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Ecological Impact Assessment

Site Name

Land North of Sun Lane, Riseley

Client

Wellington Estate and 3West
Group

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About the Author

This report has been prepared by Ben Small at The Ecology Co-op, with 3.5 years' experience. He has a Level 1 great crested newt survey class licence and is an accredited agent under Holly Waters' Natural England Level 2 Bat Survey Class Licence, having also assisted on several EPS licences with regards to bats and badgers. As a qualifying member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and as Chartered Ecologist through this body, he is bound by their code of professional conduct.

About the Reviewer

This report has been reviewed by Emma Baker, who is a Senior ecologist with nine years' experience. She holds Level 1 great crested newt and hazel dormouse survey licenses. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), she is bound by their code of professional conduct.



Report Summary

Purpose	The Ecology Co-op has been commissioned by the Wellington Estate and 3West Group to undertake an Ecological Impact Assessment (EclA) for a development on land north of Sun Lane, Riseley. Following a Preliminary Ecological Appraisal (PEA) (including UKHab mapping) of the site by The Ecology Co-op in June 2025, further ecological surveys were undertaken, including protected species surveys and desktop studies between June 2025 and July 2026 to provide sufficient baseline information for this assessment. This document presents the findings of these surveys, and an EclA in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines to inform an outline application with all matters reserved except for access for the construction of up to 44 dwellings.
Context	The site predominantly comprises two neutral grassland fields, bordered by scrub along the eastern boundary as well as a small additional strip of neutral grassland in the south-east corner that leads to an access gate. Hedgerows are present along the north, west and south of the site, with a line of trees running north-east to the south-west through the centre of the site, delineating the two fields. The site sits within 2km of three designated sites, as well as within the 5km buffer zone of Thames Basin Heath Special Protection Area (SPA).
Impact on Protected Species	The protected species surveys completed between 2025 to 2026 identified presence of a range of bat species, including barbastelle and serotine, the presence of two amber-listed bird species (likely breeding), as well as presence of dormice. The illustrative proposed development (which will be detailed through a future reserved matters application) will result in the loss of habitat for nesting birds, dormice and hedgehogs and foraging habitat for badgers, bats and reptiles.
Impact on Habitats	The current illustrative proposal is expected to result in the loss of almost all grassland habitat, some scrub and hedgerow habitat, and a section of the central line of trees. A Biodiversity Net Gain (BNG) Calculation will be required to demonstrate that the proposals can achieve a minimum of 10% net gain.



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1 INTRODUCTION

1.1 Background

The Ecology Co-op was commissioned by the Wellington Estate and 3West Group to undertake an Ecological Impact Assessment (EclA) of land north of Sun Lane, Riseley. This report presents the findings of baseline ecological surveys and desk-study research and assesses the likely impacts and significance of effects of the proposed works in relation to protected/notable species, habitats and designated sites.

The site is located at Sun Lane, Riseley, Berkshire RG7 1QR and predominantly comprises two neutral grassland fields, bordered by scrub along the eastern boundary as well as a small additional strip of neutral grassland in the south-east corner that leads to an access gate. Hedgerows are present along the north, west and south of the site, with a line of trees running north-east to the south-west through the centre of the site, delineating the two fields. The site is bordered by residential housing to the north-east, south-east and south-west, and woodland to the north-west. Additional housing, woodland and arable farmland are present in the wider landscape. Figure 1 shows the boundary of the site.

This report will be used in relation to an outline application with all matters reserved except for access for the construction of up to 44 dwellings, including affordable housing together with access, landscaping and associated infrastructure (Figures 2 and 3).



Figure 1. An aerial image showing the location of the site, with the approximate site boundary outlined in red. Image produced courtesy of Google maps (map data ©2025 Google).



Figure 2. Proposed scheme layout for the development at land north of Sun Lane, provided courtesy of Ashby Design (January 2026, drawing no. 713/25/OUT/PL1006).



Figure 3. Proposed planting scheme for the development at land north of Sun Lane. Produced courtesy of Aspect Landscape Planning (drawing no. 8959/ASP1/LSP, January 2026).

The Ecology Co-op undertook a Preliminary Ecological Appraisal (PEA)¹ of the site in June 2025. Based on the findings of this assessment, further surveys for bats, breeding birds, common dormice *Musccardinus avellanarius* and reptiles were recommended.

1.2 Purpose of this Report

Following the recommendations of the PEA, The Ecology Co-op undertook the following:

- breeding bird surveys;
- dormouse presence/absence surveys;
- reptile presence/absence surveys, and
- bat activity surveys.

The purpose of this report is to:

- present the findings of the surveys and desk-study research (baseline ecological information);

¹ The Ecology Co-op (2026). *Land North of Sun Lane Preliminary Ecological Appraisal Issue Rev01*.



- identify and evaluate ecologically important features present on the site and within the zone of influence of the proposed development;
- describe the potential impacts of the proposed development and determine the significance of effects on these ecologically important features;
- set out the proposed impact avoidance, mitigation, compensation measures that will be undertaken to reduce significant adverse effects to an acceptable level;
- outline the habitat creation and enhancement measures that will be put into place as part of the proposed development. These are designed to ensure that the proposals contribute to both local and national biodiversity objectives.

This report is intended for submission as part of an outline planning application for the illustrative proposed development (which will be detailed through a future reserved matters application).

The surveys and report were carried out and produced at the request of the Wellington Estate and 3West Group and supervised by Ben Small MSc, who holds a Level 1 Great Crested Newt licence.

1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna and invertebrate species and current nature conservation planning policy is outlined in Appendix 1 of this report.

Where possible, this report provides information on how the development proposal will be designed to meet the requirements of both the National Planning Policy Framework (NPPF) and local planning policy. Details of the NPPF are provided in Appendix 1 and relevant local planning policy by Wokingham Borough Council and Hart District Council is provided in Appendix 2.



2 SURVEY METHODOLOGY

The following sections describe the methods used in the desk study and protected species/habitat surveys. All survey methods are in accordance with current best practice guidance for the respective species/taxonomic group and any limitations encountered during the survey are explained in section 2.12.

This document is written in accordance with the CIEEM Guidelines for Ecological Impact Assessment² and CIEEM Guidelines for Ecological Report Writing³. Details of the ecological assessment methods are provided within section 2.9 below.

2.1 Desk Studies

A search for pre-existing records of protected species, priority species for conservation and invasive non-native species was requested from the Hampshire Biodiversity Information Centre (HBIC; radius of 1km of the site) and Thames Valley Environmental Records Centre (TVERC; radius of 2km of the site).

A search of online mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts *Triturus cristatus*), watercourses (relevant to riparian mammals and crayfish for example) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats and dormice for example) in the wider landscape around the site. The connectivity of the site to these features, buildings and other semi-natural habitats is also relevant to species such as bats, great crested newts and reptiles.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and European Protected Species (EPS) licences granted in relation to the survey site.

2.2 Habitat Survey

A site walkover survey was undertaken on 16th June 2025, during which the habitats contained within the site were described and evaluated in accordance with standard UK Habitat Classification (UKHab)⁴. The dominant species and indicators of important habitat types such as ancient woodland or unimproved grassland were recorded.

UKHab survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of the survey is to provide, relatively rapidly, a record of the vegetation and wildlife habitats present. The habitat classification is based principally on vegetation, augmented by reference to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat.

² CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

³ CIEEM (2017) *Guidelines for Ecological Report Writing, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

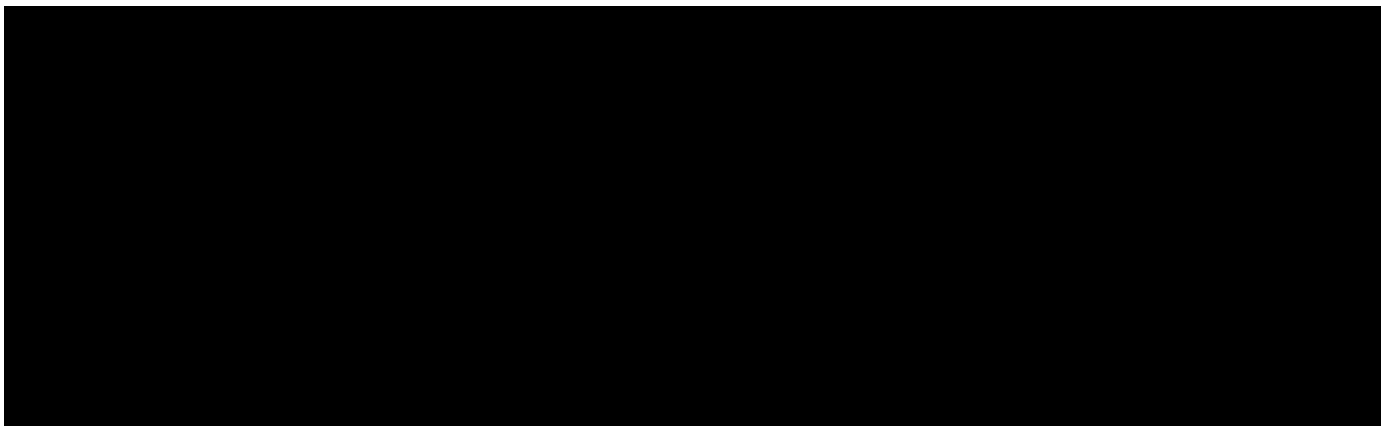
⁴ The UK Habitat Classification Working Group (2018) *The UK Habitat Classification User Manual* at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>



Data was gathered through a site walkover survey and use of on-line aerial photography to broadly categorise the habitats present using the UKHab classifications⁵. The results are presented as a map showing the distribution of habitat categories across the site. Target notes are used to describe specific features of biodiversity interest and record indicator species where appropriate. In addition to this, notable habitats, such as habitats listed under the NERC Act, 2006, are highlighted.

The UKHab methodology is a recognised tool for initial scoping of potential ecological constraints and opportunities, and for identifying potential effects of the proposed development as part of the planning application process.

