southwater (Grid Reference: *TQ1606 2818* – hereafter referred to as ‘the site’) to determine whether reptiles are present or likely absent at the site and, if present, to inform of their distribution and devise a suitable mitigation strategy.
- 1.2 The site was subject to a Preliminary Ecological Appraisal (PEA) on the 27<sup>th</sup> of February 2024 which identified the site offered suitable habitat to support reptiles in the form of modified grassland with ruderal and tussocky swards to the centre and to the site margins. This habitat would have the potential to be impacted upon by proposals. A full suite of reptile survey was therefore recommended and subsequently undertaken to assess the presence / likely absence of reptiles and, if present, to determine the likely population and species composition present, to inform an appropriate mitigation strategy, if required.
- 1.3 The survey data and analysis contained within this report has been compiled by Hayley Swann (*MSc, PgCert Applied Ecology; Consultant Ecologist; LLDE*) and reviewed by Caleb Fry (*BSc (Hons); MCIEEM; Senior Ecologist; LLDE*), with due regard to existing best practice guidance (CIEEM, 2017) (BSI, 2013).

### ***Site Information***

- 1.4 The survey area covers c. 1.0 hectares (ha) and consists of an irregular shaped plot, located to the north of Southwater village in West Sussex. The site consists of 2no. buildings, modified grassland with ruderal, areas of bramble scrub and a strip of woodland, with a ditch, along the northern boundary of the site.

**Surrounding Landscape**

- 1.5 The north, east and west of the site is open, consisting of pockets of woodland and arable fields and grassland, separated by tree lines and hedgerows. Directly south of the site is a residential development. The village of Southwater is c. 0.6km, south of the site with Horsham Town Centre c. 1.7km to the north of the site. No habitat exists for rare reptile species such as sand lizard *Lacerta agilis* or smooth snake *Coronella austriaca*.

**Development Proposals**

- 1.6 It is understood that the proposals involve the demolition of the buildings and construction of a care home with associated parking and landscaping.

**Scope of the Survey**

- 1.7 The aim of the reptile survey has been to:
- Determine whether reptiles exist on site;
  - Provide an assessment of the distribution and population of reptiles within the site, if present; and
  - Provide a mitigation strategy to ensure reckless killing / injury of reptiles is avoided, such that works would comply with *The Wildlife and Countryside Act (1981) (as amended)* and net gains for reptiles are achieved.

**2.0 LEGISLATION**

- 2.1 All species of UK reptile are listed under Schedule 5 Wildlife and Countryside Act 1981 (as amended). Reptiles are afforded protection under section 9(1) and section 9(5) against intentional killing or injuring, offering for sale, transport for sale or advertisement of any live or dead reptile. All UK reptile species are also recognised as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006, meaning that local authorities must take into account the conservation of reptiles when assessing a planning application.

- 2.2 Smooth Snake and Sand Lizard receive additional protection under The Conservation of Habitats and Species Regulations 2017 (as amended) which makes it an offence to kill, injure, capture or disturb them; damage or destroy their habitat; or to possess or trade in them.

### ***Licensing***

- 2.3 If a site is found to support Smooth Snake or Sand Lizard and disturbance or removal or habitat is unavoidable, a licence will be required from Natural England to allow work to proceed.
- 2.4 A licence must show that there is no satisfactory alternative to the works proposed, and that they are for reasons of health and safety or overriding reasons of public interest. Licences are only issued once planning permission has been granted.
- 2.5 There is no formal licensing requirement for sites which support only common UK reptile species (slow worm *Anguis fragilis*, common lizard *Zootoca vivipara*, adder *Vipera berus* or grass snake *Natrix helvetica*).

