

**R10 – R14 LINK ROAD, SOUTH WOKINGHAM,
BERKSHIRE**

ECOLOGICAL IMPACT ASSESSMENT

Final Document

April 2024

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EclA • HRA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

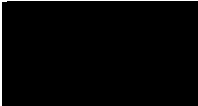
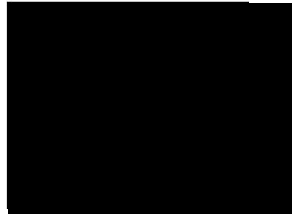
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ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2017 (CIEEM, 2017). The Ecological Impact Assessment and report has been prepared in line with the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018) and survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance (CIEEM, 2017).

Description:	Ecological Impact Assessment
Produced For:	Kingacre Estates Limited
Issue:	Final
Report Reference:	20.0032.0022.F0
Date of Issue:	12 th April 2024
Date of Survey Works:	26 th October 2023
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R10 – R14 LINK ROAD, SOUTH WOKINGHAM, BERKSHIRE

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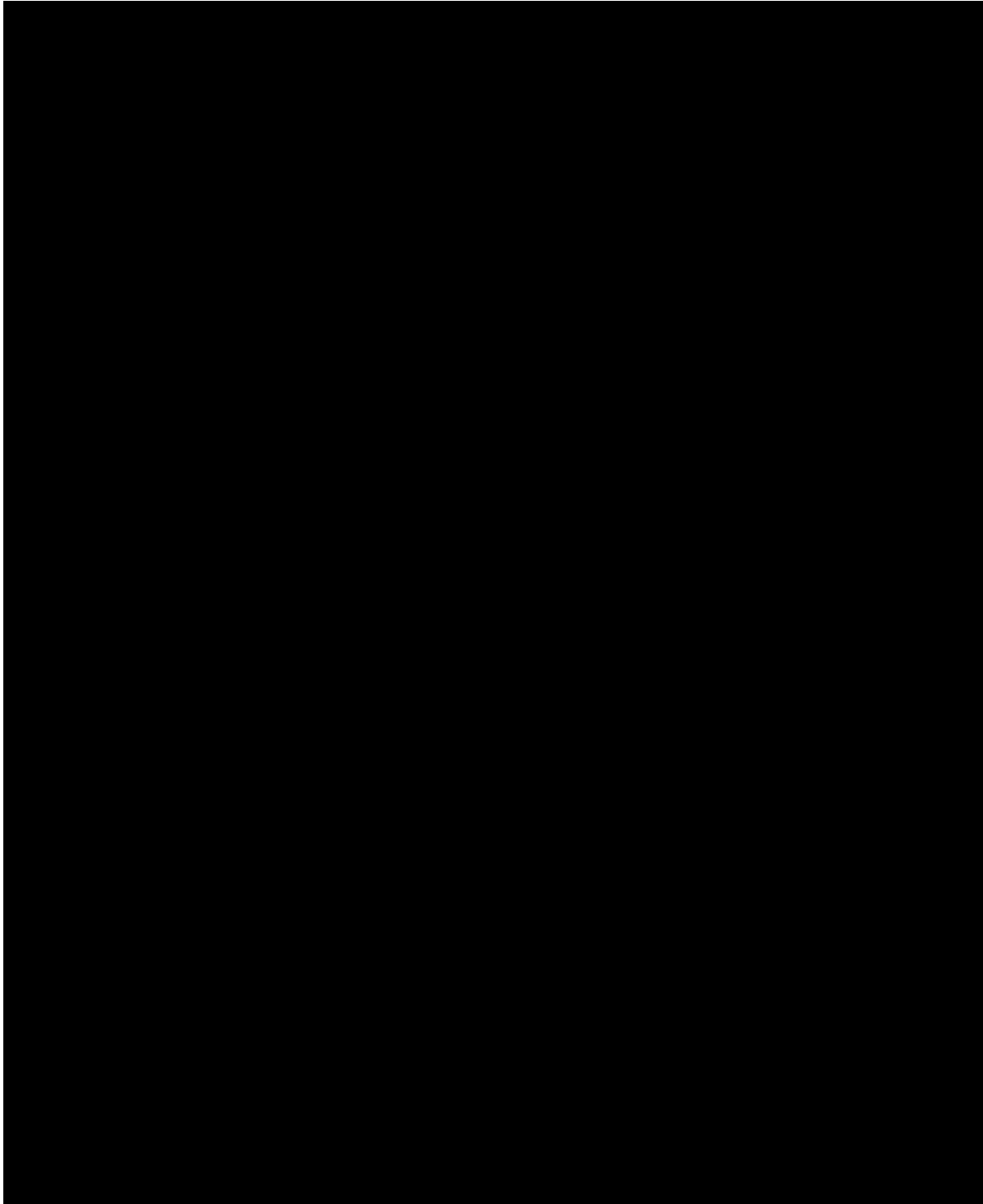
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EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by Kingacre Estates Limited to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of R10 – R14 Link Road, South Wokingham. The site is located between the two large towns of Wokingham and Bracknell, Berkshire and comprises two grassland fields and sections of the existing Waterloo Road. The proposals entail construction of a new link road of approximately 650 metres between the roundabout to the west and Waterloo Road to the east and associated drainage basins.



1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by Kingacre Estates Limited to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of R10 – R14, South Wokingham, Berkshire, RG40 3DA (hereafter referred to as the site).

The link road required to facilitate a wider proposed mixed development, hereafter referred to as the 'South Wokingham Project'. Phase 2a of the South Wokingham Project (Wokingham Borough Council Ref. 190914), will deliver up to 215 dwellings, public open space, play areas, associated infrastructure and landscaping. Phase 2b (Wokingham Borough Council Ref. 191068) will deliver up to 1,424 dwellings, a two-form entry primary school, local centre, public open space, play areas and associated infrastructure and landscaping, as well as a Suitable Alternative Natural Greenspace (SANG). A second SANG will be provided on land to the south of Anne's Manor (Wokingham Borough Council Ref. 190900, Bracknell Forest Council Ref. 19/00414/FUL). Vehicular access will be provided by the proposed South Wokingham Distributor Road, funded by Wokingham Borough Council.

To support the planning application for the above proposals, a suite of ecological survey work has been undertaken between 2015 and 2017 in relation to the nearby South Wokingham Project (ECOSA, 2020). Survey work has included initial and updating Phase 1 Habitat surveys, and the following species-specific surveys: notable plants and habitats, roosting, foraging and commuting bats, otter, [REDACTED] hazel dormouse, water vole, breeding birds, reptiles, great crested newt and aquatic invertebrates.

1.2 The Site

The site is located on the border of the Wokingham Borough and Bracknell Forest administrative areas, between in the two large towns of Wokingham and Bracknell, centred on National Grid Reference (NGR) SU 8331 6793 (**Map 1**).

The site comprises two fields of approximately 11 hectares and includes the junctions with the roundabout to the west and Waterloo Road to the east. The existing Waterloo Road lies around 130 metres south of the site.

To the east and west lie the large towns of Bracknell and Wokingham respectively. The railway line intersecting the two lies some 315 metres north of the site while the A329 (M) lies 920 metres north-east at its closest point. To the north and south, the landscape is more rural, comprising agricultural fields, scattered with small blocks of woodland and intersected by a network of hedgerows. The Emm Brook is located one kilometre

south-west of the site with a network of connected drainage ditches in the surrounding area.

1.3 Aims and Scope of Report

The information within this report is based on a field survey and desktop study carried out during 26th October 2023. The report describes the habitats and species (hereafter referred to as ecological features) within the site's Zone of Influence (Paragraph 3.2), and provides a detailed assessment of potential ecological effects of the proposed development of the site. It identifies the need for any measures to avoid, mitigate or compensate for significant adverse effects¹ on ecological features and outlines enhancements to the site's ecology to be implemented as part of the development. The objectives of the assessment are:

- To provide baseline information on ecological features within the site's Zone of Influence;
- To assess, characterise and quantify the effects on ecological features, including cumulative effects, and identify effects in the absence of any mitigation;
- To set out measures to avoid, mitigate and compensate for significant ecological effects in accordance with the 'mitigation hierarchy'²; and
- To outline opportunities for enhancement in order to achieve a net gain for biodiversity.

1.4 Site Proposals

The proposed works entail the construction of a 650 metre link road between the existing roundabout to the west and Waterloo Road to the east, and associated drainage basins. The link road and drainage basins will be constructed through two fields.

The Ecological Impact Assessment is based on the proposals plan produced by Abley Letchford Partnership, dated June 2023 (Drawing No. A389-LR-101) (**Appendix 1**).

¹ For the purposes of this assessment a 'significant' adverse effect is one which will have an adverse effect on the ecological feature at the site level or higher.

² In accordance with CIEEM Ecological Impact Assessment guidance (CIEEM, 2018) a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

2.0 PLANNING POLICY CONTEXT

2.1 Introduction

This section summarises the planning policy in relation to ecology and biodiversity within the Bracknell Forest Council administrative area. This information is then used to assess the compliance of the scheme in relation to relevant planning policy and where necessary used to inform the necessary mitigation, compensation and enhancement measures (see Section 5.0).

2.2 Planning Policy

2.2.1 National Policy

The National Planning Policy Framework (NPPF) sets out the government's requirements for the planning system in England. The original document was published in 2012 with the most recent revised NPPF published in September 2023. A number of sections of the NPPF are relevant when taking into account development proposals and the environment. As set out within Paragraph 11 of the NPPF "*Plans and decisions should apply a presumption in favour of sustainable development*". However, Paragraph 182 goes on to state that "*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.*".