As part of the Preliminary Ecological Appraisal, the site features were evaluated for their potential to support legally protected species and observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded. Details of the preliminary survey methods for each legally protected species are given below and any specific limitations to the survey(s), such as access constraints, are set out in section 2.12.



2.4 Bats

There are 18 species of bat resident in the UK, each with their own specific habitat requirements. Bats can use a wide range of features for roosting purposes including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark. Bats are generally active at night and utilise a wide range of habitats for foraging and commuting between roost sites, hibernation sites and foraging habitats. Linear features such as hedgerows, woodland edges, even fences can be important for navigation between roosting and foraging habitats.

There are no built features on site and as such no surveys were conducted with regards to these.

2.4.1 Natural Roost Features – Trees

All trees likely to be affected directly or indirectly by the proposed development were subject to a ground-based visual inspection to identify potential roost features followed by climbing inspections where necessary and safe,

⁵ UK Habitat Classification Working Group (2018). *UK Habitat Classification – Habitat Definitions V1.0* at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>



to look for evidence of roosting bats and to further assess the suitability of the feature. The potential for roosting bats for each feature, or group of features was assessed as none, FAR (further assessment required) or PRF (Potential Roost Feature(s)) in accordance with best practice guidelines⁶.

2.4.2 Bat Activity Surveys – Walked Transects

Three bat activity surveys covering the summer and autumn periods of 2025 and spring period of 2026 followed best practice guidelines⁶. Pre-determined transect routes were followed by surveyors (Figure 4), focusing on all linear features within the site boundary (boundary hedgerows and a line of trees running through the centre of the site). The transect routes were walked at a slow pace during the period from sunset to two hours after sunset by a team of surveyors, such that each part of the route was passed approximately every twenty minutes. All surveys were undertaken during weather conditions suitable for bat activity and at ambient temperatures above 10°C. The surveyors recorded bat activity using 'Echo Meter Touch' bat detectors featuring auto-identification of bat species and automatically triggered recording for later review. The locations of all bat 'registrations' were recorded onto a field map during the survey to correspond with all sound recordings.

2.4.3 Bat Activity Surveys – Automated Static Bat Detecting

Two SongMeter static bat detectors were deployed across the site (Figure 4) on four separate occasions, from July 2025 to June 2026 and left in the field for a minimum of five days – the expected maximum lifetime of the battery. Static bat detectors comprise a passive recording device with real-time full-spectrum calls that can be viewed in detail once downloaded on analysis software, allowing accurate identification of most bat calls to species level (or genus level in the case of *Myotis* and *Plecotus* spp.).

⁶ Collins, J.(ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.



Figure 4. The transect route (marked in blue) of surveyors with stops (in white) and the position of the two static bat detectors deployed on the site (red dots). Images produced using QGIS software, version 3.34 – Prizren.

The data was processed using the British Trust for Ornithology's (BTO) Acoustic Pipeline c5.502⁹, an auto-identification system. The Acoustic Pipeline uses classifiers to detect and identify bat calls within files and assign them a probability or confidence percentage of the call belonging to a particular species. The data output from the pipeline was then processed differently depending on the species identified, but groups of species calls underwent some degree of post-classification manual analysis by a suitably experienced bat acoustic analyst using Kaleidoscope Lite software v5.6.3¹⁰. Data management was facilitated using the R Shiny App through R Studio v2023.09.1+494¹¹, including to choose a random sample of some datasets to establish error rates.

Common and Soprano Pipistrelles, Barbastelle and Serotine

All calls with a confidence score of below 50% were discarded from the dataset. 10% of remaining calls from each logger then underwent post-classification validation through manual analysis to establish false positive error rates within the dataset. Each logger was validated as bat calls can vary between habitats, meaning that the location in which the logger is placed can influence the effectiveness of species detection.

Myotis, *Plecotus*, and *Nyctalus* species and *Nathusius'* Pipistrelle

All low confidence calls and 10% of high confidence calls from these species were analysed. This is because these genera overlap and are often very difficult to distinguish. Therefore, it is likely that the Acoustic Pipeline may otherwise underestimate the numbers of calls from these genera as it assigns them a lower confidence score, whilst the confidence in correctly analysing the genera the call belongs to is still high.



Noise

10% of all noise files identified by the BTO Acoustic Pipeline were manually analysed to establish a false negative error rate. Individual error rates were established for each logger location due to possible variation in noise production from logger placement.

If error rates of any species or noise files are above 10%, the entire dataset for that logger deployment is manually analysed by a competent bat acoustic analyst.

The walked transect and static bat detector ('bat logger') survey methods complement each other with the transect surveys providing information on foraging and commuting patterns, and distribution across the site; and automated static detector surveys giving more prolonged coverage through consecutive nights, thus increasing the likelihood of detecting scarce species.

2.5 Breeding Birds

The methods used for the breeding bird survey were adapted from a methodology developed by the Bird Survey and Assessment Steering Group (RSK Biocensus)⁷. This methodology requires six visits spread evenly between late-March and early-July. Any deviation from this number should be justified. These should be carried out approximately thirty minutes before sunrise through to mid-morning (10am to 11am). At least one of these visits should be in the evening, extending past sunset. All bird surveys were only undertaken during favourable weather conditions for bird activity, with periods of persistent or heavy rain, high winds or fog avoided.

A pre-determined transect (Figure 5) was walked on each visit, during which the observer recorded all birds encountered. As recommended in the guidelines, the transect route was walked at a constant slow pace by a competent bird surveyor, stopping to check any priority habitat/features and causing minimum disturbance, recording all birds detected either by sight or calls/song. Notes regarding the behaviour of birds identified were made to determine their breeding status. Birds were said to be 'confirmed as breeding' if they were observed carrying nesting material, food or faecal pellets; or nests, eggs, or recently fledged young were discovered. Birds were recorded as 'likely breeding' if observed singing or displaying, repeatedly visiting the same locations, and showing agitated or distraction behaviour. Each bird 'registration' was recorded on a map of the site using standard BTO Common Birds Census (CBC) notation⁸, (which includes behaviours and flight movements – new standards), or on Coreo. A note was also made of the start and end time, sunrise/sunset time, temperature, wind (Beaufort scale) and precipitation levels. Six breeding bird surveys (including one evening visit) were completed between April-July 2026, with any breeding behaviours from birds noted.

⁷ <https://birdsurveyguidelines.org/methods/survey-method/>

⁸ https://www.bto.org/sites/default/files/u16/downloads/forms_instructions/bto_bird_species_codes.pdf



Figure 5. The breeding bird survey transect route (marked in light blue) with site boundary outlined in red. Image produced using QGIS software, version 3.34 – Prizren.

2.6 Common Dormouse

Common dormice are typically associated with broadleaved woodland habitat, hedgerows and scrub. They tend to occur at low density, and good habitat connectivity is important. Common dormice need a constant supply of food throughout the active season over a large home range. A diversity of tree and shrub species will provide a range of fruit, nuts and insects. They hibernate during the winter – typically at ground level amongst leaf litter and mosses protected by coppice stools, tree stumps or piles of brash wood.

2.6.1 Nest Tube Survey

Dormouse surveys are undertaken by attaching purpose built ‘nest tubes’ on trees and shrubs in suitable habitat such as woodland, scrub and hedgerows. Nest tubes are used by dormice as places of shelter and they will often construct their nests within them during their periods of activity (typically between April and November). In accordance with current best practice guidelines⁹, 50 nest tubes were deployed approximately 20m apart in the boundary hedgerows and central line of trees on 18th July 2025 and left *in situ* for the survey season (see Figure 6). These were checked on a monthly basis for presence of animals and evidence of dormouse presence (distinctively woven nests) from August-October. Dormice checks were undertaken in the mornings and

⁹ Bright, B., Morris, P., Mitchell-Jones, A.J. and Mitchell-Jones, T (1997) *The Dormouse Conservation Handbook*. English Nature.



commenced one month after the nest-tubes were positioned. Surveys were undertaken by Ben Small MSc and Holly Waters, supervised overall by Holly Waters, an accredited agent under Sam Lunn's dormouse licence.