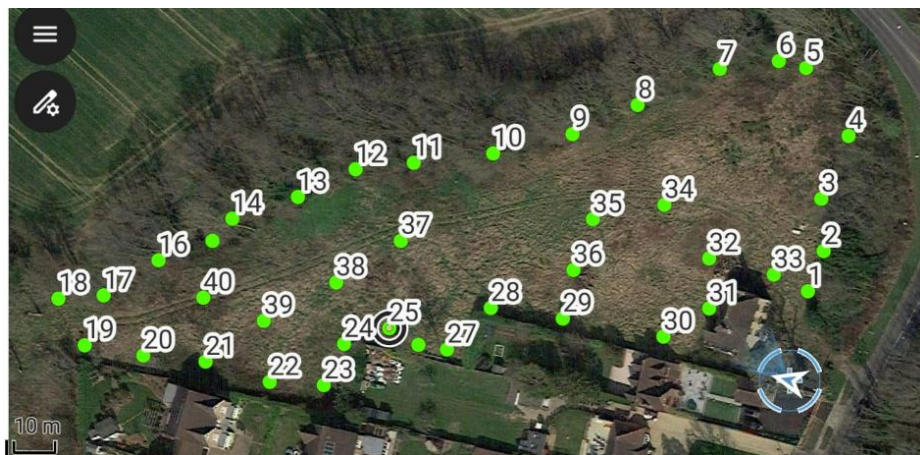
## **3.0 METHODOLOGY**

### **3.1 Desk Study**

- 3.1.1 All protected / notable species records were provided by Sussex Biodiversity Records Centre (SXBRC), as noted within the ACD Environmental Report July 2023, returned from within a 2.0km search radii of the site. ACD Environmental carried out phase 2 reptile surveys at the site in May and June 2015; no reptiles were found on site during these surveys.

## 3.2 Field Survey

- 3.2.1 Refugia were installed at a density of 40 refugia per hectare, exceeding the minimum survey density recommended for presence / absence surveys (Froglife, 1999). 40no. artificial reptile refugia (roofing felt; 1.0 x 0.50 m) were laid out around the site on the 5th of March 2024. Mats were distributed throughout all suitable reptile habitat within the centre and to the margins of the site. Refugia was allowed to bed-in for 15 days prior to survey visits being undertaken between the 20th of March and the 15th of April 2024. The locations of artificial reptile refugia are detailed within *Figure No. 01*.



**Figure No. 01 - Location of Reptile Refugia**

- 3.2.2 07 no. site visits were conducted, where the number, species, age and sex of the reptile's present were recorded. Debris piles on-site considered suitable as reptile refugia were checked during the surveys, and repeated walkovers of the site were used to search for active reptiles.
- 3.2.3 Surveys were undertaken during recommended times (08:00–11:00 and 16:00–18:30) with suitable weather conditions for surveying reptiles wherever possible (*guidelines recommend temperatures 9-18°C*), with due regard to professional judgement and best practice guidance (Froglife, 1999).

**Table No. 01 – Weather Conditions during Surveys**

| <b>Survey</b> | <b>Date of Visit</b> | <b>Time</b> | <b>Temp.</b> | <b>Weather Conditions</b> |
|---------------|----------------------|-------------|--------------|---------------------------|
| 1             | 20/03/24             | 16:00       | 14°C         | Dry, WF1, 10% cloud       |
| 2             | 25/03/24             | 16:00       | 11°C         | Dry, WF1, 20% cloud       |
| 3             | 27/03/24             | 09:15       | 10°C         | Dry, WF2, 0% cloud        |
| 4             | 02/04/24             | 10:30       | 14°C         | Dry, WF3, 20% cloud       |
| 5             | 05/04/24             | 16:00       | 15°C         | Dry, WF3, 20% cloud       |
| 6             | 10/04/24             | 09:30       | 11°C         | Dry, WF2, 0% cloud        |
| 7             | 15/04/24             | 10:30       | 10°C         | Dry, WF3, 20% cloud       |

### 3.3 Population Assessment

- 3.3.1 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.

**Table No. 02 – Population Size Assessment**

| <b>Species</b> | <b>Low Population</b> | <b>Good Population</b> | <b>Exceptional Population</b> |
|----------------|-----------------------|------------------------|-------------------------------|
| Slow Worm      | <5                    | 5-20                   | >20                           |
| Common Lizard  | <5                    | 5-20                   | >20                           |
| Grass Snake    | <5                    | 5-10                   | >10                           |
| Adder          | <5                    | 5-10                   | >10                           |

### **3.4 Details of Surveyors**

3.4.1 The reptile surveys were undertaken by the following ecologists, all of which are suitably qualified, trained and experienced in reptile surveys.