The NPPF sets out that development proposals should not only minimise the impacts on biodiversity but also to provide enhancement. Paragraph 174 states that the planning system should contribute to and enhance the natural environment by "*...minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...*".

A number of principles are set out in Paragraph 180, including that where harm cannot be adequately avoided then it should be mitigated for, or as a last resort, compensated for. Where impacts occur on nationally designated sites, the benefits must clearly outweigh any adverse impact and incorporating biodiversity in and around developments should be encouraged. Specific reference is also made to the protection of irreplaceable habitats³, including ancient woodland⁴. Where loss to irreplaceable

³ The NPPF defines irreplaceable habitats as "*Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.*"

⁴ Natural England defines ancient woodland as "An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS)."

habitats occurs planning permission would normally be refused unless there are wholly exceptional reasons and an adequate compensation strategy is in place. Paragraph 180 also states *“development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”*. Paragraph 181 also sets out that potential SPAs, SACs and listed or proposed Ramsar sites or sites acting as compensation for SPAs, SACs and Ramsar sites, should receive the same protection as habitat sites.

In addition to the NPPF, Circular 06/05 provides guidance on the application of the law relating to planning and nature conservation as it applies in England. Paragraph 98 states *“the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat”*. Paragraph 99 states *“it is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the Proposed Project Development, is established before planning permission is granted”*.

2.2.2 Local Policy

Local planning policy within Bracknell Forest Borough is provided by the Core Strategy 2008 and saved policies within the Local Plan 2002. The following policies relate to ecology and biodiversity:

- **Core Strategy 2008 - Policy CS1: Sustainable Development Principles**
Development will be permitted which protects and enhances the quality of natural resources including water, air, land and biodiversity.
- **Core Strategy 2008 - Policy CS14: Thames Basin Heaths SPA**
The Council will carry out an assessment of the effects of a development proposal on the conservation objectives of the Thames Basin Heaths SPA where there is a risk of the proposal having a significant impact on the integrity of the site, either alone or in combination with other proposals. Proposals leading to a net increase in residential dwellings, within a straight-line distance of 5 kilometres from the SPA boundary, are likely to have a significant effect. The Council will not permit development which, either alone or in combination with other development, has an adverse effect upon the integrity of the SPA.

Development outside the 400-metre zone will be permitted where it can demonstrate that it can remove any adverse effect by contributing towards avoidance and mitigation measures in line with the SPA Technical Background Document.

The effective avoidance and/or mitigation of any identified adverse effects must be demonstrated and secured prior to approval of the Development.

▪ **Local Plan 2002 - Policy EN1: Protecting Tree and Hedgerow Cover**

Planning permission will not be granted for development which would result in the destruction of trees and hedgerows which are important to the retention, where applicable, of:

- A clear distinction between built up areas and the countryside; or
- The character and appearance of the landscape or townscape; or
- Green links between open spaces and wildlife heritage sites; or
- Internationally, nationally or locally rare or threatened species; or
- Habitats for local wildlife; or
- Areas of historic significance.

▪ **Local Plan 2002 - Policy EN2: Supplementing Tree and Hedgerow Cover**

In imposing landscaping conditions to secure additional tree and/or hedge planting, the borough council will require developers to include in their schemes the planting of indigenous trees appropriate to the setting and character of the area and a variety of other indigenous plants. According to circumstances, these may include grasses, heathland or wetland species.

▪ **Local Plan 2002 - Policy EN4: Local Nature Reserves, Wildlife Heritage Sites and Regionally Important Geological Sites**

Planning permission will not be granted on or near local nature reserves, wildlife heritage sites or regionally important geological/geomorphological sites unless the Proposed Project Development will not affect the wildlife and habitats for which the site was designated or the special character of the site. Development proposals on these sites must include conservation or enhancement schemes which, where appropriate, will set out the provision for, and management of, public access to and within them.

▪ **Thames Basin Heaths SPA Supplementary Planning Document**

The Thames Basin Heaths SPA Supplementary Planning Document (SPD) was adopted by Bracknell Forest Council on 18th April 2018. It provides an avoidance and mitigation strategy to avoid impacts of new development on the Thames Basin Heaths SPA. The strategy includes:

- The provision of SANG at a rate of 2ha/1000 new residents;

-
- Financial contributions of £190 per dwelling (on average) to Strategic Access Management and Monitoring (SAMM) measures on, and monitoring of, the SPA to reduce the effect of people who visit the SPA;
 - There is a presumption against new development within 400 metres of the SPA, that the effect of new net increases in residential development on the SPA is likely to be such that it is not possible to conclude no adverse effect on the integrity of the SPA. There is therefore a presumption against any net increase in residential development within this zone. A Habitats Regulations Assessment will be needed, and agreed with Natural England, to demonstrate that any development within this zone will not have an adverse effect on the SPA and/or the acceptability of any avoidance and mitigation measures provided;
 - Development between 400 metres and five kilometres away from the SPA will be permitted with suitable avoidance and mitigation strategies; and

Development between five and seven kilometres from the SPA will be assessed on a case by case basis, in agreement with Natural England.

3.0 METHODS

3.1 Introduction

This section details the methods used during the field survey and desktop study carried out as part of the Ecological Impact Assessment. Any significant limitations to the assessment are also considered.

3.2 Zone of Influence

To define the total extent of the study area for this assessment (Zone of Influence⁵), the proposed scheme was reviewed to establish the spatial scale at which ecological features could be affected. The appropriate survey radii for the various elements of the assessment (i.e. desktop study and field survey) have been defined in the relevant sections below. These distances are determined based on the professional judgement of the ecologist leading the appraisal, taking into account the characteristics of the site subject to appraisal, its surroundings and the nature and scope of the proposals.

3.3 Scoping

Protected species considered within this appraisal are those species/species groups considered likely to be encountered given the geographical location and context of the site. These are discussed within the results section (Section 4.0) of the current report. Where such a species is unlikely to be present on site a justification for likely absence is provided. Species considered likely absent from the site are not then considered in the assessment of ecological effects and mitigation measures section (Section 5.0) of this report.

3.4 Desk Study

3.4.1 Biological Records Centre

Thames Valley Environmental Records Centre (TVERC) was consulted on 27th September 2023 for the following data:

- Records of non-statutory designated sites (Local Wildlife Sites (LWSs)) within one kilometre of the site boundary. See **Appendix 2** for details; and
- Records of legally protected and notable species (flora and fauna) within one kilometre of the site boundary, including priority species and Species of Principal Importance (**Appendix 3**); and

⁵ The Zone of Influence (Zoi), as defined by CIEEM, is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities.

- Records of bats within two kilometres of the site boundary. Bat species are highly mobile and therefore the search radius is increased for this species group.

3.4.2 Multi-Agency Geographic Information for the Countryside

The Multi-Agency Geographic Information for the Countryside (MAGIC) (DEFRA, 2023) database was reviewed on 10th November 2023 to establish the location of statutory designated sites located within the vicinity of the site. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within one kilometre of the site. Where appropriate, the desk study search area has been extended to take account of any appropriate statutory designated sites which need consideration in terms of potential in-direct effects and which support particularly mobile species⁶. The Impact Risk Zones (IRZ) were also obtained from MAGIC, which are used to help guide and assess planning applications for likely effects on SSSIs.

Sites within two kilometres of the site boundary where European Protected Species Mitigation (EPSM) licences have been granted were reviewed. This information allows a greater understanding of the potential for European Protected Species to be present in the local area.

3.4.3 Other Sources of Information

Online mapping resources, at an appropriate scale, were used to identify the presence of habitats such as woodland blocks, ponds, watercourses and hedgerows, in the vicinity of the site. These habitats may offer resources and connectivity between the site and suitable habitat in the local area, which may be exploited by local species populations.

The presence of ponds or other waterbodies within a 500 metre radius of the site in particular are noted in relation to great crested newt. The 500 metre radius is a standardised search radius to assist in the assessment of the suitability of a site and its surrounding habitat to support this species, based on current Natural England guidance (English Nature, 2001).

Historical and current ecological reports produced in relation to the South Wokingham Project site have been used to inform this assessment where appropriate and have been referred to where necessary. The key report referred to is Chapter 14 Ecology of

⁶ Search areas for bat records are based upon information contained within Collins, J. (Ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Third Edition). The Bat Conservation Trust, London. Relevant distances for consideration of impacts on SPAs, SACs, Ramsar sites have been based on current published guidance available through web-based sources.

the South Wokingham Environmental Impact Assessment and associated appendices (ECOSA, 2020).

3.5 Field Survey

The field survey followed UK Habitat Classification (UKHab) methodology (UKHab Ltd, 2023) and included a search for evidence of, and an assessment of the site's suitability to support, protected and notable species as recommended by CIEEM (CIEEM, 2017). The field survey covered all accessible areas of the site, including boundary features. Habitats described in Section 4.0, have been mapped (**Map 2**), photographs and target notes provided, where relevant.

The UKHab Survey Application, developed using the digital survey platform Coreo was used to map habitats in the field, collect the field survey data and photograph the site.

3.5.1 UKHab Survey

An assessment was made of all habitats within the site, which were classified based on the standardised UKHab survey methodology (UKHab Ltd, 2023). The UKHab classification system comprises two major parts, a hierarchical Primary Habitat system and a list of Secondary Codes. The classification of Primary Habitats is hierarchical with five levels:

Level 1: Major ecosystem, currently covering terrestrial, freshwater and coastal ecosystems.