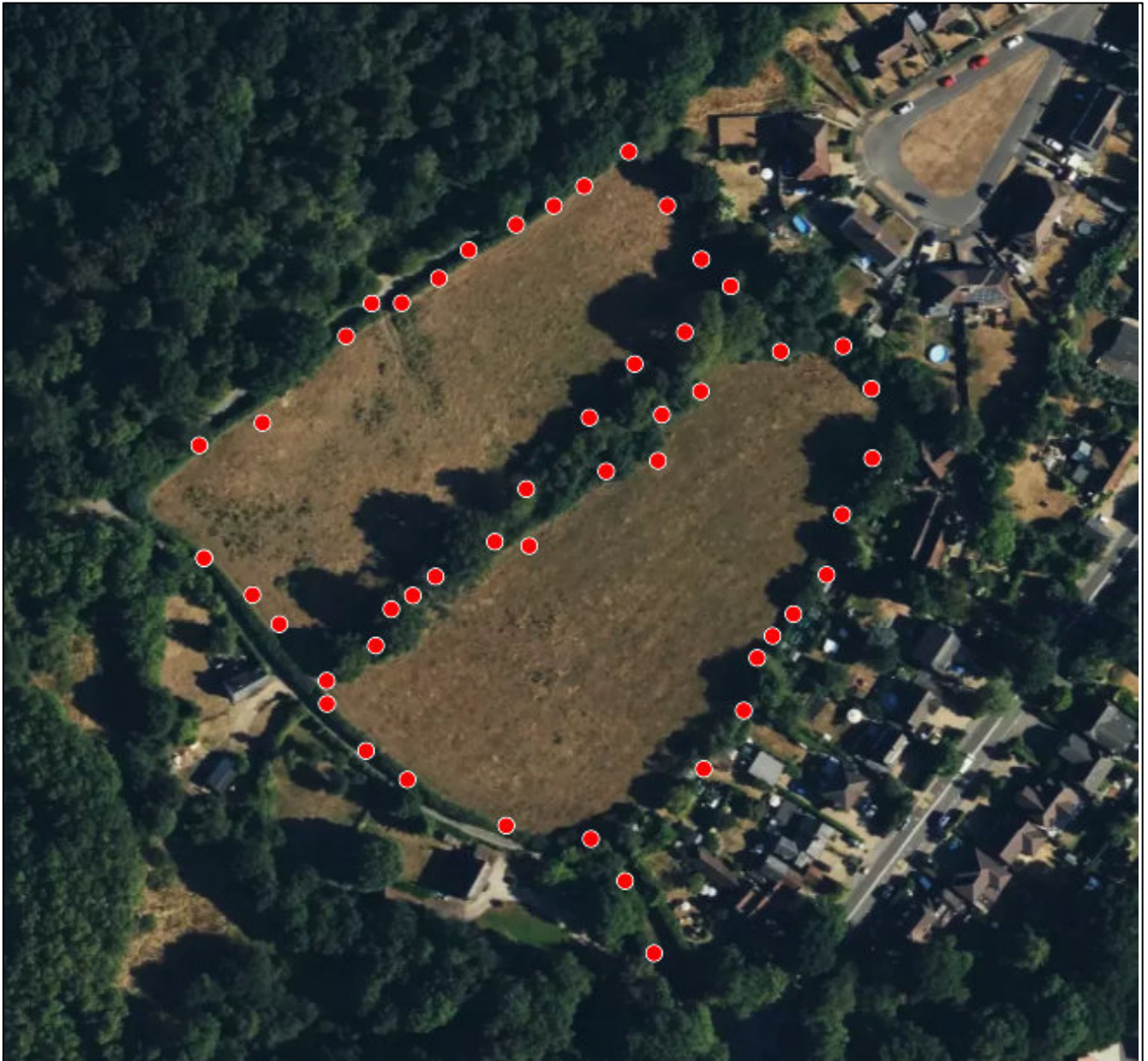


Figure 6. Dormouse nest tube locations (identified as red dots) across all suitable habitat. Images produced courtesy of Coreo.

2.7 Great Crested Newts

Great crested newts require ponds for breeding that meet a series of habitat criteria including good quality water, aquatic plants and an absence of predatory fish. The ponds must have good connectivity to semi-natural terrestrial habitats that provide their invertebrate food sources and suitable safe places to rest and hibernate outside the breeding season. Great crested newts tend to occur more frequently in areas of high pond density across the landscape in 'metapopulations' where habitat occupancy ebbs and flows according to changes in conditions.

Six ponds were identified within 500m of the site (Figure 7), however routes from these ponds are obstructed by residential development or major roads and it was assessed that newts would be unlikely to disperse from these



ponds to the site despite the suitable habitat. No further surveys were undertaken at the site that specifically target great crested newts, but a record has been made if they are found during any other survey.

Common toad *Bufo bufo* is a priority species in England under Biodiversity 2020: A strategy for England's wildlife and ecosystem services and under section 41 of The Natural Environment and Rural Communities (NERC) Act 2006, where UKBAP species were recognised as of principal importance for the conservation of biodiversity. This species should therefore be considered during planning and development. No surveys have been undertaken at the site that specifically target common toad, but a record has been made if they are found during any other site visit/survey.

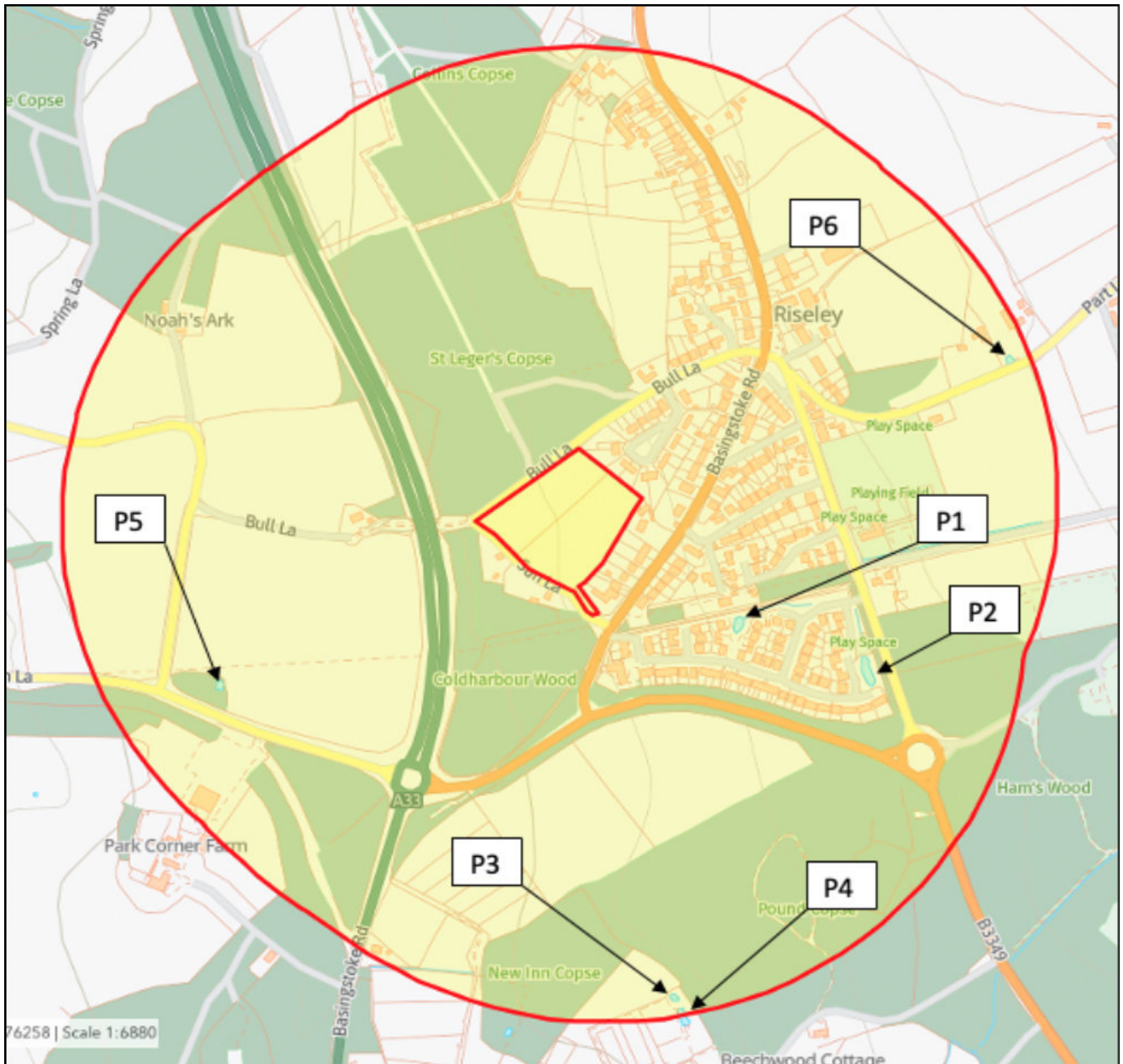


Figure 7. Ponds within 500m of the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>), contains public sector information licensed under the Open Government Licence v3.0).



2.8 Reptiles

The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis* grass snake *Natrix natrix* and adder *Vipera berus* are widespread species that can be found in many semi-natural habitats, such as rough grassland, scrub, heathland and open woodland where there is good vegetation cover, an abundance of invertebrate, amphibian or small mammal prey and areas of open ground for basking.

Standard reptile presence/likely absence surveys involve setting out artificial refugia (reptile 'mats' or 'tins') in potentially suitable habitat. Reptile mats are pieces of roofing bitumen felt and reptile tins are pieces of corrugated metal sheet approximately 1m x 0.5m in size, which absorb heat from the sun more rapidly than the surrounding vegetation and provide cover and basking places attractive to reptiles. These are then checked for presence of animals under suitable weather conditions. There are no up-to-date best practice guidelines for reptile surveys, but a minimum of seven survey visits under suitable weather conditions is generally considered to be adequate when determining their presence/likely absence, and 15–20 visits are used to calculate a 'peak count' for population size class assessment.

A total of 66 roofing felt mats were used in this survey (see Figure 8). The mats were left *in situ* for a minimum of one week to 'bed in' and allow reptiles to locate them before the first check. The mats were checked at least seven times between August and September 2025 and all observations of reptiles were recorded, together with the weather conditions, temperature and time of day.



Figure 8. Location of reptile refuges (identified with red dots). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

2.9 Invasive Non-native Species

No specific surveys for invasive non-native species (INNS) were undertaken. However, the presence of any invasive non-native species encountered during other fieldwork, was recorded.

2.10 Other Notable Species

The site's habitats were broadly assessed for their potential to support species of principal importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with specific attention paid to features such as standing deadwood, wet flushes, bare earth banks and botanically rich areas.



2.11 Impact Assessment Methodology and Mitigation

The assessment of ecological impacts and mitigation recommendations in this report follow CIEEM Guidelines for Ecological Impact Assessment (EclA)². This involves evaluating the importance of an 'ecological feature' (habitat, vegetation community, population of a single species or assemblages of species) in terms of nature conservation priority, followed by the application of the 'mitigation hierarchy'.

2.11.1 Importance of Ecological Features

A level of importance was assigned to all existing ecological features through consideration of the rarity and distribution of a habitat or species, the population size, ecological function, and trends (declining/expanding), together with any designations, legal status, or conservation policies. CIEEM recommend that the importance of an ecological feature, in terms of nature conservation priority, should be considered within a defined geographical context (for definitions used by The Ecology Co-op, see Appendix 3):

- international and European
- national
- regional
- county
- local or parish
- site/negligible.

Where protected species are present and there is the potential for a breach of the legislation as a result of the development proposals, those species are considered as 'important' features and included in the EclA. However, the level of importance assigned to the affected population of a protected species will vary depending on contextual information about the population size, distribution, abundance and trends across the range of geographical scales.

Similarly, irreplaceable habitats such as ancient broadleaved woodland are considered as important features and included in the EclA. The level of importance will vary depending on the size of the habitat parcel, its distribution and abundance at different geographical scales.

Features that are considered to be important at site level only or are of negligible importance (such as paved ground or amenity grassland) are excluded from this EclA and it should be reasonable to assume that if a feature is not mentioned, it is not ecologically important.