- Hayley Swann – Consultant Ecologist, 3 years' experience
- Sam Hall – Consultant Ecologist, 3 years' experience
- Max Day – Assistant Ecologist, 2 years' experience
- Kofi Bernson - Assistant Ecologist, 2 years' experience
- Fleur Booth - Assistant Ecologist, 2 years' experience

### **3.5 Constraints and Limitations**

3.5.1 No constraints were encountered during the course of the survey. All survey visits were completed within an appropriate time of year and in suitable weather conditions for reptiles to be active.

## **4.0 RESULTS**

### **4.1 Desk Study**

4.1.1 Sussex Biodiversity Records Centre (SxBRC) returned 3no. records of slow worm, 17no. records of common lizard and 13no. records of grass snake within 2.0km of the site. No other records of reptiles were returned within the 2.0km radii search area. Previous reptile surveys of the site in 2015 recorded no reptiles on site.

## 4.2 Field Survey

- 4.2.1 No reptile species were recorded during any of the survey visits. A summary of each visit is detailed below:

**Table No. 03 – Summary of Results**

| <b>Survey</b> | <b>Date of Visit</b> | <b>Results</b> |
|---------------|----------------------|----------------|
| 1             | 20/03/24             | No Reptiles    |
| 2             | 25/03/24             | No Reptiles    |
| 3             | 27/03/24             | No Reptiles    |
| 4             | 02/04/24             | No Reptiles    |
| 5             | 05/04/24             | No Reptiles    |
| 6             | 10/04/24             | No Reptiles    |
| 7             | 15/04/24             | No Reptiles    |

- 4.2.2 The results indicate that there are no reptiles present on site and therefore it is concluded that reptiles are likely absent from the site.
- 4.2.3 Generally, reptile surveys are unlikely to reliably determine the true population of reptiles across a site due to natural variability of individuals and standard detection rates, these are constraints acknowledged by current best practice guidance (Froglife, 1999) (Natural England, 2011) and do not cast doubt on the validity of the results, or population estimates from this assessment. If reptiles are present, given that none were detected, any populations would be of **negligible** size.

## 5.0 EVALUATION

- 5.1 As no reptiles were found whatsoever on site there would be negligible risk of works resulting in the killing / injury of reptiles, which would constitute an offence under the *Wildlife and Countryside Act (1981) (as amended)* and, therefore, no impacts are predicted, and species-specific mitigation measures are not required.

## **6.0 RECOMMENDATIONS**

- 6.1 As suitable reptile habitat exists on site, if planning permission is not granted within 18 months of the final reptile survey date or habitats on site develop to become more suitable to support reptiles, then updated reptile surveys would be required. It is therefore recommended that the current management regime for the site is continued to prevent more suitable habitat from becoming established.

## **7.0 CONCLUSION**

- 7.1 The assemblage of modified grassland with ruderal and tussocky swards to the centre and to the site margin resulted in the site being assessed at site value for reptiles, supplemented by many brash / log piles found throughout the site which offered hibernacula opportunities.
- 7.2 Targeted reptile presence / absence surveys of the site from the 20<sup>th</sup> of March to the 15<sup>th</sup> of April 2024 recorded no reptiles on site; therefore, reptiles are likely absent, or if present the population is so low that it falls below the survey detection rate. The potential for reptiles to occur will no longer be considered within the application.

## 8.0 REFERENCES

Froglife (1999) *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife: Halesworth

Herpetofauna Groups Of Britain And Ireland (1998) *Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards*. HGBI advisory notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife: Halesworth.

Joint Nature Conservation Committee (1998) *Herpetofauna Worker's Manual* (Gent, T. and Gibson, S. eds) JNCC: Peterborough

## Appendix A – Reptile Survey Results

|                 |                   |      |     |       |
|-----------------|-------------------|------|-----|-------|
| Surveyor        | MD                |      |     |       |
| Date            | 20/03/24          |      |     |       |
| Time            | 16:00             |      |     |       |
| Temperature     | 14°C              |      |     |       |
| Wind (Beaufort) | 1                 |      |     |       |
| Weather         | Light Cloud (10%) |      |     |       |
| Tile No.        | Species           | Ad/J | Sex | Notes |
| No Reptiles     |                   |      |     |       |

|             |                   |      |     |       |
|-------------|-------------------|------|-----|-------|
| Surveyor    | HS                |      |     |       |
| Date        | 25/03/24          |      |     |       |
| Time        | 16:00             |      |     |       |
| Temperature | 11°C              |      |     |       |
| Wind        | 1                 |      |     |       |
| Weather     | Light Cloud (20%) |      |     |       |
| Tile No.    | Species           | Ad/J | Sex | Notes |
| No Reptiles |                   |      |     |       |