Level 2: Nine ecosystem types, based upon the Mapping and Assessment of Ecosystems and their Services (MAES) typology and corresponding with major habitat types within the European Nature Information System (EUNIS) habitat classification.

Level 3: 20 broad habitat types, corresponding directly with UK Biodiversity Action Plan Broad Habitats and closely to EUNIS.

Level 4: 80 habitats, including 47 UK Biodiversity Action Plan Priority Habitats, and further splits of Level 3 habitats.

Level 5: 104 habitats, including 69 Habitats Directive Annex 1 habitats and further splits of Level 4 habitats.

It should be noted that not all habitats will be classified to Level 5, for example modified grassland is classified at Level 3 and no Level 4 or Level 5 habitat is applicable. In addition, where Level 4 or 5 habitats are considered to be present on site there may be a requirement for further surveys by a specialist botanist to confirm or classify these habitat types.

During the field survey notes and photographs were taken in order to evidence the surveyor's classification of each habitat type.

Any invasive species⁷ encountered as an incidental result of the survey were recorded.

3.5.2 Protected and Notable Species Appraisal

A preliminary appraisal of the site's suitability to support legally protected and notable species was carried out. The following species/species groups were considered during the appraisal.

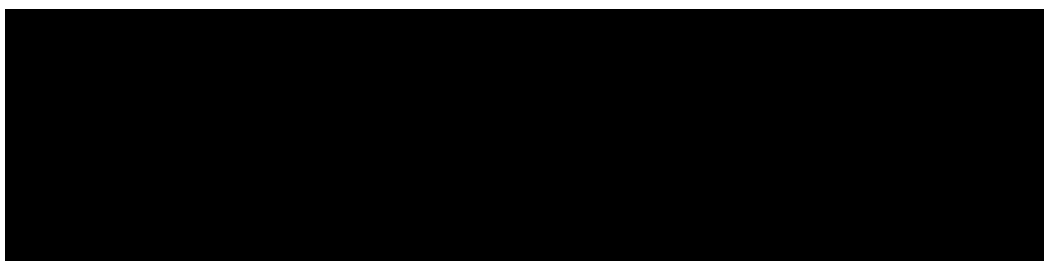
Bats

The survey conformed to current Bat Conservation Trust guidelines (Collins, 2016). An assessment was made of the suitability of trees on the site and immediately on the site boundary to support roosting bats based on the presence of Potential Roosting Features such as holes, cracks, splits, loose bark and ivy cladding for trees.

An assessment was made of the suitability of the site and the surrounding landscape to support foraging and/or commuting bat species. The assessment of the suitability of the site to support roosting, foraging and commuting bats is based on a four-point scale as detailed in **Appendix 4**.

Otter

The otter appraisal was based on an assessment of the suitability of the habitat present within the site to support otter by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), proximity of the site to freshwater and potential important feeding resources (such as fisheries), presence of habitat features which could provide opportunities for resting places and/or holts (such as tunnels, hollows at the base of trees and presence of dense, undisturbed habitat). During the survey attention was paid to the presence of evidence such as spraints, feeding remains, footprints and slides.



Hazel Dormouse

The appraisal for the suitability of the site to support hazel dormouse was based on an assessment of habitat features that may indicate that the species is present. This

⁷ Plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

includes the presence of key food sources such as hazel and bramble, or plants used as nesting material such as honeysuckle and clematis. Additionally, the species requires a continuum of food supply so that habitat structure, diversity and connectivity to adjacent areas of woodland/scrub are important features in determining the suitability of the site for hazel dormouse.

Water Vole

The water vole appraisal was based on an assessment of the suitability of the habitat present within the site to support water vole by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), bank structure and the bank side vegetation. Water voles generally require sloping banks in which to burrow and well-developed bank side vegetation to provide shelter and food. During the survey attention was paid to the presence of burrows, latrines, feeding remains, trails and footprints.

Birds

The appraisal of breeding birds on the site was based on the suitability of habitat present to support nesting bird communities, the presence of bird species that may potentially nest within the available habitat and evidence of nesting such as old or currently active nests.

The assessment of wintering birds was based on an assessment of the suitability of the habitat on site to support important wintering bird species and populations. Particular attention was paid to the suitability for the site to support wintering farmland bird species, waders and wildfowl.

Reptiles

The reptile appraisal was based on an assessment of the suitability of the habitat present within the site to support a population of reptiles. Reptiles particularly favour scrub and rough grassland interfaces and the presence of these is a good indication that reptiles may be present on-site. In addition, reptiles may utilise features such as bare ground for basking, tussocky grassland for shelter and compost heaps and rubble piles for breeding and/or hibernating.

Great Crested Newt

The appraisal of the site to support great crested newt included establishing the presence of suitable aquatic habitats such as ponds, lakes or other waterbodies within or adjacent to the site and the presence of suitable terrestrial habitat. Waterbodies that are densely shaded, highly eutrophic or that contain fish are likely to be less suitable for this species. The suitability of on-site ponds and terrestrial habitat is considered in relation to the presence of ponds within the wider area, as identified within the desktop study (Paragraph 3.4.3), and their suitability to be used as a network.

Invertebrates

An assessment was made of the suitability of the site to support diverse communities of invertebrates. The assessment was based on the presence of habitat features which may support important invertebrate communities. These features include, for example, an abundance of dead wood, the presence of diverse plant communities, varied woodland structure, sunny woodland edges with a diverse flora, waterbodies and water courses and areas of free draining soil exposures. During the field survey there was no attempt made to identify species present as this is a more specialist area of ecological assessment reserved for targeted surveys.

Other Relevant Species

An assessment was made of site suitability for other notable species such as more rarely encountered protected species, Species of Principal Importance for the Conservation of diversity in England notified under Section 41 of the NERC Act 2006 and as listed in the England Biodiversity List, and Local Biodiversity Action Plan (LBAP) species⁸, specific to the study region.

Invasive Species

During the field survey any incidental records of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded. However, it should be considered that the survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

3.6 Field Survey Details

The field survey was carried out by Joanne Richmond, Principal Ecologist of ECOSA on 26th October 2023. The weather conditions were dry with approximately 25 % cloud cover, an ambient temperature of 15°C and a light breeze.

During the survey, the surveyor was equipped with 10x40 binoculars, a high powered torch and a digital camera.

3.7 Field Survey Limitations

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The field survey has therefore not produced a complete list of plants and animals and in the absence of evidence of any particular species should not be taken as conclusive proof that the species is absent or that it will not occur in the future.

⁸ LBAPs identify local priorities for biodiversity conservation by translating national targets for species into effective action at the local level and identifying targets for species important to the local area.

Online mapping resources provide an indication of habitat features present in the wider area, but do not provide a detailed assessment of habitat types.

It is not always possible to provide definitive assessments of a species' presence/likely absence at a site and so in the absence of direct evidence, assessments and recommendations are based on the presence of suitable habitat within/adjacent to a site and the results of species records within the desk study data.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Introduction

This section details the results of the field survey and desktop study undertaken as part of the Ecological Impact Assessment for the site. It assesses the baseline ecological conditions of the site at the time the desktop study was completed and based on the ecological features recorded during the field survey carried out on 26th October 2023.

4.2 Statutory and Non-statutory Designated Sites

Details of designated sites are provided in the paragraphs below.

4.2.1 Statutory Designated Sites

There are no statutory designated sites of nature conservation interest situated within one kilometre of the site boundary.

4.2.2 Non-Statutory Designated Sites

There are two non-statutory designated sites of nature conservation interest situated within one kilometre of the site boundary. These are:

- Big Wood (LWS) – The LWS is located 350 metres east of the site and is designated for supporting ancient woodland and associated ground flora.
- Peacock Meadows (LWS) – The LWS is located 440 metres east of the site and is designated for recreated wildflower grassland.

Further information on sites designated for nature conservation are provided in Appendix 5.

4.3 Habitats

4.3.1 Desktop Study Results

Consultation with the MAGIC database revealed an area of ancient and semi natural woodland 200 metres east of the site, associated with Big Wood LWS. There are further blocks of ancient and semi natural woodland to the east and ancient replanted woodland to the north-east and east of the site. Woodpasture and parkland is located 600 metres south-east of the site.

Consultation with TVERC produced records of notable plant species including bluebell *Hyacinthoides non-scripta*, marsh stitchwort *Stellaria palustris*, ragged robin *Silene flos-cuculi* and wood sorrel *Oxalis acetosella*. Almost all plant records produced by TVERC are from Big Wood LWS or Peacock Meadows LWS.

4.3.2 Field Survey Results

Habitats within the site are shown on the Baseline Habitat Map (Error! Reference source not found.) and details of how each habitat has been classified based on the UKHab five-level hierarchical system, with relevant secondary codes, are provided in **Appendix 5**. Habitats are described in general terms using standard UKHab terminology. The main habitats recorded on site during the field survey were as follows:

Modified Grassland (g4)

The site mainly comprises two fields of modified grassland. The western field is at a long sward of around 30 centimetres with no evidence of recent management. The field is dominated by perennial rye grass *Lolium perenne* with frequent hogweed *Heracleum sphondylium* and broad-leaved dock *Rumex obtusifolius* with some common knapweed *Centaurea nigra* (**Figure 1**). The eastern field has a sward of around 30 centimetres, species recorded include soft brome *Bromus hordeaceus*, perennial rye, broad-leaved dock, hogweed, creeping buttercup and creeping thistle *Cirsium arvense* (**Figure 2**).