2.11.2 Significance of Effects

In accordance with EclA (CIEEM 2018)², a significant effect is defined as "an effect that either supports or undermines biodiversity conservation objectives for important ecological features". Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national/local nature conservation policy). The effects may be described as significant at a range of geographic scales as defined above.

The impacts are identified and described in relation to the following characteristics:

- *adverse or positive* – does the impact result in the loss or gain in biodiversity/quality of the environment?
- *extent, magnitude* – the spatial area over which the impact may occur, the area of habitat lost, or the



- number of individuals/populations affected
- *timing* – in relation to the life cycle of the ecological feature (e.g., nesting bird season)
- *duration, frequency* – is the impact temporary or permanent, frequently repeated or a one-off event?
- *reversibility* – is the impact temporary or permanent? Would the ecological feature recover after the impact?
- *cumulative impacts* – in combination with other plans/projects.

2.11.3 The 'Mitigation Hierarchy'

The assessment of the significance of an effect is made initially in the absence of mitigation. This is followed by a sequential process of determining the most appropriate way to remove or minimise significant effects. The preferred option is to avoid impacts in the first place, for example by redesigning the scheme to retain an important area of habitat, or timing works sensitively. Mitigation measures such as translocation or displacement of populations are only applied as a last resort where significant effects are unavoidable.

When residual significant adverse effects remain after all practicable measures to avoid and/or minimise impacts have been applied, compensation measures are required. Compensation measures include habitat creation in alternative locations that offset unavoidable habitat loss.

Finally, enhancements are proposed that do not relate to a specific impact and effect but provide net gains in biodiversity – taking advantage of opportunities in the design and operation of the proposed development. These measures are intended to ensure that the proposed development contributes towards national and local biodiversity objectives.

2.12 Constraints/Limitations to Surveys

Surveys record any flora or fauna that is present at the time of the survey visits. It is therefore possible that some species may not have been present during the surveys but may be evident at other times of the year and may appear or disappear from the site if habitat conditions change. For this reason, the surveys are considered valid for up to eighteen months for [REDACTED] bats, two years for reptiles and three years for great crested newts and dormice. If the habitat conditions change significantly in the intervening period, then it is recommended that the surveys be updated.

During the bat activity surveys, the May and June 2026 static logger deployments at the southern corner hedgerow failed. Data was obtained from the static loggers stationed in the central line of trees during this period and given that similar species were present in both sections from the deployments in July-April, it is considered that any bats utilising this hedgerow also used the central line of trees, and as such this limitation is not considered to have significantly impacted upon the results.



3 ECOLOGICAL BASELINE

3.1 Designated Sites

There are three designated sites within 2km of the site, with the closest of these; Stanford End Mill and River Loddon Site of Special Scientific Interest (SSSI), situated approximately 1.1km to the west (see Figure 9). The site is also situated within the 5km buffer zone of Thames Basin Heath Special Protection Area (SPA), which is approximately 2.3km east of the site.

The HBIC records search identified four Sites of Importance for Nature Conservation (SINCs) within 1km of the site. The closest of these is Coldharbour Wood located approximately 0.2km southwest of the site. TVERC additionally identified four Local Wildlife Sites (LWSs) within proximity to the site, with the closest of these being St Leger's Copse, Collins Copse located approximately 0.3km north-west of the site. Full details of the statutory and non-statutory designated sites are provided below in Table 1.

Table 1. Designated sites within 5km of the land north of Sun Lane, Riseley.

Site name	Designation	Features listed on citation	Proximity
Statutory designated sites			
Stanford End Mill and River Loddon	SSSI	The site comprises a series of seasonally waterlogged hay meadows as well as a 4km stretch of the River Loddon. The site is of interest particularly for nationally important populations of fritillary <i>Fritillaria meleagris</i> and Loddon pondweed <i>Potamogeton nodosus</i> , the latter of which the site represents a national stronghold. The site additionally supports a variety of coarse fish species, water voles <i>Arvicola amphibius</i> and nesting birds, including kingfisher <i>Alcedo atthis</i> and little grebe <i>Tachybaptus ruficollis</i> .	1.1km west
The Marshes	Local Nature Reserve (LNR)	A former gravel pit that is partly woodland and partly marshland, with two new ponds created and 1,500 native trees and shrubs planted to establish a wildlife haven.	1.5km east
Swallowfield Meadow	LNR	Measuring 0.7ha, the site contains a wide variety of habitats including native hedgerows, ditches, seasonal ponds and a small copse, as well as the meadows themselves. The site also supports the endangered water vole.	1.7km north
Thames Basin Heath	SPA	Large swathes of heathland which support the following Annex II species: Dartford warbler <i>Sylvia undata</i> , Nightjar <i>Caprimulgus europaeus</i> and Woodlark <i>Lullula arborea</i> .	2.3km east
Non-statutory designated sites			
Coldharbour Wood	SINC	Ancient Semi-natural Woodlands, Other Woodland with Significant Element of Surviving Ancient Woodland or Ancient Woodland Characteristics.	0.2km southwest
St Leger's Copse, Collins Copse	LWS	The site comprises ancient woodland, however the majority has been replanted with conifers, beech <i>Fagus sylvatica</i> and red oak <i>Quercus rubra</i> . There are 22 woodland indicator species on site, with most of these concentrated in the southern end of the site where semi-natural woodland remains.	0.3km north-west
New Inn Copse	SINC	Ancient Semi-natural Woodlands.	0.4km south
Highgrove Copse	LWS	This wood has been recorded as hazel <i>Corylus avellana</i> coppice with a central area of oak, with an area in the north previously recorded as wet woodland. Hazel dominates the sub-canopy of this woodland,	0.8km north



		with bluebell <i>Hyacinthoides non-scripta</i> and dog's mercury <i>Mercurialis perennis</i> frequent.	
Birchen Copse & Mill Wood	SINC	Ancient Semi-natural Woodlands, Other Woodland with Significant Element of Surviving Ancient Woodland or Ancient Woodland Characteristics.	0.9km southeast
Wellington Country Park Lakes	SINC	Areas of Open Freshwater, Agriculturally Unimproved Grasslands Notable Species: thread-leaved water-crowfoot <i>Ranunculus trichophyllus</i> , blunt-leaved pondweed <i>Potamogeton obtusifolius</i> , lesser pondweed <i>Potamogeton pusillus</i> , six-stamened waterwort <i>Elatine hexandra</i> .	1.1km southeast
The Marshes	LWS	The site supports a small area of wet woodland, wet semi-improved grassland, semi-improved mown grassland and several boundary hedges. Blackcap <i>Sylvia atricapilla</i> , chiffchaff <i>Phylloscopus collybita</i> and green woodpecker <i>Picus viridis</i> have all been recorded on site.	1.6km east
Beaumy's Castle Wood and Moat	LWS	The site is a ring of woodland on a bank around a waterbody, with an island of scrub in the middle. Several ancient woodland indicator and lowland fen species have been recorded on site, including bluebell, wood-sedge <i>Carex sylvatica</i> , wild angelica <i>Angelica sylvestris</i> and water figwort <i>Scrophularia auriculata</i> .	1.8km north-west

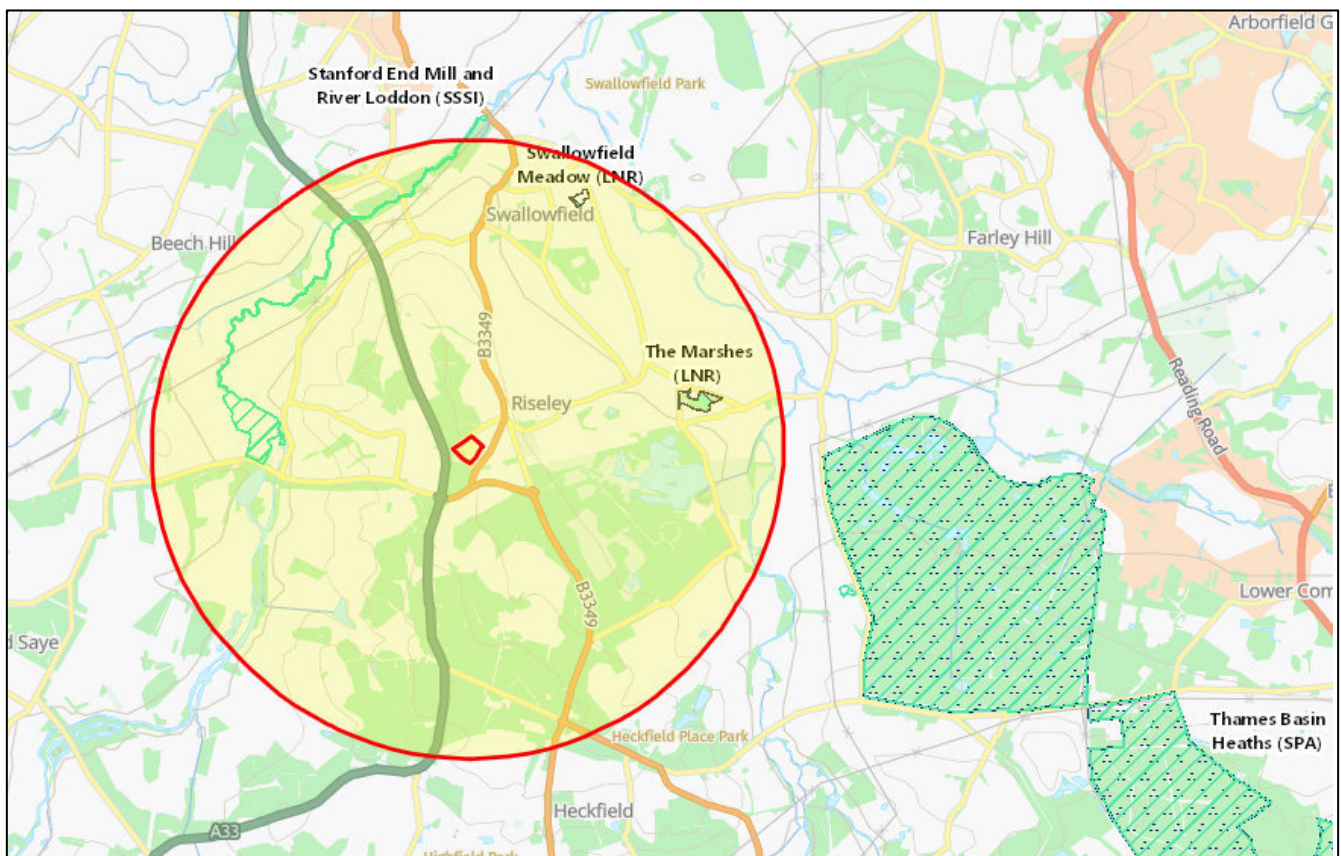


Figure 9. Statutory designated sites within a radius of 2km of the application site, with the proximity of Thames Basin Heath SPA to the site also indicated. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

The site is immediately bordered by a parcel of ancient woodland to the north, and a parcel of priority deciduous woodland to the south-west (see Figure 10). Further parcels of ancient and priority woodland are present in the wider landscape in all directions.