|             |                 |      |     |       |
|-------------|-----------------|------|-----|-------|
| Surveyor    | FB              |      |     |       |
| Date        | 27/03/24        |      |     |       |
| Time        | 09:15           |      |     |       |
| Temperature | 10°C            |      |     |       |
| Wind        | 2               |      |     |       |
| Weather     | Clear and Sunny |      |     |       |
| Tile No.    | Species         | Ad/J | Sex | Notes |
| No Reptiles |                 |      |     |       |

|             |                   |      |     |       |
|-------------|-------------------|------|-----|-------|
| Surveyor    | KB                |      |     |       |
| Date        | 02/04/24          |      |     |       |
| Time        | 10:30             |      |     |       |
| Temperature | 14°C              |      |     |       |
| Wind        | 3                 |      |     |       |
| Weather     | Light Cloud (20%) |      |     |       |
| Tile No.    | Species           | Ad/J | Sex | Notes |
| No Reptiles |                   |      |     |       |

|             |                   |      |     |       |
|-------------|-------------------|------|-----|-------|
| Surveyor    | SH                |      |     |       |
| Date        | 05/04/24          |      |     |       |
| Time        | 16:00             |      |     |       |
| Temperature | 15°C              |      |     |       |
| Wind        | 3                 |      |     |       |
| Weather     | Light Cloud (20%) |      |     |       |
| Tile No.    | Species           | Ad/J | Sex | Notes |
| No Reptiles |                   |      |     |       |

|             |               |      |     |       |
|-------------|---------------|------|-----|-------|
| Surveyor    | SH            |      |     |       |
| Date        | 10/04/24      |      |     |       |
| Time        | 09:30         |      |     |       |
| Temperature | 11°C          |      |     |       |
| Wind        | 2             |      |     |       |
| Weather     | Clear & Sunny |      |     |       |
| Tile No.    | Species       | Ad/J | Sex | Notes |
| No Reptiles |               |      |     |       |

|             |                   |      |     |       |
|-------------|-------------------|------|-----|-------|
| Surveyor    | MD                |      |     |       |
| Date        | 15/04/24          |      |     |       |
| Time        | 10:30             |      |     |       |
| Temperature | 10°C              |      |     |       |
| Wind        | 3                 |      |     |       |
| Weather     | Light Cloud (20%) |      |     |       |
| Tile No.    | Species           | Ad/J | Sex | Notes |
| No Reptiles |                   |      |     |       |

## APPENDIX C – GCN eDNA Survey Results 2026

**Folio No:** 1293-2026  
**Purchase Order:** LLD3554  
**Contact:** Lizard Landscape Design & Ecology  
**Issue Date:** 14.05.2026  
**Received Date:** 07.05.2026

# GCN Report

Technical Report



SureScreen Scientifics

Folio No: 1293-2026  
Purchase Order: LLD3554  
Contact: Lizard Landscape Design & Ecology  
Issue Date: 14.05.2026  
Received Date: 07.05.2026

# GCN eDNA Analysis

## Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

## Results

| Lab ID         | Site Name                     | OS Reference | Degradation Check | Inhibition Check | Result   | Positive Replicates |
|----------------|-------------------------------|--------------|-------------------|------------------|----------|---------------------|
| GCN26<br>02697 | The Copse Phase 2 -<br>Pond 2 |              | Pass              | Pass             | Positive | 3/12                |

Matters affecting result: none

Reported by: Ruby Fielding

Approved by: Chelsea Warner

## Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

## Interpretation of Results

### Sample Integrity Check:

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.