Figure 1: Western field



Figure 2: Eastern field

Two lines of trees are located between the eastern and western fields. The northern line of trees comprises a line of semi-mature pedunculate oak *Quercus robur* with willow *Salix* species and hawthorn *Crataegus monogyna* (**Figure 3**). The southern line of trees comprises semi-mature, widely spaced goat willow *Salix caprea* (**Figure 4**).



Figure 3: Northern line of trees



Figure 4: Southern line of trees

Hedgerow (Priority Habitat) (h2a)

A native hedgerow is located along the south-eastern boundary of the site and extending beyond the boundary of the site to the west. The hedgerow is comprised of blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, pedunculate oak, field maple *Acer campestre*, dog rose *Rosa canina* and ivy *Hedera helix* with cow parsley *Anthriscus sylvestris*, creeping bent *Agrostis stolonifera*, cock's foot *Dactylus glomerata*, bramble *Rubus fruticosus* aggregate, bracken *Pteridium aquilinum*, hogweed and cleavers *Galium aparine* recorded in the ground flora. The hedgerow is approximately three metres high and one metre wide.

Summary

The on site and boundary habitats recorded include modified grassland, native hedgerow and lines of trees. The habitat of relatively greater ecological value is the hedgerow for its intrinsic ecological value and connections to the wider landscape, although all habitats present on site are common and widespread in the surrounding area.

4.4 Notable and Legally Protected Species

4.4.1 Bats

Desktop Study Results

A review of the MAGIC database revealed four granted EPSM licenses in respect of bats within two kilometres of the site boundary. The closest is located 1.3 kilometres west of the site and was granted in 2018 for the destruction of a resting place of brown long-eared bat *Plecotus auritus* and common pipistrelle *Pipistrellus pipistrellus* bats. A license located 1.75 kilometres north-east of the site was granted in 2018 for the destruction of a resting place of brown long-eared bat, common pipistrelle and soprano pipistrelle *Pipistrellus pygmaeus*. These are the two most recently granted licenses within the desktop study area.

Consultation with TVERC produced records of a number of bat species within the desk study area including common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, brown long-eared bat, Natterer's bat *Myotis nattereri*, whiskered/Brandt's bat *Myotis mystacinus/brandtii*, Bechstein's bat *Myotis bechsteinii* and Daubenton's bat *Myotis aubentonii*. These records included roosts of common pipistrelle, soprano pipistrelle and brown long-eared within the desk study area. Bat transect surveys conducted by ECOSA (ECOSA, 2020) within the nearby South Wokingham Project site (approximately 500 metres west) recorded foraging and commuting activity largely attributable to common pipistrelle and soprano pipistrelle and occasional long-eared bat species, *Myotis* bat species⁹, serotine and noctule.

Tree Assessment

The semi-mature oak trees that form part of the treeline may have suitability for roosting bats, however, these were not inspected in detail during the field survey.

Foraging and Commuting Habitat

The site supports suitable bat foraging and commuting habitat in the form of a hedgerow and treelines that connect the site to habitat in the wider area including blocks of woodland to the north and east. Bats may use these linear features to commute and forage. Overall, the site is assessed as having moderate suitability for foraging and commuting bats.

4.4.2 Otter

Desktop Study Results

A review of the MAGIC database identified the presence of a number of habitats within one kilometre of the site that may be used by otter *Lutra lutra*. These include a well-connected network of drainage ditches within the vicinity of the site, the closest of which is located approximately 250 metres south. These drainage ditches feed into the Emm Brook one kilometre south-west of the site. Standing waterbodies are present 160 metres north-east, 470 metres south-west and 700 metres south-west, as well as several standing waterbodies north across the railway line. It is possible that otter may use these habitats for commuting and feeding.

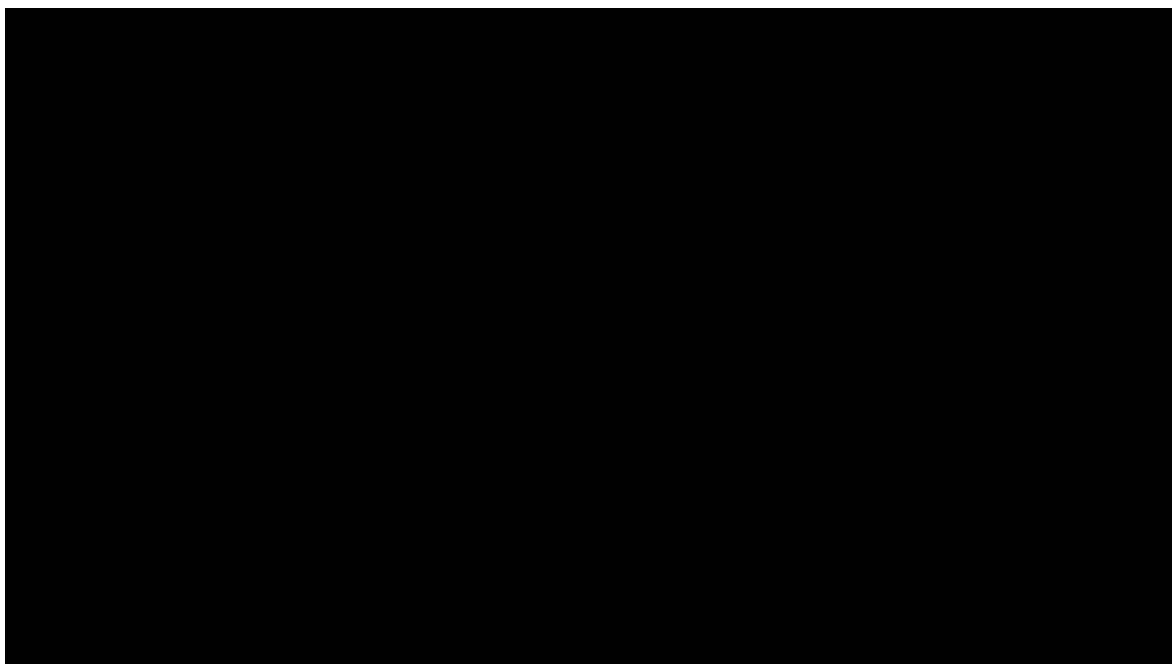
Consultation with TVERC produced no records of otter within the desktop study area and otter surveys of Emm Brook carried out by ECOSA in relation to the South Wokingham Project did not record any field signs of otter and therefore otter was not

⁹ There are seven species of *Myotis* bats in Britain. *Myotis* bats are very difficult to identify specifically, this can generally only be done by examination of physical features and Phylogenetic Analysis Identification of bat droppings. Many of these bats are common and will utilise buildings for roosting often occupying small and inaccessible voids. For the purpose of this report all species shall be referred to as *Myotis* bats unless a specific identification has been possible.

considered resident at the site. Although it was concluded that the species may use Emm Brook as a foraging and commuting resource.

Field Survey Results

The site does not support habitat that is suitable for otter as there are no rivers, streams, wet ditches, wetlands or lakes present within the red line boundary. While otter may be present within the wider area, if present, individuals are likely to utilise Emm Brook and connecting drainage channels. The site does not provide connectivity between these suitable habitats and is unlikely to be used for resting places or holt creation. As such, otter is considered likely absent from the site and is not discussed further in this report.



4.4.4 Hazel Dormouse

Desktop Study Results

A review of the MAGIC database did not reveal the presence of any granted EPSM licences in respect of hazel dormouse *Muscardinus avellanarius* within two kilometres of the site boundary.

Consultation with TVERC produced one record of hazel dormouse within the desktop study area. This record is from 2017 and is a field record of three adult dormice in Bigwood LWS 350 metres east of the site.

Hazel dormouse surveys undertaken in 2015 and 2017 in relation to the South Wokingham site did not record any evidence of the species (ECOSA, 2020). Hazel dormouse surveys were also undertaken to support planning applications for the following schemes in the local area:

- Buckhurst Farm (Montague Park) – Surveys undertaken in 2008;

- Land at Matthewsgreen Farm – Surveys undertaken in 2013;
- Land North of Nine Mile Ride – Surveys undertaken in 2017;
- Keephatch Gardens – Surveys undertaken in 2013;
- Land at Amen Corner – Surveys undertaken in 2011 and 2013; and
- Land south of Amen Corner – Surveys undertaken in 2010.

No evidence of hazel dormouse was recorded during any of these surveys.

Field Survey Results

The native hedgerow on the site may contain some key food species for hazel dormouse including bramble and hazel. The hedgerow is connected to further habitat including woodland to the east, providing suitable foraging and nesting habitat. Given the low number of hazel dormouse recorded in recent years, the small amount of suitable habitat on the site and the extent of suitable habitat within the woodland to the east, it is considered unlikely that hazel dormouse is present on site.

4.4.5 Water Vole

Desktop Study Results

A review of the MAGIC database identified the presence of a number of aquatic habitats within the desk study area that may be used by water vole *Arvicola amphibius* including Emm Brook one kilometre south-west and connecting drainage channels. Standing waterbodies located 160 metres north-east, 470 metres south-west and 700 metres south-west as well as several standing waterbodies north across the railway line also provide suitable habitat for water vole foraging and burrow construction.

Consultation with TVERC produced no records of water vole within the desktop study area and water vole surveys conducted by ECOSA (ECOSA, 2020) in relation to the South Wokingham Project did not record any definitive evidence of species. As such, water vole was considered absent from this area.

Field Survey Results

The site is unsuitable for water vole as it does not support any rivers, streams, wet ditches, wetlands or lakes. The site does not provide connectivity between any suitable habitats in the wider area and lacks suitable terrestrial habitat that may be used for burrows. Overall, water vole is assessed as being likely absent from the site and is not discussed further in this report.