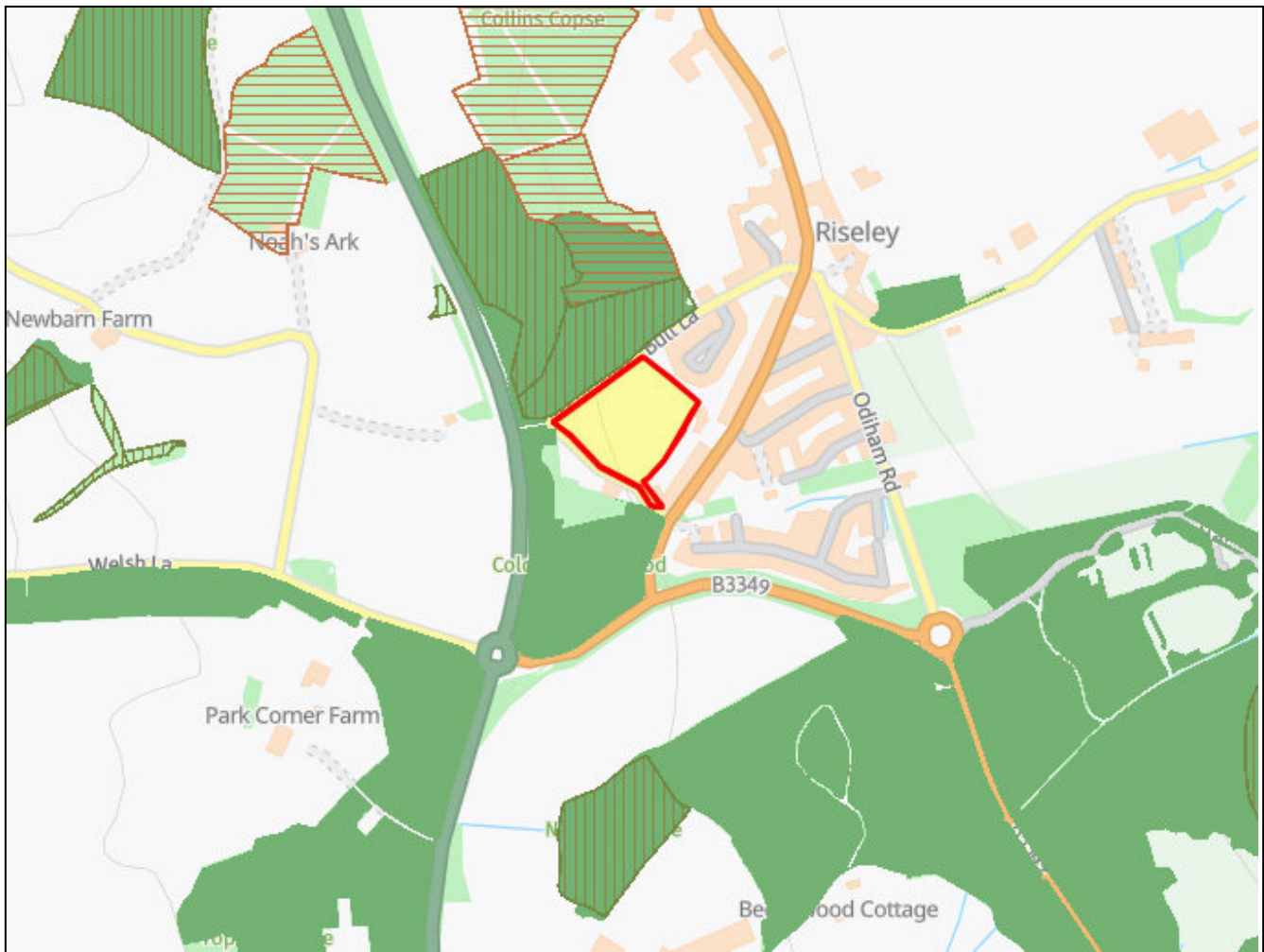


Figure 10. Habitats of importance for nature conservation, including ancient woodland (red and green hatching) and priority habitat deciduous woodland (dark green parcels). Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

There are three granted EPS licences for mitigation projects within 1km of the site boundary, all situated approximately 0.2km south-east of the site and all concerning dormice (see Table 2 and Figure 11).

Table 2. EPS Licences granted within 1km of the site.

Licence reference	Species	Dates	Actions permitted	Proximity to site
2018-34337-EPS-MIT	Hazel or common dormouse	14/05/2018- 14/05/2023	Damage of a resting place. Destruction of a resting place.	0.2km south-west
2018-34337-EPS-MIT-1	Hazel or common dormouse	09/10/2018- 31/05/2023	Damage of a resting place. Destruction of a resting place.	0.2km south-west
2018-34337-EPS-MIT-2	Hazel or common dormouse	18/12/2018- 01/05/2023	Damage of a resting place. Destruction of a resting place.	0.2km south-east

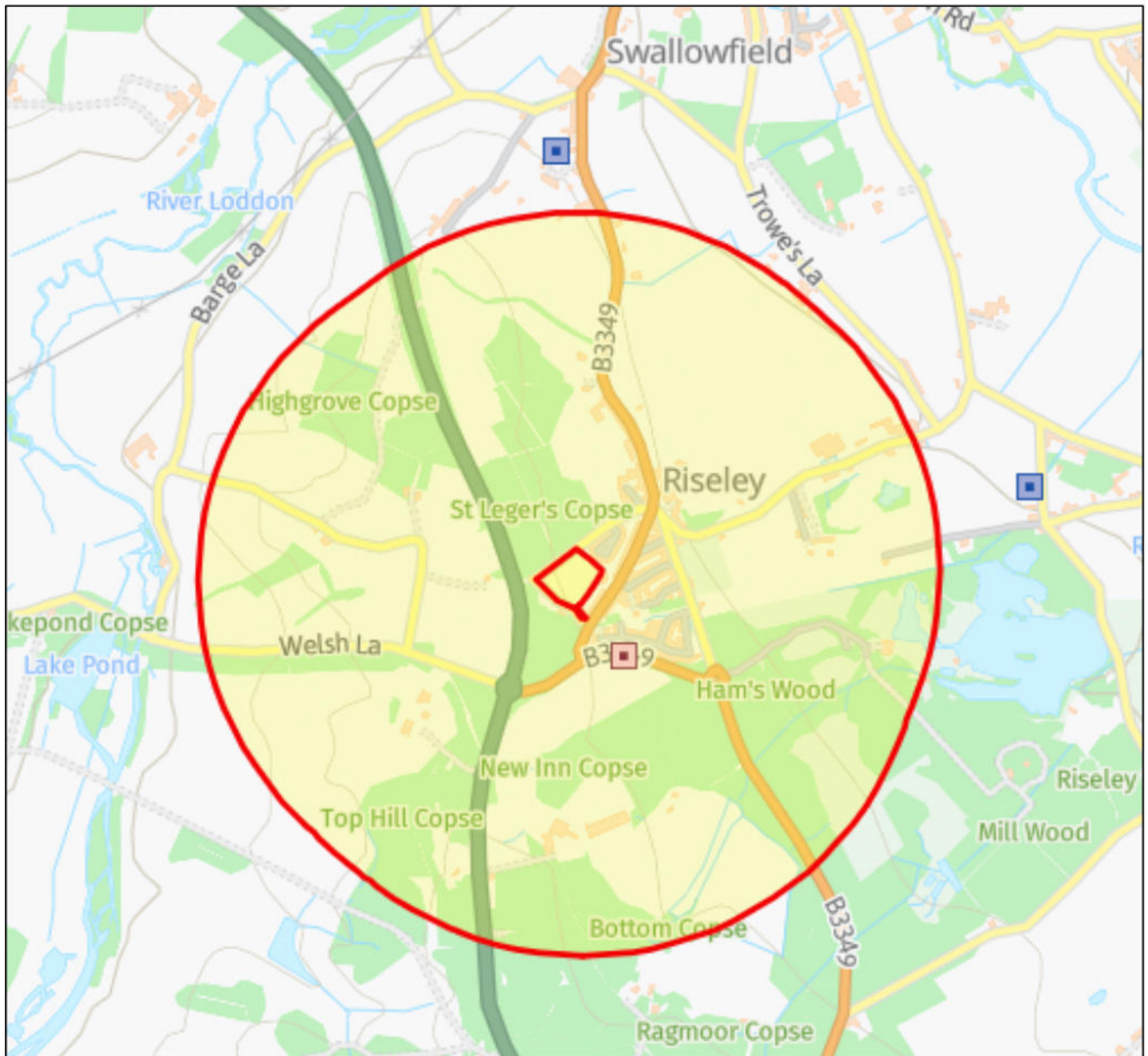


Figure 11. Granted EPS licences within 1km of the application site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Habitats

Table 3 below lists the UKHab habitats found at the site with the general species composition of these habitats. The habitat map for the site and key to the standard mapping symbols used is presented in Figure 12. Photographs of important areas of habitat are presented below.