### Degradation Check:

**Pass/Fail.** Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

### Inhibition Check:

**Pass/Fail.** The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

### Result:

#### **Presence of GCN eDNA (Positive/Negative/Inconclusive)**

**Positive:** GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

**Positive Replicates:** Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

**Negative:** GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

**Inconclusive:** Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.



**Folio No:** 1593-2026  
**Purchase Order:** LLD3554  
**Contact:** Lizard Landscape Design & Ecology  
**Issue Date:** 22.05.2026  
**Received Date:** 15.05.2026

# GCN Report

Technical Report



SureScreen Scientifics

Folio No: 1593-2026  
Purchase Order: LLD3554  
Contact: Lizard Landscape Design & Ecology  
Issue Date: 22.05.2026  
Received Date: 15.05.2026

# GCN eDNA Analysis

## Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

## Results

| Lab ID         | Site Name          | OS Reference | Degradation Check | Inhibition Check | Result   | Positive Replicates |
|----------------|--------------------|--------------|-------------------|------------------|----------|---------------------|
| GCN26<br>02695 | The Copse - Pond 1 |              | Pass              | Pass             | Negative | 0/12                |

Matters affecting result: none

Reported by: Ruby Fielding

Approved by: Jennifer Higginbottom

## Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

## Interpretation of Results

### Sample Integrity Check:

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.

### Degradation Check:

**Pass/Fail.** Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

### Inhibition Check:

**Pass/Fail.** The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

### Result:

#### **Presence of GCN eDNA (Positive/Negative/Inconclusive)**

**Positive:** GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

**Positive Replicates:** Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

**Negative:** GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

**Inconclusive:** Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.



## APPENDIX D – GCN eDNA Survey Report 2024



# **GREAT CRESTED NEWT EDNA REPORT**

---

**The Copse, Worthing Road, Southwater**

On behalf of: Ms T Starmer

|                   |                                      |                         |                              |                              |
|-------------------|--------------------------------------|-------------------------|------------------------------|------------------------------|
| <b>Client:</b>    | Ms T Starmer                         |                         |                              |                              |
| <b>Project:</b>   | The Copse, Worthing Road, Southwater |                         |                              |                              |
| <b>Reference:</b> | LLD3042-ECO-REP-004-00-GCN           |                         |                              |                              |
| <b>Revision:</b>  | <b>Date:</b>                         | <b>Author</b>           | <b>Proof</b>                 | <b>Approved</b>              |
| 00                | 30/04/24                             | Hayley Swann<br>BSc MSc | Catherine O'Reilly<br>MCIEEM | Catherine O'Reilly<br>MCIEEM |

---

#### Disclaimer:

The information provided within this report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

This report is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No liability is accepted by Lizard Landscape Design and Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. This report does not constitute legal advice. No warranty, express or implied, is made as to the advice in this report or any other service provided by us.

---

#### 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.



The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LH  
 T. 01903 216033 E. office@lizardlandscape.co.uk W. lizardlandscapeecology.com

# Contents

|                         | Page No.  |
|-------------------------|-----------|
| <b>SUMMARY</b>          | <b>01</b> |
| <b>1.0 Introduction</b> | <b>02</b> |
| <b>2.0 Legislation</b>  | <b>03</b> |
| <b>3.0 Methodology</b>  | <b>04</b> |
| <b>4.0 Results</b>      | <b>05</b> |
| <b>5.0 Mitigation</b>   | <b>06</b> |
| <b>6.0 Conclusion</b>   | <b>07</b> |
| <b>7.0 References</b>   | <b>08</b> |

## FIGURES

Figure No. 01 – Surveyed ponds within 500m of the site

## APPENDICES

Appendix A – eDNA Results

Appendix B – Photographs of surveyed ponds



## SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Ms T Starmer to undertake updated amphibian surveys of ponds adjacent to the The Copse, Worthing Road, Southwater (located around central grid reference: *TQ1606 2818* – hereafter referred to as ‘the site’)

A total of 10no. ponds were noted as being located within 500m of the site, however 3no. ponds were located on the opposite side of the A24; therefore, they were ruled out of further study as this road is a significant barrier to dispersal. 4no. of the remaining ponds were located 250-500m away and isolated from the site by areas of unsuitable habitat such as arable fields and / or residential housing. It was therefore considered highly unlikely that amphibians which may utilise these waterbodies would utilise the terrestrial habitat on site.

The 3no. remaining ponds were considered to be connected to the site and within a commutable distance such that any great crested newts present could feasibly utilise the terrestrial habitat on site. These ponds were subject to eDNA survey, with water samples collected on the 15<sup>th</sup> of April 2024 before analysis by SureScreen Scientifics.

Analysis of the samples indicated the likely absence of great crested newts within the surveyed ponds, however due to historic records of GCN within the area, basic mitigation must be adhered to and are outlined herein.