4.4.6 Birds

Desktop Study Results

The TVERC desk study returned records of numerous bird species including the notable species peregrine *Falco peregrinus*, red kite *Milvus milvus*, fieldfare *Turdus pilaris*, green sandpiper *Tringa ochropus*, redwing *Turdus iliacus*, skylark *Alauda arvensis* and house sparrow *Passer domesticus*.

Breeding bird surveys carried out by ECOSA in relation to the South Wokingham site in 2015 and 2017 (ECOSA, 2020) recorded seven red listed¹⁰ and four amber listed¹¹ species breeding in the area. Skylark and linnet were recorded breeding on site in the western field and song thrush were recorded breeding in the on site treeline between the eastern and western fields. Lapwing *Vanellus vanellus* were recorded feeding 500 metres to the west of the site and breeding 830 metres west of the site.

Field Survey Results

The following species of bird were recorded on site or flying over during the field survey: wood pigeon *Columba palumbus*, jackdaw *Corvus monedula*, magpie *Pica pica*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes* and long-tailed tit *Aegithalos caudatus*.

The hedgerow and treelines on site provide nesting habitat for a range of bird species including red kite which may nest in the treelines. The open grassland habitat on site may provide nesting opportunities for ground nesting birds such as lapwing and skylark. Fieldfare and redwing may be present on the site during the winter.

4.4.7 Reptiles

Desktop Study Results

Consultation with TVERC produced eight records of common lizard *Zootoca vivipara*, the most recent record is from 2013. There are also 31 records of slow-worm *Anguis fragilis*, the most recent record is from 2017. The majority of records are from Buckhurst

¹⁰ The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Red List criteria include species which are: globally threatened; have been subject to historical population decline in UK during 1800–1995; are in severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period, or; subject to severe (at least 50%) contraction of UK breeding range over last 25 years, or longer-term period.

¹¹ The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Amber list criteria include species which are: in unfavourable conservation status in Europe; subject to historical population decline during 1800–1995, but recovering; subject to moderate (25-49%) decline in UK breeding population or contraction of UK breeding range over last 25 years, or the longer-term period; subject to moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period; rare breeders (1–300 breeding pairs in UK); rare non-breeders (less than 900 individuals), or; internationally important species with at least 20% of European breeding or non-breeding population in UK.

Farm located north of the site across the railway line. Five slow worm records are from Big Wood LWS 350 metres to the east of the site.

Reptile surveys undertaken in 2015 and 2017 by ECOSA (ECOSA, 2020) as part of the South Wokingham Project recorded a site-wide peak count of four adult slow-worm and three common lizard (ECOSA, 2020). As part of these surveys the western field, of this application site was surveyed for reptiles. No reptiles were recorded in the western field. The closest reptile record to the site was a slow-worm approximately 600 metres to the west. No other species were encountered during the surveys, although this does not confirm the absence of other species within the local area.

Field Survey Results

The site provides suitable habitats for common reptiles such as slow worm and common lizard in the form of modified grassland and hedgerow bases. These habitats are connected to the woodland to the east of the site. There is further suitable habitat in the surrounding area including to the north, south and south-west, however, the railway line to the north and Waterloo Road to the south and south-west create barriers to reptile dispersal.

4.4.8 Great Crested Newt

Desktop Study Results

A review of the MAGIC database did not reveal the presence of any granted EPSM licences in respect of great crested newt *Triturus cristatus* within two kilometres of the site boundary. However, a single record of a licence return was identified for a site located 1.15 kilometres west where the species was found to be present in 2017. Consultation with TVERC produced one record of great crested newt from 2005, located directly south of the site to the south of Waterloo Road.

Online OS mapping and aerial imagery shows four standing waterbodies and a network of drainage ditches located within 500 metres of the site. The waterbodies are located 160 metres north-east, 470 metres south-west, 410 metres north-west and 500 metres north-west of the site. Three of these waterbodies were identified as part of the South Wokingham assessment however none of these were surveyed due access not being obtained (ECOSA, 2020). The two waterbodies to the north-west are the other side of the railway line which would provide a barrier to great crested newt dispersal if the species is present to the north.

Field Survey Results

The site itself does not contain any waterbodies or wet ditches, as such it does not support a breeding population of great crested newt. The hedgerow bases provide suitable terrestrial habitat for the species which may breed within nearby waterbodies.

These is also further suitable habitat in the wider area comprising woodland blocks to the east and grassland fields to the south and south-west, however, Waterloo Road forms a barrier to the grassland.

4.4.9 Invertebrates

Desktop Study Results

Consultation with TVERC produced records of a number of notable invertebrates within one kilometre of the site boundary including stag beetle *Lucanus cervus*, small heath *Coenonympha pamphilus*, blood vein *Timandra comae*, cinnabar *Tyria jacobaeae* and shaded broad-bar *Scotopteryx chenopodiata* and common darter *Sympetrum striolatum*. Several records including some records of the small heath and cinnabar are from Big Wood LWS and Peacock Meadows LWS.

A terrestrial invertebrate survey was undertaken by ECOSA in 2015 of the nearby South Wokingham Project site (ECOSA, 2020). The survey recorded six nationally scarce species, two Red Data Book (RDB) three Rare species and one RDB 1 Endangered species.

Field Survey Results

The majority of habitats present on site are likely to support a range of common and widespread invertebrate species and assemblages. The modified grassland on site does not have the species diversity that would be necessary to support the more scarce or notable species included in the desk study data or recorded during the 2015 terrestrial invertebrate surveys. There are no habitats present that are suitable for aquatic invertebrates.

4.4.10 Other Relevant Species

Desktop Study Results

Consultation with TVERC returned 13 records of European hedgehog *Erinaceus europaeus* between 2016 and 2022 and one record of common toad *Bufo bufo* from 2004.

Field Survey Results

Habitats on site are suitable for supporting both common toad and European hedgehog including the grassland and hedgerow bases. Both species may utilise these habitats for commuting and foraging and may access further suitable habitat in the wider area by passing through the site.

4.5 Summary of Key Ecological Features

The following features are those with greatest ecological value that lie within the site's Zone of Influence:

- There are two non-statutory designated sites in the vicinity of the site, these are Big Wood LWS and Peacock Meadows LWS.
- The most notable habitat present on site is the hedgerow.
- The site is assessed as having moderate suitability for foraging and commuting bats.
- The habitats on site are suitable for supporting [REDACTED] hazel dormouse, nesting birds, reptiles, great crested newt, common toad and European hedgehog.

5.0 ASSESSMENT OF ECOLOGICAL EFFECTS AND MITIGATION/COMPENSATION/ENHANCEMENT MEASURES

5.1 Introduction

This section assesses the ecological effects of the proposed development scheme on the identified ecological features as identified in Section 4.0. Methods for addressing potential impacts and effects on ecological features have been approached in accordance with the mitigation hierarchy¹² with avoidance of impacts prioritised where possible. Where significant adverse effects cannot be avoided other forms of mitigation are prioritised over compensation. Enhancement measures have been detailed, where relevant, in order to not only minimise the impacts on biodiversity but also to provide enhancement in accordance with Paragraph 174 of the NPPF (Paragraph 2.2.1). It is anticipated that mitigation, compensation and enhancement measures will be secured through the planning process.

5.2 Scheme Design

The proposed development entails the construction of a new link road of approximately 650 metres with associated footways/cycleways joining the newly constructed roundabout directly to the east of the site to the existing Waterloo Road to the south. The new link road will eventually provide access to a future residential phase of the South Wokingham development. The proposals include the creation of swales and two drainage basins – one basin in the northern part of the site and one in the north-west.

The potential ecological impacts and effects of these proposals, in the absence of mitigation, are described for each ecological feature below. For each ecological feature, measures to mitigate and/or compensate for significant effects are described.

5.3 Designated Sites

5.3.1 Potential Impacts and Effects

Big Wood LWS and Peacock Meadows LWS are unlikely to be impacted by the proposals due to the distance between the designated site and the development site, the limited scale of the works and the nature of the works. There are unlikely to be any impacts on the LWSs' solely as a result of the operation of the proposed new junction.

5.3.2 Mitigation and Compensation Measures

No mitigation or compensation methods are proposed in relation to designated sites.

¹² In accordance with CIEEM Ecological Impact Assessment guidance (CIEEM, 2018) a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

5.3.3 Enhancement

No enhancement measures are proposed in relation to designated sites.

5.4 Habitats

5.4.1 Potential Impacts and Effects

There will be a loss of approximately 1.5 hectares of grassland to facilitate the construction of the new link road. A section of the hedgerow along the southern boundary of the grassland will be lost to create a new junction between the link road and Waterloo Road. It may be necessary to remove trees from the treeline to facilitate road construction. Trees not removed may become damaged or degraded due to the close proximity of construction related activities, in particular damage to the trees and roots from accidental collision with heavy machinery and an increase in dust and pollution.

5.4.2 Mitigation and Compensation Measures

To ensure that retained habitats do not become degraded during the construction phase of the development a Construction Environmental Management Plan (CEMP) will be produced and implemented for the duration of the construction phase. Measures to prevent an increase in dust and reduce the likelihood of pollution will be set out within the CEMP such as the erection of Heras-style fencing to protect the treelines from accidental incursion, dampening down of the site to control dust and the use of a bunded bowser and spill kits when refuelling machinery.

Any trees and hedgerows not to be removed during construction will follow protective measures in line with BS 5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*. This document outlines the use of tree protection barriers to be used for the duration of the construction phase. These barriers are proposed to shield the boundary vegetation from damage during construction.