Table 3. The UKHab habitat contained within the site. Respective areas and lengths (ha/km) of the habitats on site will be provided once the Biodiversity Impact Calculation has been completed for the site.

Habitat type	UKHab Code	Species composition	Ecological importance
Other neutral grassland	g3c	The northern field is dominated by Yorkshire fog <i>Holcus lanatus</i> , with sweet vernal-grass <i>Anthoxanthum odoratum</i> and meadow foxtail <i>Alopecurus pratensis</i> frequent. Chamomile <i>Chamaemelum nobile</i> ,	Medium



		curled dock <i>Rumex crispus</i> , timothy <i>Phleum pratense</i> , perennial ryegrass <i>Lolium perenne</i> , cock's-foot <i>Dactylis glomerata</i> , creeping buttercup <i>Ranunculus repens</i> , creeping bent <i>Agrostis stolonifera</i> , creeping thistle <i>Cirsium arvense</i> , lesser stitchwort <i>Stellaria graminea</i> , false oat-grass <i>Arrhenatherum elatius</i> , bird's-foot trefoil <i>Lotus corniculatus</i> , red clover <i>Trifolium pratense</i> , blackthorn <i>Prunus spinosa</i> , fescue <i>Festuca</i> sp., knapweed <i>Centaurea</i> sp. and tansy <i>Tanacetum vulgare</i> were also identified.	
Other neutral grassland	g3c	The southern field is also dominated by Yorkshire fog as well as sweet vernal-grass, with knapweed and creeping bent frequent. Other species identified include meadow buttercup <i>Ranunculus acris</i> , creeping buttercup, red clover, cock's-foot, blackthorn, white clover <i>Trifolium repens</i> , false oat-grass, ragwort <i>Jacobaea</i> sp., creeping thistle, lesser stitchwort, dwarf spurge <i>Euphorbia exigua</i> , bird's-foot trefoil, creeping cinquefoil <i>Potentilla reptans</i> and chamomile. At the southern corner of the southern field, a small strip of recently mown grassland leads to an access gate on the southern boundary. In this section, false oat-grass, common nettle <i>Urtica dioica</i> , bush vetch <i>Vicia sepium</i> , curled dock, fern <i>Dryopsida</i> sp., Yorkshire fog, herb-robert <i>Geranium robertianum</i> , cock's-foot, creeping buttercup, cleavers <i>Galium aparine</i> and creeping bent were all identified.	Medium
Mixed scrub	h3h	A band of scrub extends along the eastern boundary immediately adjacent to the two fields and contains blackthorn, bramble <i>Rubus fruticosus</i> , bindweed <i>Convolvulus</i> sp., common nettle and remote sedge <i>Carex remota</i> .	Medium
Line of Trees	w22	A line of trees extends from the scrub and runs north-east to south-west through the centre of the site, separating the two fields. The canopy layer comprises a mix of ash <i>Fraxinus excelsior</i> , horse chestnut <i>Aesculus hippocastanum</i> , pedunculate oak <i>Quercus robur</i> and field maple <i>Acer campestre</i> . Blackthorn dominates the understorey with hawthorn <i>Crataegus monogyna</i> , bramble and hazel additionally present.	Low
Hedgerow	h2a	A hedgerow runs along the northern and western boundaries of the site; bramble dominates in the northern section with elm <i>Ulmus procera</i> abundant but later dominating in the western section, with hazel frequent throughout. Also present is holly <i>Ilex aquifolium</i> , black bryony <i>Tamus communis</i> , dogwood <i>Cornus sanguinea</i> , blackthorn, pedunculate oak, elder <i>Sambucus nigra</i> , wild privet <i>Ligustrum vulgare</i> , fern <i>Dryopsida</i> sp. and box <i>Buxus sempivirens</i> .	Low
Hedgerow	h2a	Two smaller sections of hedgerow are present on the southern boundary, which form part of larger connected hedgerow that runs along the southern boundary immediately off-site. These sections comprise bramble, blackthorn, hazel, dogwood, field maple, dog-rose <i>Rosa canina</i> , common nettle and ground-ivy <i>Glechoma hederacea</i> as well as non-native Persian ivy <i>Hedera colchica</i> .	Low
Individual Tree	h2	A walnut <i>Juglans regia</i> tree is present in the north-eastern corner of this field.	Medium
Individual Tree	h2	A small blackthorn tree is present within the scrub on the eastern boundary of the site.	Medium

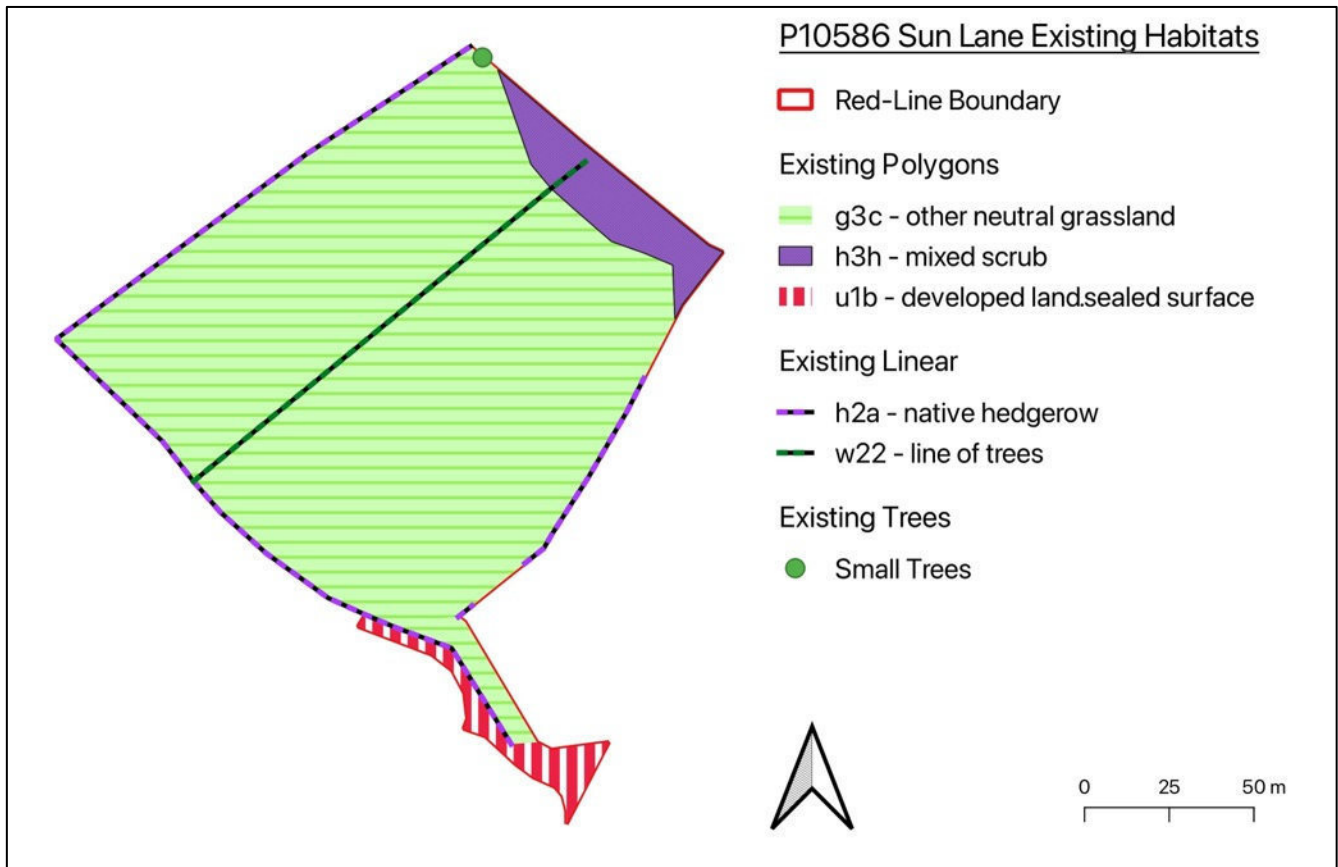


Figure 12. UKHab map of the site with the site boundary outlined in red. Images prepared using QGIS version 3.16.3 - Hannover.



Photograph 1a & 1b. View of the northern field (left) at the land north of Sun Lane, with a walnut tree in north-eastern corner (right).



Photograph 2a & 2b. Views of southern (left) field at the land north of Sun Lane, with a strip of grassland extending south of this to an access gate (right).



Photograph 3a & 3b. A band of scrub that borders the fields on the eastern boundary (left), with a line of trees that extends from the scrub and runs through the centre of land north of Sun Lane (right).



Photograph 4a & 4b. Views of the hedgerow that runs along the northern (left) and western (right) boundaries of the land north of Sun Lane.



Photograph 5a & 5b. Views of the hedgerow sections on the southern boundary of the land north of Sun Lane.



3.3.3 Interpretation

Badger populations have been rising for several decades, and they are now a common and widespread species across most of the UK countryside. Badgers are therefore not currently considered to be of great conservation concern within the UK, although the UK supports a significant proportion of the global population.

Given that no setts were identified during the further surveys, and the presence of alternative suitable habitat for this species in the woodland in the surrounding landscape, this site is considered to be of importance to badgers at the **site level**, and they are therefore not considered further within this assessment.

3.4 Bats

3.4.1 Natural Roost Features – Trees

A ground level tree assessment was conducted in October 2025, identifying two trees with potential roosting features for bats. These trees, their location and their features along with survey recommendations if removal is proposed can be found in Table 4 and Figure 13.

Table 4. Trees with potential roost features for bats.

Tree ref.	Species	Grid Reference	Description of features	Survey findings
T1	Ash	SU 71988 63081	Medium-sized ash with knot hole in the north-western aspect of the trunk, approximately 2.5m above ground.	PRF-I – aerial inspection of potentially suitable roosting features recommended if tree is to be removed.
T2	Ash	SU 71988 63081	Medium-sized ash with fissures identified on the underside of a branch extending from the north-western aspect, approximately 4.5m above the ground.	PRF-I – aerial inspection of potentially suitable roosting features recommended if tree is to be removed.