## 1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned to undertake great crested newt (GCN) surveys to inform the proposed development of The Copse, Worthing Road, Southwater (*Grid Reference: TQ1606 2818 – hereafter referred to as 'the site'*).

1.2 Surveys were recommended following the original ecology survey completed by this company in February 2024, which identified 3no. ponds within 250m of the proposed construction zone that would need further surveys.

### ***Survey Rationale***

1.3 The site consists of tussocky grassland and scrub, adjacent an area of woodland. The habitat present would be suitable for supporting great crested newt and other amphibians during their terrestrial phase. Further survey work to assess the potential impacts upon this species was therefore undertaken to rule out the presence of great crested newts within the local area.

### ***Site Information***

1.4 The survey area covers c. 1.0 hectares (ha) and consists of an irregular shaped plot, located to the north of Southwater village in West Sussex. The site consists of 2no. buildings, modified grassland with ruderal, areas of bramble scrub and a strip of woodland, with a ditch, along the northern boundary.

### ***Surrounding Landscape***

1.5 The site is located within a semi-rural setting. The north, east and west of the site is open, consisting of pockets of woodland and arable fields and grassland, separated by tree lines and hedgerows. The village of Southwater is c. 0.6km, south of the site with Horsham Town Centre c. 1.7km to the north of the site.

### ***Development Proposals***

1.6 It is understood that the proposals involve the demolition of the buildings and construction of a care home with associated parking and landscaping.

### **Aims**

- 1.7 The aim of the amphibian and great crested newt survey was;
- *To identify presence / absence of amphibians (including great crested newt (GCN) within the water bodies identified within 500.0m of the site.*
  - *To suggest population size classes for newt species recorded, where present;*
  - *To complete all data requirements for any possible application to Natural England for a mitigation licence if required; and;*
  - *To suggest mitigation to avoid / minimise impacts of the scheme to Protected Species if necessary.*

## **2.0 LEGISLATION**

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this report 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.*
- 2.2 The great crested newt is included on *Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended)* and *Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)* which makes it an offence, amongst other things, to deliberately capture, injure, kill or disturb any such species. In addition, this notification also prohibits the deliberate taking or destroying of any eggs and the damaging, destroying or blocking access to a breeding site or resting place of any such species.
- 2.3 The common toad (*Bufo bufo*) is a target of UK and Local Biodiversity Action Plans and listed as *Species of Principle Importance under Section 41 of the Natural Environment and Rural Communities Act 2006*. Local Authorities are obliged to have regard to the purpose of conserving biodiversity with particular emphasis on targeted species.

- 2.4 In addition, 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.*'

### **3.0 METHODOLOGY**

#### **3.1 Desk Study**

- 3.1.1 The Multi-Agency Geographical Information Centre (MAGIC) was consulted for information regarding granted EPS licences within 1.0km, and location of ponds within 500.0m radius of the proposed construction site.

#### **3.2 eDNA Survey**

- 3.2.1 An eDNA survey of 3no. suitable ponds within 500m of the site was completed on the 15<sup>th</sup> of April 2024.
- 3.2.2 20no. water samples were collected from the margin of each pond, with samples spaced as evenly as possible to collect a representative sample. All samples were collected using a sterile sampling kit as supplied by SureScreen Scientifics.
- 3.2.3 Each sample was stored in a refrigerator before return to SureScreen Scientifics for analysis. The results of the survey indicate the presence of absence of great crested newt environmental DNA within the water body.

## 4.0 RESULTS

### 4.1 Desk Study

- 4.1.1 Sussex Biodiversity Records Centre (SxBRC) returned 14no. records of common toad *Bufo bufo*, 21no. records of common frog *Rana temporaria*, 22no. records of palmate newt *Lissotriton helveticus* and 51no. records of smooth newt *Lissotriton vulgaris*. Additionally, there were 32no. records of GCN recorded within 2.0km of the site boundary. The majority of these records were located at Hop Oast Farm, which is c. 850m north-east of the site. The most recent record for GCN was from 2018 located c. 200m south-west of the site. This record consisted of 6no. adults.