The newly created drainage basins will be sown with an appropriate wet tolerant grassland seed mixture such as the Emorsgate Meadow Grass Mixture for Wet Soils or similar.

It is not possible to fully compensate for the loss of habitats within the site boundary. Compensatory sowing of grassland habitat and planting of native hedgerows and trees will be required to replace the loss of any habitats during the construction of the link road and new junction with Waterloo Road. It is anticipated that this will be delivered within the proposed SANGs as part of the wider South Wokingham development. Further details can be found within the Environmental Statement (ECOSA, 2020).

5.4.3 Enhancement

No enhancement measures are proposed in relation to habitats.

5.5 Bats

5.5.1 Potential Impacts and Effects

The removal of the treelines or of the hedgerow may result in severance of linear habitat features that may be used by foraging and commuting bats. Significant light spill from the proposed new street lighting could deter light adverse species of bats from foraging and commuting along the treelines and hedgerow, which could result in fragmentation effects.

During the construction phase, foraging and commuting bats may be disturbed by construction related activities through noise and lighting.

In England, bats and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, all bat species are protected under the Conservation of Habitats and Species Regulations 2017. Refer to **Appendix 3** for details.

5.5.2 Mitigation and Compensation Measures

Compensatory tree and hedgerow planting will be necessary to ensure no long-term loss of suitable bat foraging and commuting habitat (see Paragraph 5.4.2).

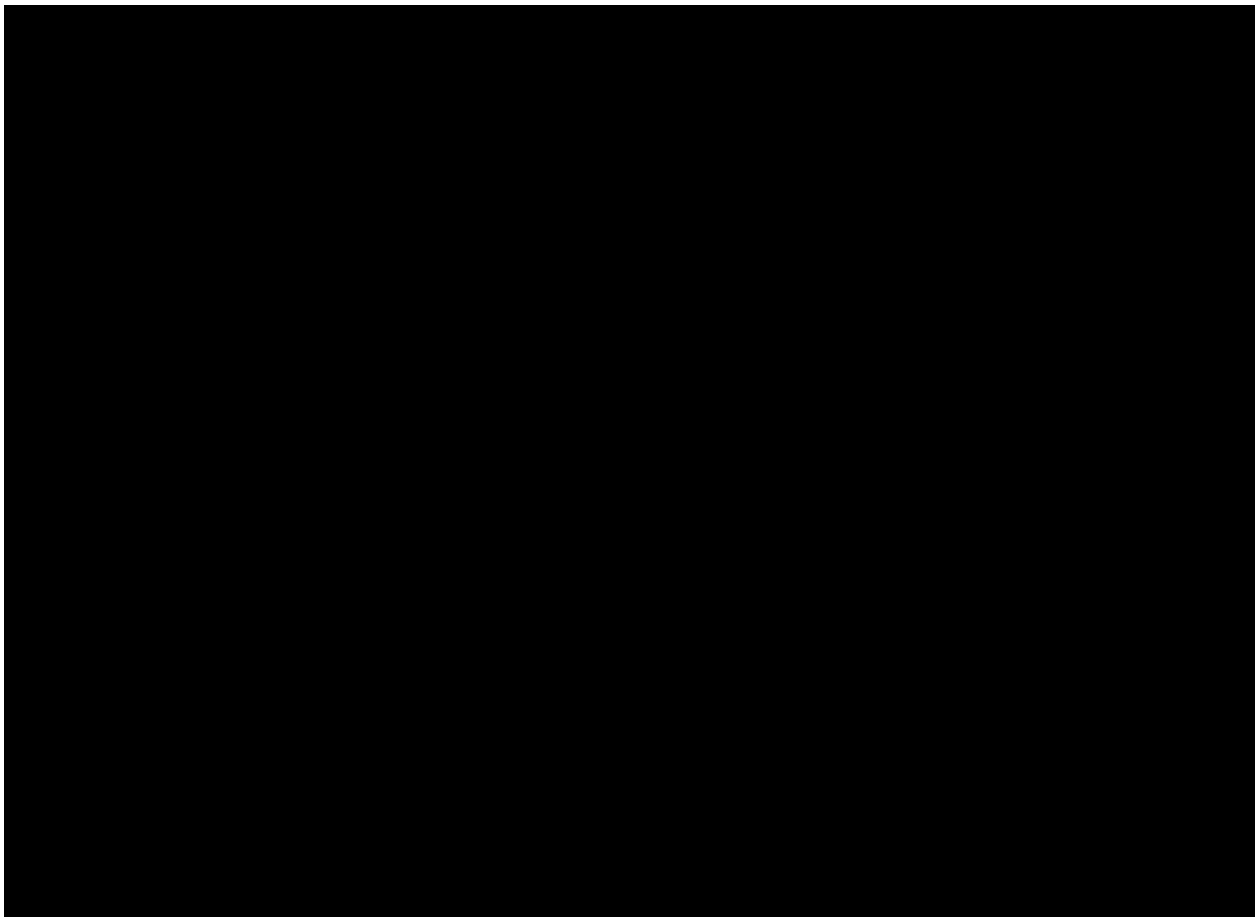
Construction will take place during daylight hours to avoid disturbance to foraging and commuting bats through an increase in lighting and noise.

It will be necessary to design the street lighting scheme in consultation with an ecologist to ensure that significant light spill onto sensitive habitats is avoided, in particular retained treelines and hedgerows. The lighting to be installed on the new development will comprise hooded luminaires directed away from vegetation which should not be directly illuminated. Ideally the bulbs will be LED and at the warmer end of the spectrum (e.g. avoiding blue or white light). LED lights emit much lower levels of UV and therefore have a lower impact on wildlife¹³.

5.5.3 Enhancement

The area surrounding the site will be enhanced through the installation of two bat boxes on suitable trees. The bat boxes will be the Vivara Pro Woodstone bat box or similar and will provide additional roosting opportunities for species of bat in the local area.

¹³ Wildlife and Artificial Lighting Seminar, 21st – 22nd March 2014, Arup London, Bat Conservation Trust



5.7 Hazel Dormouse

5.7.1 *Potential Impacts and Effects*

Hazel dormouse are considered likely absent from the site, however, in the unlikely event that hazel dormouse are present the removal of part of the hedgerow and treelines has the potential to result in killing and injury of hazel dormouse and the loss of habitat suitable for this species.

In England, hazel dormouse and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, this species is protected under the Conservation of Habitats and Species Regulations 2017. Refer to **Appendix 3** for details.

5.7.2 *Mitigation and Compensation Measures*

As a precaution, the clearance of suitable hazel dormouse habitat will be undertaken under the supervision of an ecologist, using hand tools. The attending ecologist will undertake a detailed search of each section immediately prior to clearance and if any evidence of hazel dormouse is encountered works will cease and advice from Natural England will be sought.

5.7.3 Enhancement

As hazel dormouse are considered unlikely to be present on site, no enhancement measures are proposed.

5.8 Birds

5.8.1 Potential Impacts and Effects

The clearance of approximately 1.5 hectares of grassland has the potential to result in harm to ground nesting birds, their nests, eggs or young and removal of part of the hedgerow and treelines has the potential to result in harm to breeding birds, their nests, eggs or young if undertaken during the nesting season (March to August inclusive). Vegetation clearance will also result in a loss of suitable bird nesting habitat.

All birds, their nests, eggs and young are legally protected, with certain exceptions, under the Wildlife and Countryside Act 1981 (as amended). Refer to **Appendix 3** for details.

5.8.2 Mitigation and Compensation Measures

Vegetation clearance works will be undertaken outside of the main nesting bird season where possible. If not possible, an ecologist will attend site immediately prior to clearance to undertake a nesting bird check. If active nests are encountered, these will be left with a suitable buffer (determined by the attending ecologist) until nesting ends.

Compensatory planting (see Paragraph 5.4.2) will also compensate for the loss of nesting bird habitat.

5.8.3 Enhancement

Installation of two Vivara Pro Seville bird boxes will provide additional nesting opportunities and will enhance retained habitats for nesting birds.

5.9 Reptiles

5.9.1 Potential Impacts and Effects

The construction of the new link road will result in the removal of approximately 1.5 hectares of grassland suitable for reptiles. Although it is considered unlikely that there are reptiles on the site, if the site has been colonised by reptiles the clearance of grassland has the potential to result in the killing and injury of individual reptiles. The clearance of grassland will also result in a loss of suitable reptile habitat.

Widespread reptile species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, grass snake *Natrix helvetica* and adder *Vipera berus*) are protected under the Wildlife and Countryside Act 1981 against harm. Refer to **Appendix 3** for details.

5.9.2 Mitigation and Compensation Measures

A destructive search will be undertaken to prevent harm to individual reptiles if present within the construction area. This will involve the scraping of the top layer of soil using an excavator with a toothed bucket, under the supervision of a suitably qualified ecologist. If any reptiles are encountered these will be removed by hand into suitable retained habitat. The destructive search should be undertaken when both reptiles and great crested newt are active, between March and October, and in suitable weather conditions.

Sowing of grassland off-site will compensate for the loss of suitable reptile habitat (see Paragraph 5.4.2). Newly created habitat should be well connected to further suitable habitat in the surrounding area to increase the chance of the habitat being colonised by reptiles.

5.9.3 Enhancement

No enhancement measures are proposed in relation to reptiles.

5.10 Great Crested Newt

5.10.1 Potential Impacts and Effects

The removal of grassland and hedgerow bases will result in a loss of suitable terrestrial habitat for great crested newt, and in the event that great crested newt are present on the site has the potential to result in killing or injury of great crested newt.