Figure 13. Aerial image indicating the location of trees with bat roosting potential within the application site. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.4.2 Bat Activity Surveys – Walked Transects

Survey conditions and timings are presented in Table 5. The results of each walked transect survey is summarised in Figures 14, 15 and 16. This shows the distribution of all bat observations on each walked transect, during which the route was covered at least twice in a session.

**Table 5.** Walked transect metadata: dates, times, temperature, weather conditions. BF= Beaufort Scale, cc= Cloud cover.

Date	Survey start time/end time	Temp. degrees centigrade, weather conditions	Surveyors
16/07/25	21:13-23:13 Sunset: 21:13	Temperature: 19.5°C 80% cloud cover, BF0, dry.	Ben Small Roxanne Cook
30/09/25	18:45-20:26 Sunset: 18:45	Temperature: 15°C 15% cloud cover, BF0-1, dry	Ben Small Holly Waters
29/04/26	20:23-22:30 Sunset: 20:23	Temperature: 13°C 5% cloud cover, BF3, dry	Ben Small Josh McIlroy

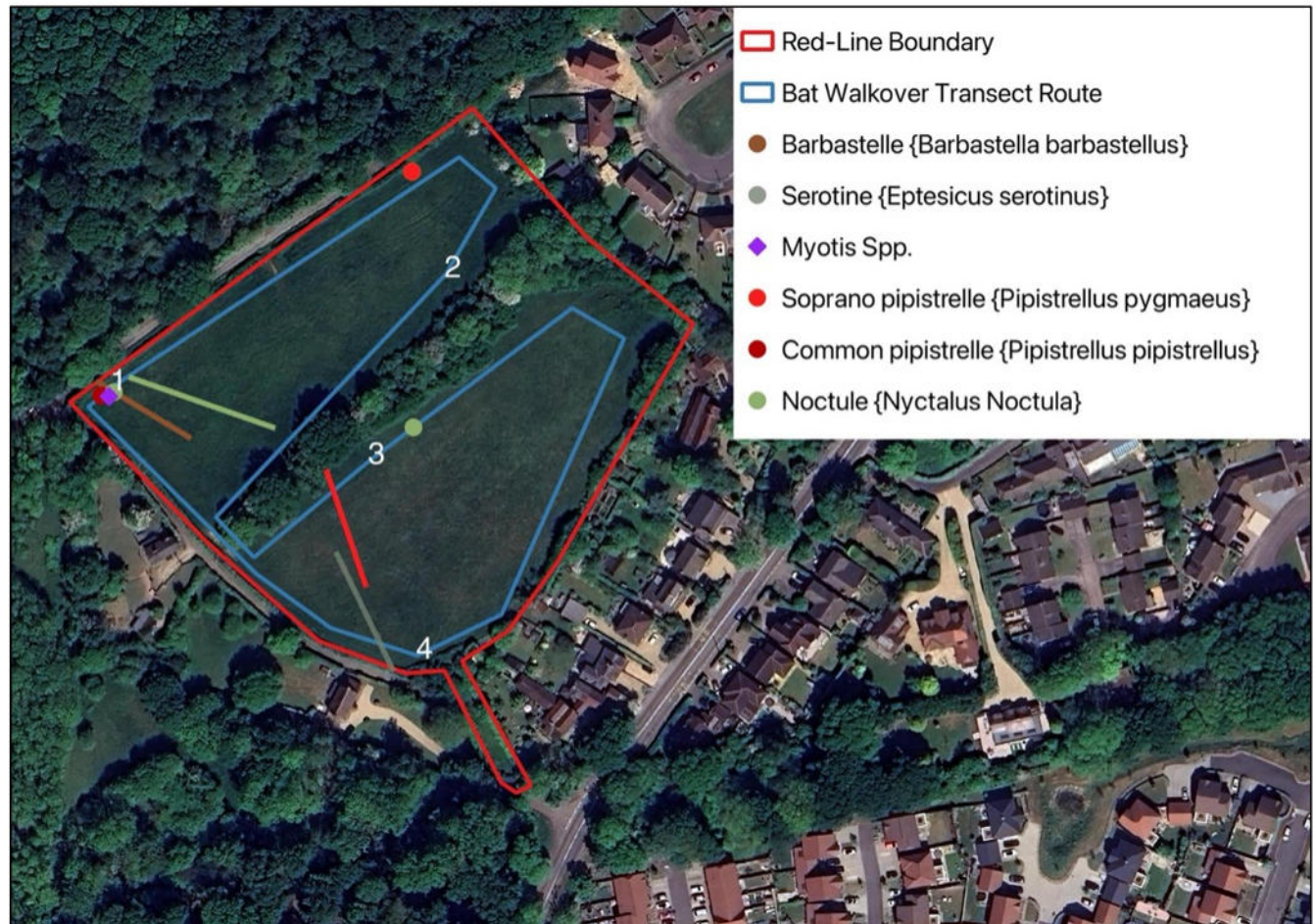
**Figure 14.** Approximate distribution of bats detected during the bat activity survey on 16th July 2025. Coloured dots represent bat activity. Images produced using QGIS software, version 3.34 – Prizren.



Figure 15. Approximate distribution of bats detected during the bat activity survey on 30th September 2025. Coloured dots represent bat activity. Images produced using QGIS software, version 3.34 – Prizren.

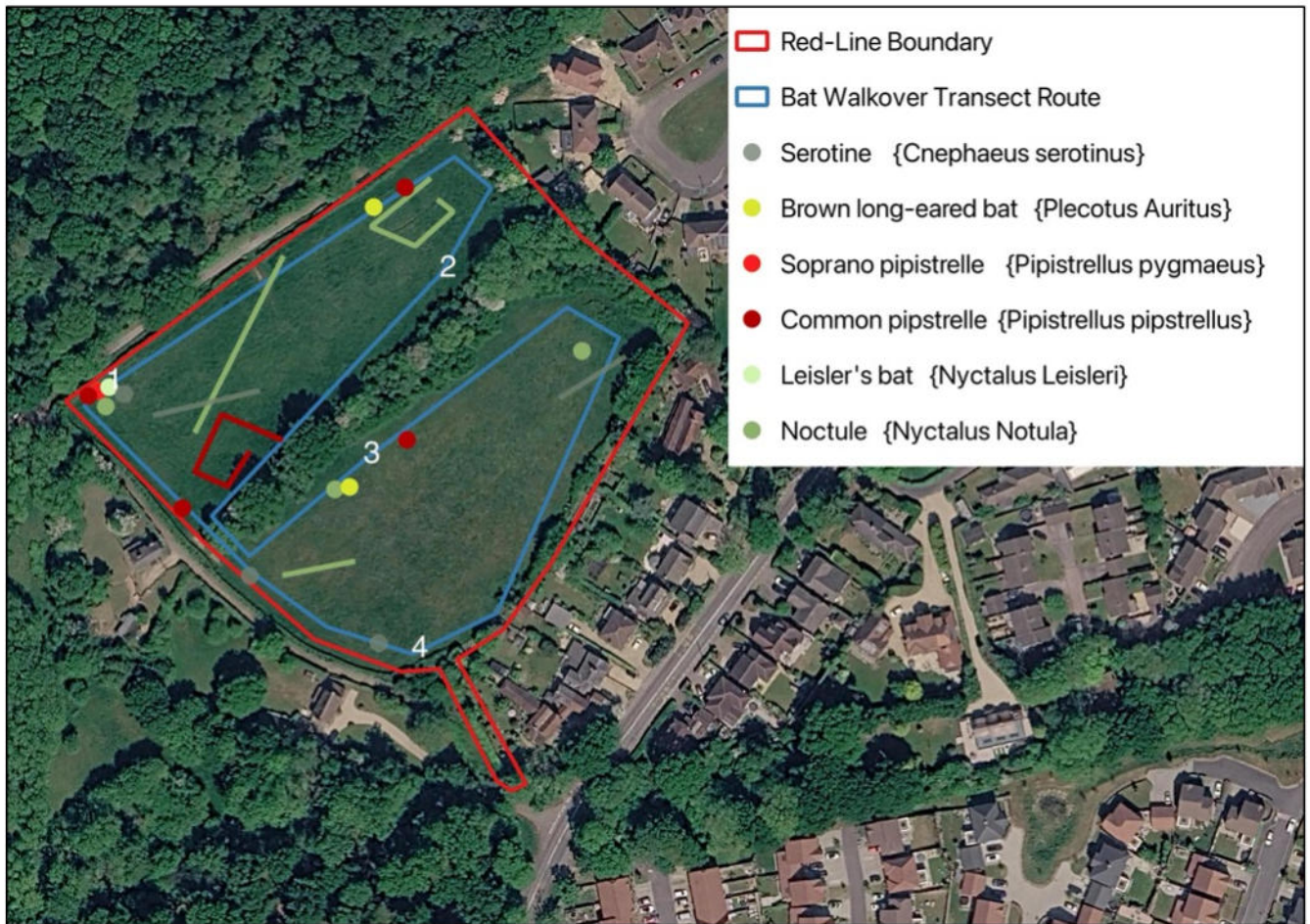


Figure 16. Approximate distribution of bats detected during the bat activity survey on 29th April 2026. Coloured dots represent bat activity. Images produced using QGIS software, version 3.34 – Prizren.

3.4.3 Bat Activity Surveys – Automated Static Bat Detecting

The results of the automated static bat detector surveys are summarised in Table 6.

Table 6. Mean number of passes recorded by each static detector per night. Please note the logger stationed at the south-west corner hedgerow failed during the months of May and June 2026, but it is considered likely that species utilising this section of the site are also likely to use the central line of trees, for which data was able to be collected.