### 4.2 Pond Assessment

- 4.2.1 Pond 1 (P1) is located c. 100m north-west of the site. The pond was shaded by woodland vegetation at the time of the survey and was c. 10cm deep in the middle. No macrophytes were present, nor any fish or wildfowl.
- 4.2.2 Pond 2 (P2) is a small pond located c. 150m south-east of the site, adjacent to New Road which is part of the new residential development. Vegetation was over hanging c. 50% of the pond and it was c. 20cm deep in the middle at the time of the survey. The pond covered c. 50m<sup>2</sup> with reeds to the margins.
- 4.2.3 Pond 3 (P3) is located c. 200m south-west of the site, within an area of woodland. The pond was deep at the time of the survey and covered c. 440m<sup>2</sup> with reeds and macrophytes to the margins.

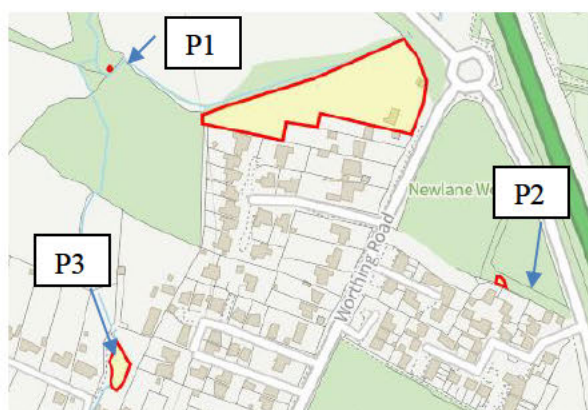


Figure 01 – Surveyed ponds within 500m of the site.

### **4.3 eDNA Survey**

- 4.3.1 Each pond was negative for great crested newt environmental DNA, suggesting the likely absence of GCN within the waterbody.

### **4.4 Survey Constraints / Considerations**

- 4.4.1 All phase 2 surveys were undertaken at the appropriate time of the year by trained, licenced surveyors. There were no constraints recorded relating to survey methodology, therefore the results are considered to a true representation of conditions on site.

## **5.0 MITIGATION**

- 5.1 Due to records of GCN within the area, as a precautionary measure the following Reasonable Avoidance Measures must be adhered to:
- No works will be undertaken at night when newts are most active.
  - Scrub requiring removal will be removed in stages under ecological supervision. An initial cut will reduce vegetation to a height of 15cm, this will then be left for 24 hours in suitable weather conditions to allow any newts present to naturally disperse.
  - Vegetation within the construction zone will be kept short prior to and during the construction phase to prevent colonisation by GCN.
  - All loose materials will be stored away from the boundaries of the site to prevent these areas being used by GCN. If necessary, loose materials will be stored off the ground on pallets or in dump bags.
  - Trenches or drainage works will be backfilled overnight or have ramps installed to prevent newts becoming trapped. These areas will be checked each morning before works beginning to ensure no newts are present.
  - Should GCN be found, all works will cease while a Suitable Qualified Ecologist is contacted for advice.

## 6.0 CONCLUSION AND RECOMMENDATIONS

- 6.1 Great crested newts were found to be absent locally, however due to historic records of GCN within the area, basic mitigation must be adhered to. The measures above shall ensure the protection of amphibians on site, in the highly unlikely situation that they are present.
- 6.2 Should any great crested newt be found on site during site clearance or construction, all works should cease while a suitably qualified ecologist is contacted for advice.

## 7.0 REFERENCES

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

*Froglife (2001) Great Crested Newt Conservation Handbook. Froglife.*

*Joint Nature Conservation Committee, (1998) Herpetofauna Workers' Manual. JNCC, Peterborough.*

*Natural England (2015) Template for Method Statement to support application for licence under Regulation 53(2)e of The Conservation of Habitats and Species Regulations 2010 (as amended) in respect of great crested newts (Triturus cristatus). Form WML-A14-2 (Version December 2015).*

## Appendix A – eDNA Results

**Folio No:** 350-2024  
**Purchase Order:** LLD2799  
**Contact:** Lizard Landscape  
Design & Ecology  
**Issue Date:** 24.04.2024

# GCN Report

Technical Report



SureScreen Scientifics

# GCN eDNA Analysis

## Summary

When great crested newts (GCN), *Triturus cristatus* , inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