In England, great crested newt and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, this species is protected under the Conservation of Habitats and Species Regulations 2017. Refer to **Appendix 3** for details.

Natural England have developed a tool known as the 'Rapid Risk Assessment' to help determine whether works are likely to result in an offence under the Conservation of Habitats and Species Regulations 2017. The Rapid Risk Assessment is introduced with the following statement from Natural England (Natural England, 2021):

"In recent years there has been a trend towards increasingly precautionary applications, resulting from a risk-averse approach to mitigation. Whilst considering potential risks to great crested newts is laudable, many recent mitigation schemes were designed for developments that actually had very little or no effect on the newt population. In part this is because it can be difficult to assess whether newts will be affected by certain activities, especially when they take place at some distance from breeding ponds. Newts tend to be present at increasingly low density the further one looks from ponds, and the task of detecting and capturing them becomes more

problematic. Further from ponds, there is a corresponding reduction in the scale of impact on populations. Given that great crested newts can disperse over 1km from breeding ponds, the potential for offences may seem vast, yet the probability of an offence outside the core breeding and resting area is often rather small, and even if an offence takes place, the effect on the population may be negligible.

Natural England is concerned about the trend for increasingly risk-averse mitigation for several reasons. Primarily, there is no legal need, and little benefit to great crested newt conservation, in undertaking mitigation where there are no offences through development. Even where there technically is an offence, such as the destruction of a small, distant area of resting place habitat, it is arguable that impacts beyond the core area often have little or no tangible impact on the viability of populations. Mitigation in such circumstances is of questionable value in conservation terms. There are, however, substantial costs: developers delay projects and spend large sums on mitigation. Sometimes the mitigation project itself has environmental costs, especially when it entails substantial lengths of newt fencing. In some cases long newt fences are employed with no justification. Natural England wishes to see newt fencing used more appropriately, i.e. only where there is a reasonable risk of capturing, containing and/or excluding newts.

Natural England recognises that the two key factors leading consultants to adopt this risk-averse approach are: (a) uncertainty over the presence of newts and whether there will be an offence in areas distant from ponds; (b) undertaking mitigation under licence "just in case", so that there is no perceived risk of litigation for their client. Natural England wishes to see mitigation planning shift away from such a highly risk-averse starting point. The domestic legislation protecting great crested newts arises largely from the Habitats Directive, which has a central aim to restore scheduled species to a favourable conservation status. A more proportionate approach to mitigation, addressing tangible impacts on populations whilst giving lower priority to negligible effects, is consistent with the aims of the Directive."

The rapid risk assessment takes into account the nature of potential impacts, the extent of suitable habitat to be affected and the distance of this habitat from suitable breeding ponds.

The proposals will result in the loss of approximately 1.5 hectares of suitable habitat. The habitat lies between 100-250 metres from a potential breeding pond (the nearest suitable waterbody is 160 metres to the north-east of the site). The results of the Rapid Risk Assessment are therefore as follows:

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.4
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
		Maximum: 0.4
Rapid risk assessment result:	AMBER: OFFENCE LIKELY	

The rapid risk assessment caveats that this tool is for guidance only and lists the following factors as reasons why the risk of offence might be increased:

- Large population size;
- High pond density;
- Good terrestrial habitat;
- Low pre-existing habitat fragmentation;
- Large development footprint; and
- Long construction period.

Although the presence of great crested newt cannot be ruled out, the risk of causing significant harm to great crested newt is considered to be low. There is not a high density of ponds in the vicinity of the affected habitat and although there is further suitable habitat to the east, south and west the presence of roads, and railways, fragments this habitat. As the ponds have not been surveyed a precautionary approach is necessary as there is potential for harm to great crested newt.

5.10.2 Mitigation and Compensation Measures

In order to prevent accidental killing and injury during construction, in the unlikely event that great crested newt are present within suitable terrestrial habitat, a precautionary destructive search will be undertaken to prevent harm to individuals. This will involve clearance of vegetation to ground level, followed by the scraping of the top layer of soil using an excavator with a toothed bucket, under the supervision of a suitably qualified ecologist. If any great crested newt are encountered works will cease and further advice sought from Natural England.

The destructive search should be undertaken when both reptiles and great crested newt are active, between March and October, and in suitable weather conditions.

5.10.3 Enhancement

No enhancement measures are proposed in relation to great crested newt.

5.11 Invertebrates

5.11.1 Potential Impacts and Effects

In the absence of mitigation the proposals will result in the loss of approximately 1.5 hectares of grassland habitat suitable to support a range of common and widespread invertebrate species and assemblages. However, given the extent of habitat loss and the low species diversity of the grassland, the impact on invertebrates is considered to be negligible.

5.11.2 Mitigation and Compensation Measures

No mitigation or compensation measures are proposed in relation to invertebrates.

5.11.3 Enhancement

No enhancement measures are proposed in relation to invertebrates.

5.12 Other Relevant Species

5.12.1 Potential Impacts and Effects

Clearance of the grassland and hedgerow bases could result in harm to common toad and/or European hedgehog, which may be present within the habitat.

5.12.2 Mitigation and Compensation Measures

A watching brief will be maintained during clearance works. Any common toad or European hedgehog encountered will be moved carefully by hand into suitable areas of retained habitat.

5.12.3 Enhancement

No enhancement in relation to common toad or European hedgehog is proposed.

5.13 Residual and Cumulative Effects

Given the mitigation and compensation measures outlined above, no significant residual effects are anticipated on any of the species considered. Therefore, there will be no cumulative effects on local populations as a result of the development.

6.0 CONCLUSIONS

6.1 Conclusion

The site lies 350 metres west of Big Wood LWS, supports native hedgerow habitat of ecological value and has suitability to support a number of protected and notable species including foraging and commuting bats, [REDACTED] hazel dormouse, breeding birds, reptiles, great crested newt, common toad and European hedgehog.

Adverse impacts on these ecological features have been identified and appropriate mitigation measures proposed, clearance of habitats under supervision of a suitably qualified ecologist and sensitive timing of works, where possible.

Habitats that will be cleared to facilitate the construction of the new link road will be compensated for through new planting within the wider boundary of the South Wokingham project. Post-development, no residual or cumulative impacts are anticipated.

The site will be enhanced for bats and birds through the installation of boxes in suitable habitat within the wider boundary of the South Wokingham project, providing additional roosting/nesting resources.

As such it is considered that the proposals will accord with all relevant national and local planning policy in relation to ecology including Policy CP21 of the Joint Core Strategy and the NPPF (see Section 2.0).

6.2 Updating Site Survey

If the planning application boundary changes or the proposals for the site alter, a re-assessment of the scheme in relation to ecology may be required. Given the mobility of animals and the potential for colonisation of the site over time, updating survey work may be required, particularly if development does not commence within 18 months of the date of the most recent relevant survey.

7.0 REFERENCES

CIEEM, 2017. *Chartered Institute of Ecology and Environmental Management Website*.
[Online]

Available at: www.cieem.net

CIEEM, 2017. *Guidelines for Ecological Report Writing*. 2nd ed. Winchester: Chartered Institute of Ecology and Environmental Management.

CIEEM, 2017. *Guidelines for Preliminary Ecological Appraisal*. 2nd ed. Winchester: Chartered Institute of Ecology and Environmental Management.

CIEEM, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Winchester: Chartered Institute of Ecology and Environmental Management.

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

DEFRA, 2023. *Multi-Agency Geographic Information for the Countryside (MAGIC) Map Application*. [Online]

Available at: www.defra.magic.gov.uk

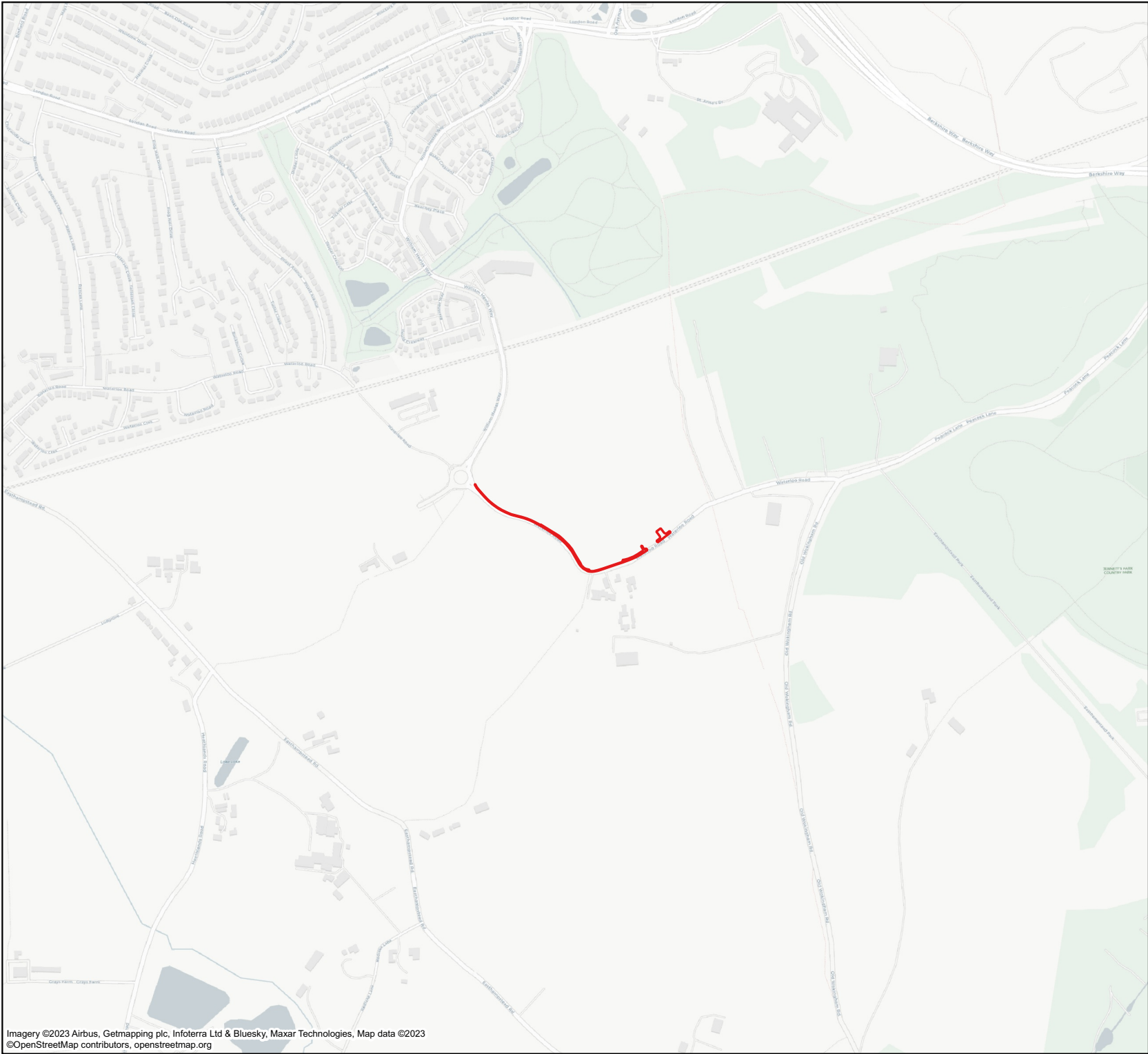
ECOSA, 2020. *South Wokingham - ES (Phase 2) - Chapter 14 Ecology*, North Baddesley: ECOSA.

English Nature, 2001. *Great Crested Newt Mitigation Guidelines*. Peterborough: English Nature.

Natural England, 2021. *Template for Method Statement to support application for licence under Regulation 55(2)(e) of The Conservation of Habitats and Species Regulations 2010 (as amended) in respect of great crested newts Triturus cristatus (WML-A14-2)*, Peterborough: Natural England.

UKHab Ltd, 2023. *UK Habitat Classification Version 2.0*. [Online]
Available at: <https://www.ukhab.org>
[Accessed 30 August 2023].

Map 1 Site Location Plan



**R14 TEMPORARY
CONSTRUCTION ACCESS AND
FOOTWAY, SOUTH WOKINGHAM**

PRELIMINARY ECOLOGICAL APPRAISAL

Map 1 - Site Location Plan

Client:	Kingacre Estates Limited
Date:	March 2024
Status:	Final

KEY

 Site Boundary



Prepared by: JP	Date: 140234
Last amended by: JP	Date: 250324



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Map 2 Baseline Habitat Map



**R14 TEMPORARY
CONSTRUCTION ACCESS AND
FOOTWAY, SOUTH WOKINGHAM**

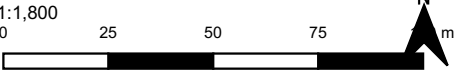
PRELIMINARY ECOLOGICAL APPRAISAL

Map 2 - UKHab Habitats

Client:	Kingacre Estates Limited
Date:	March 2024
Status:	Final

KEY

- Site Boundary
- Developed land; sealed surface
- Modified grassland
- Other neutral grassland
- Vacant/derelict land/ bareground
- Native Hedgerow



Prepared by: JP	Date: 140234
Last amended by: JP	Date: 250324

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Appendix 1 Site Proposals Plan



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GENERAL ARRANGEMENT

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Appendix 2 Sites Designated for Nature Conservation

Statutory Sites

Internationally Designated Sites - Ramsar Sites, Special Areas of Conservation and Special Protection Areas

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) form a network of protected sites across the European Union and United Kingdom. In the United Kingdom the primary legislative protection is afforded to these sites under the Conservation of Habitats and Species Regulations 2017 (as amended).

Ramsar sites are designated as wetlands of international importance which are afforded similar legislative protection to SPAs and SACs.

SACs are sites which support internationally important habitats or internationally important assemblages or populations of species. SPAs are designated for supporting internationally important populations of birds. SACs, SPAs and Ramsar sites are generally also designated as Sites of Special Scientific Interest.

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) there is a legal requirement that competent authorities, such as local planning authorities, need to consider whether plans or projects are likely to have a significant adverse effect on SPAs, SACs or Ramsar sites, either alone, or in combination with other plans or projects. In the event that a likely significant effect cannot be ruled out, on the basis of objective information, then the competent authority must undertake an “Appropriate Assessment” to fully assess the plan or project against the site’s conservation objectives. Unless certain defined derogation tests can be met, the competent authority may not authorise nor undertake any plan or project which adversely affects the integrity of a SPA, SAC or Ramsar site.

Nationally Designated Sites – Sites of Special Scientific Interest and National Nature Reserves

Sites of Special Scientific Interest (SSSI) receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Such sites are designated to protect specific areas of biological or geological interest of national importance. Such sites also generally receive strict protection through the planning system.

National Nature Reserves (NNR) are also usually designated as SSSIs and are specifically managed for their wildlife value. They receive legal protection through the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). As with SSSIs, these sites generally receive strict protection through the planning system.

Locally Designated Sites – Local Nature Reserves

Local Nature Reserves (LNR) are designated by local authorities under the National Park and Access to the Countryside Act 1949. These are generally designated not only for their local wildlife value but also for education, scientific and recreational purposes. These sites generally receive protection from development through the planning system.

Non-Statutory Sites

Locally Designated Sites

In addition to statutory designations, local authorities often designate sites of nature conservation importance at the local level. Such designations are named differently by each local authority and may be referred to as Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC) or Sites of Nature Conservation Importance (SNCI), amongst others. The exact level of protection afforded to these sites varies and is normally defined through local planning policy.

Appendix 3 Relevant Legislation

Bats

All UK bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely:
 - To impair its ability to survive, breed, or rear or nurture their young;
 - To impair its ability to hibernate or migrate;
 - To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat *Rhinolophus ferrumequinum*;
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Bechstein's bat *Myotis bechsteinii*;
- Barbastelle *Barbastella barbastellus*; and
- Greater mouse-eared bat *Myotis myotis*.

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside SACs, the level of legal protection that these species receive is the same as for other bat species.

Hazel Dormouse and Great Crested Newt

These species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely, to impair its ability to survive, breed, or rear or nurture their young, to impair its ability to hibernate or migrate;
- To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any one of these species uses for shelter or protection.

Badger

The Protection of Badgers Act 1992 consolidates previous legislation (including the Badgers Acts 1973 and 1991 Badgers (Further Protection) Act 1991). It makes it an offence to:

- Kill, injure or take a badger;
- Attempt to kill, injure or take a badger; or
- To damage or interfere with a sett.

The 1992 Act defines a badger sett as 'any structure or place which displays signs indicating current use by a badger'.

Breeding Birds

With certain exceptions, all wild birds, their nests and eggs are protected by Section 1 of the Wildlife and Countryside Act 1981 (as amended). Therefore, it is an offence, to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- Intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls. Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- Intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- Intentionally or recklessly disturb the dependent young of any such bird.

Reptiles

The four widespread species of reptile that are native to Britain, namely common or viviparous lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix helvetica*, are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence to:

- Intentionally kill or injure any of these species.

The remaining native species of British reptile (sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) receive a higher level of protection via inclusion under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations (in England and Wales only) and the Wildlife and Countryside Act 1981 (as amended). The distribution of these species are restricted to only a few sites in England.

Species and Habitats of Principal Importance in England

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The England Biodiversity List is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions. There are currently 943 species of principal importance and 41 habitats of principal importance included on the England Biodiversity List.

Appendix 4 Appraisal Criteria for Bats

The criteria used to assess the suitability of roosting and foraging/commuting habitat for bats is based on industry guidelines and outlined in **Table 1**¹⁴.

Table 1: Criteria used to Assess Suitability of Roosting and Foraging/Commuting Habitat for Bats

Suitability	Description of roosting habitats	Commuting and foraging habitats
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Moderate	A structure or tree 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.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically/structure that does not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerows or un-vegetated stream, but isolated (i.e. not very well connected to the surrounding landscape by other habitat). Suitable, but isolated, habitat that could be used by small numbers of foraging bats such as a lone tree or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

¹⁴ Table adapted from (Collins, 2016)

Appendix 5 Baseline Habitats

Table 2: Summary of Baseline Habitats

Habitat Ref.	1
Level 1	Terrestrial
Level 2	Grassland (g)
Level 3	Modified Grassland (g4)
Level 4	N/A
Level 5	N/A
Secondary Codes	Line of Trees (1174); Tall herb (16)
	
Species List	
Perennial ryegrass, hogweed, broad leaved dock, knapweed, soft brome, creeping buttercup, creeping thistle. Line of trees (1174) Semi mature oak trees, willow species, hawthorn, goat willow.	

Habitat Ref.	2
Level 1	Terrestrial
Level 2	Heathland and shrub (h)
Level 3	Hedgerows (h2)
Level 4	Hedgerow (priority habitat) h2a
Level 5	N/A
Secondary Codes	
Species List	
Blackthorn, ash, pedunculate oak, field maple, dog rose and ivy with cow parsley, creeping bent, cock's foot, bramble, bracken, hogweed and cleavers recorded in the ground flora. The hedgerow is approximately three metres high and one metre wide	