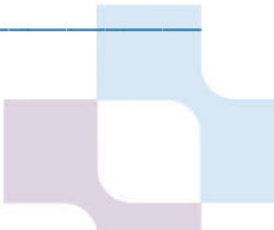
## Results

| Lab ID  | Site Name     | OS Reference | Degradation Check | Inhibition Check | Result   | Positive Replicates |
|---------|---------------|--------------|-------------------|------------------|----------|---------------------|
| GCN0932 | The Copse, P1 |              | Pass              | Pass             | Negative | 0/12                |
| GCN0940 | The Copse, P3 |              | Pass              | Pass             | Negative | 0/12                |
| GCN0942 | The Copse, P2 |              | Pass              | Pass             | Negative | 0/12                |

Matters affecting result: none

Reported by: Daisy Chambers

Approved by: Christopher Troth



## Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

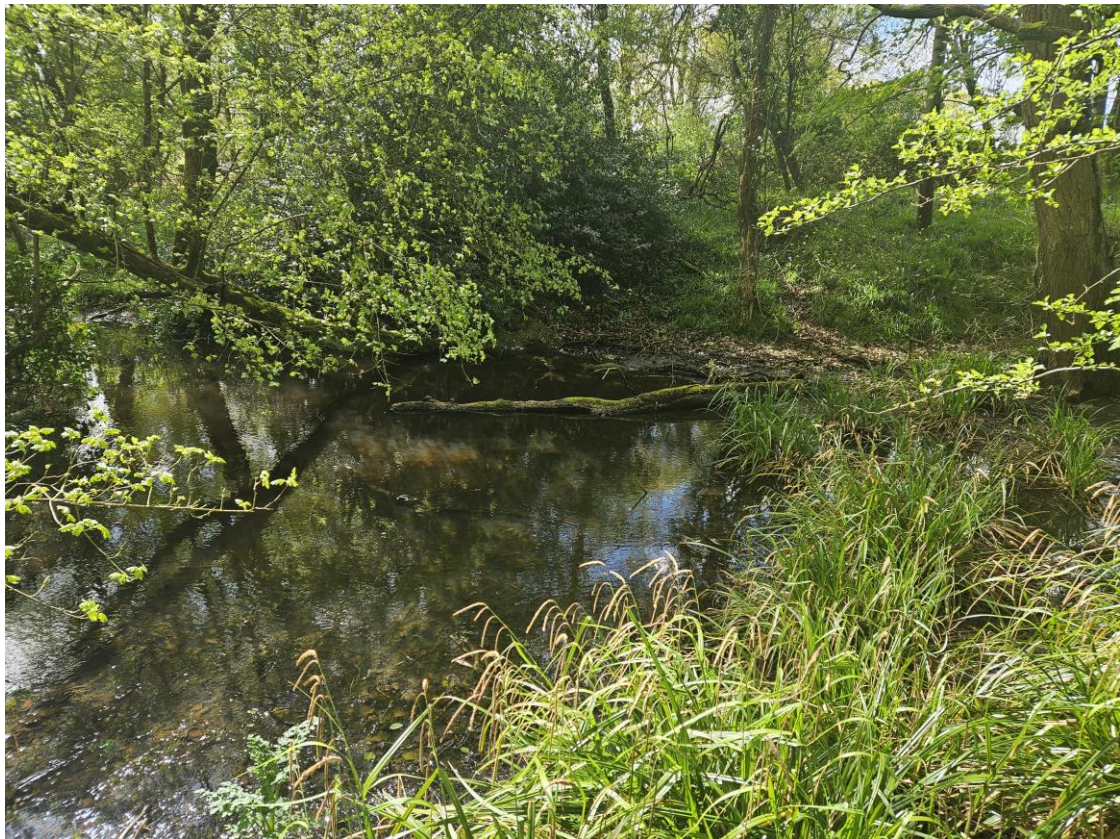
SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

## Interpretation of Results

- Sample Integrity Check:** When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.
- Degradation Check:** **Pass/Fail.** Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
- Inhibition Check:** **Pass/Fail.** The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
- Result:** **Presence of GCN eDNA (Positive/Negative/Inconclusive)**  
**Positive:** GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.  
**Positive Replicates:** Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.  
**Negative:** GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.  
**Inconclusive:** Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.



## **Appendix B – Photographs of surveyed ponds**



**Image 01 – View of Pond 1**



**Image 02 – View of Pond 2**



**Image 03 – View of Pond 3**