Location	Date	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Long-eared	Barbastelle	<i>Myotis</i> sp.	Serotine	<i>Nyctalus</i> sp.
South-western Corner Hedgerow	July 2025 (5 nights)	21.8	19.6	0.2	5.7	2.6	2.4	6	12.2
	August 2025 (5 nights)	30.6	40	0	119	1	3	7	20.2
	September 2025 (5 nights)	0.2	1.4	0.2	1.2	0.2	0.2	0	0.4
	October 2025 (5 nights)	4.4	2.6	0	2.2	0.8	3	0.4	0.8
	April 2026 (5 nights)	8	20.8	0	4	0.4	5	6 (±0.66)	33 (±10.8)
	May 2026 (5 nights)	–	–	–	–	–	–	–	–
	June 2026 (5 nights)	–	–	–	–	–	–	–	–



Central Line Trees of	July 2025 (5 nights)	30.4	8.2	0	7.8	2.6	5.4	5.4	7.6
	August 2025 (5 nights)	13.6	14.2	0.4	51	4.8	4.2	4.2	4.4
	September 2025 (5 nights)	10	11.4	0	13.6	29.8	0.8	0	10 (±2)
	October (5 nights)	2	2.2	0	13.8	0.2	1.6	0	1.6
	April 2026 (5 nights)	10	5.8	0	6	0 (±0.2)	15	1.8 (±1)	7 (±0.2)
	May 2026 (5 nights)	24	12.4	0	2 (±1.6)	1	1	9.4	58.2 (±0.2)
	June 2026 (5 nights)	49	6.6	0	2	1	4	1.4	4.2 (±0.8)

3.4.4 Pre-existing Records

The HBIC and TVERC records searches indicate the presence of serotine *Cnephaeus serotinus*, noctule *Nyctalus noctule*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, and barbastelle *Barbastella barbastellus* within 2km of the site.

3.4.5 Interpretation

The bat activity surveys completed in 2025 and 2026 indicate that the main areas of importance for commuting bats are the northern hedgerow and central line of trees. The static loggers indicate that the site boundaries and the central line of trees are frequently utilised by common and soprano pipistrelles, long-eared bats, noctule and barbastelle bats (with the central line of trees regularly utilised during the September deployment). Additionally, Nathusius' pipistrelle, *Myotis* bats and serotine were also recorded using these habitats, likely for commuting purposes due to the lower average number of passes per night. The conservation status of bats recorded at the site is detailed in Table 7, along with their local distribution.

Due to the presence of barbastelle and serotine, both classed as 'vulnerable', the site is considered important to bats at a **district level**.

Table 7. Conservation status and distribution of bats recorded on site.¹⁰

Species	Conservation status England	Distribution in England
Barbastelle	Vulnerable	South and central England
Serotine	Vulnerable	South and south-east of England
Common pipistrelle	Least concern	Widespread
Soprano pipistrelle	Least concern	Widespread
Brown long-eared bat	Least concern	Widespread
Noctule	Least concern	Widespread
<i>Myotis</i> species	Least concern (common species)	Widespread

¹⁰It is not possible to identify the species of *Myotis* without droppings for DNA analysis or the capture of a live animal.

¹⁰ The Mammal Society (2020): <https://www.mammal.org.uk/science-research/red-list/>



3.5 Breeding Birds

3.5.1 Survey Results

In total, 27 species of bird were recorded during the survey; of these, two species are 'red' listed under the Birds of Conservation Concern (BoCC) and five are 'amber' listed. The following species recorded during the survey are also listed under Section 41 of the NERC Act (2006): house sparrow *Passer domesticus*, bullfinch *Pyrrhula pyrrhula*, dunnoek *Prunella modularis*, common starling *Sturnus vulgaris* and song thrush *Turdus philomelos*.

Table 8 presents the bird survey results combined for all three visits. The table is divided into red, amber and green lists from the BoCC categories. A full list of results presented on a map for each survey visit can be found in Appendix 4. Table 9 presents the dates, times and survey conditions recorded for each visit.

Table 8. Breeding bird survey summary list. *- Evening survey.

RESULTS Species	Apr (1)	Apr (2)	May (1)*	Jun (1)	Jun (2)	Jul (1)	Breeding status
Common starling				1			Non-breeding
House sparrow						1	Non-breeding
Bullfinch	1	1					Non-breeding
Dunnoek	2	2	1	1			Possible breeding
Song thrush	2	1	1			1	Possible breeding
Wren <i>Troglodytes troglodytes</i>	3	3	1	4	1	1	Likely breeding
Woodpigeon <i>Colomba palumbus</i>	2	1		7	5	3	Likely breeding
Blackbird <i>Turdus merula</i>	3	1	4	2		2	Likely breeding
Blackcap	1	3		1	1	1	Likely breeding
Blue tit <i>Cyanistes caeruleus</i>	4	4	2	8	2	4	Likely breeding
Carion crow <i>Corvus corone</i>				3	4	2	Non-breeding
Chaffinch <i>Fringilla coelebs</i>		1		2	1		Possible breeding
Chiffchaff	1	1				2	Possible breeding
Coal tit <i>Parus ater</i>						1	Non-breeding
Goldcrest <i>Regulus regulus</i>				1	1		Non-breeding
Goldfinch <i>Carduelis carduelis</i>				4	1		Non-breeding
Great spotted woodpecker. <i>Dendrocopos major</i>	1			1		1	Possible breeding
Great tit <i>Parus major</i>	4	4	1			1	Likely breeding
Jackdaw <i>Coloeus monedula</i>						1	Non-breeding
Jay <i>Garrulus glandarius</i>						2	Non-breeding
Nuthatch <i>Sitta europaea</i>						1	Non-breeding
Pheasant <i>Phasianus colchicus</i>		1		1	1		Non-breeding
Red kite <i>Milvus milvus</i>		1		1		1	Non-breeding



RESULTS Species	Apr (1)	Apr (2)	May (1)*	Jun (1)	Jun (2)	Jul (1)	Breeding status
Red-legged partridge <i>Alectoris rufa</i>	3						Non-breeding
Robin <i>Erithacus rubecula</i>	1	2	1	1		1	Likely breeding
Swallow <i>Hirundo rustica</i>						1	Non-breeding
Treecreeper <i>Certhia familiaris</i>						1	Non-breeding

Table 9. Breeding bird transect metadata: dates, times, temperature, weather conditions.

Date	Survey start time/end time	Temp. degrees centigrade, weather conditions	Surveyors
07/04/26	06:41–07:01 Sunrise: 06:26	Temp.: 6°C 0% cloud cover, light air, dry.	Paul Whitby
24/04/26	06:33–07:15 Sunrise: 05:49	Temp.: 5°C 100% cloud cover, light breeze, dry.	Paul Whitby
13/05/26	21:00–21:45 Sunset: 20:41	Temp: 9.9°C 0% cloud cover, calm, dry.	Ryan Walker Harry Jacobs
05/06/26	05:23–06:19 Sunrise: 04:50	Temp: 11°C 20% cloud cover, light air, dry.	Ben Small
15/06/26	05:10–06:10 Sunrise: 04:45	Temp.: 13°C 100% cloud cover, calm, very light rain	Ryan Walker
01/07/26	05:05–06:11 Sunrise: 04:45	Temp.: 14°C 15% cloud cover, calm, dry.	Ben Small

3.5.2 Pre-existing Records

The HBIC and TVERC biodiversity records search indicates the presence of 68 bird species within proximity to the site. Of these 68, 21 are red listed Birds of Conservation Concern and 18 are amber listed. Species listed in bold are those that could reasonably be expected to be present on site.

- Red list species: **skylark** *Alauda arvensis*, pochard *Aythya farina*, **greenfinch** *Chloris chloris*, **swift** *Apus apus*, house martin *Delichon urbicum*, lesser spotted woodpecker *Dryobates minor*, **yellowhammer** *Emberiza citronella*, herring gull *Larus argentatus*, yellow wagtail *Motacilla flava*, **house sparrow**, turtle dove *Scolopax rusticola*, **cuckoo** *Cuculus canorus*, **linnet** *Linaria cannabina*, spotted flycatcher *Muscicapa striata*, **fieldfare** *Turdus pilaris*, **mistle thrush** *Turdus viscivorus*,



starling *Sturnus vulgaris*, woodcock *Scolopax rusticola*, lapwing *Vanellus vanellus*, pochard *Aythya ferina*.

- Amber list species: pintail *Anas acuta*, brent goose *Branta bernicla*, black-headed gull *Chroicocephalus ridibundus*, barnacle goose *Branta leucopsis*, reed bunting *Emberiza schoeniclus*, osprey *Pandion haliaetus*, snipe *Gallinago gallinago*, shoveler *Anas clypeata*, **bullfinch**, common sandpiper *Actitis hypoleucos*, **duncock**, gadwall *Mareca strepera*, **kestrel** *Falco tinnunculus*, mallard *Anas platyrhynchos*, moorhen *Gallinula chloropus*, **rook** *Corvus frugilegus*, **song thrush**, **sparrowhawk** *Accipiter nisus*, **stock dove** *Columba oenas*, **tawny owl** *Strix aluco*, wheatear *Oenanthe oenanthe*, **whitethroat** *Curruca communis*, wigeon *Mareca penelope*, willow warbler *Phylloscopus trochilus*, **woodpigeon**, **wren**.

3.5.3 Interpretation

The breeding bird survey findings indicate that the site supports an assemblage of common and widespread breeding birds typical for the habitats present, including likely nesting from two amber-listed species. Based on these findings, the breeding bird assemblage supported at land north of Sun Lane is considered to be important for the conservation of birds at no more than a **local level**.

3.6 Dormice

3.6.1 Nest-tube Survey

The survey findings, dates of checks, weather conditions are presented in Table 10. The nest tube survey confirmed the presence of dormice through the discovery of a nest on the north-western boundary hedgerow (see Figure 17). Another mouse (*Apodemus* sp.) species was found to be using the nest tube on the south-western boundary, with additional food caches identified on the south-eastern boundaries.

Table 10. Results of the dormouse surveys completed at the land north of Sun Lane.

Date	Start time	Air temp. °C	Weather conditions	Results
19/08/25	10:00	18°C	100% cc, BF2, dry	<i>Apodemus</i> species nest found on south-western boundary, food cache found on south-eastern boundary
12/09/25	09:30	12°C	70% cc, BF0, dry	Dormouse nest found on north-western boundary Food caches found in south-western corner and on south-eastern boundary
22/10/25	08:30	16°C	50% cc, BF1, dry	Dormouse nest confirmed on the north-western boundary (same location as previous survey)

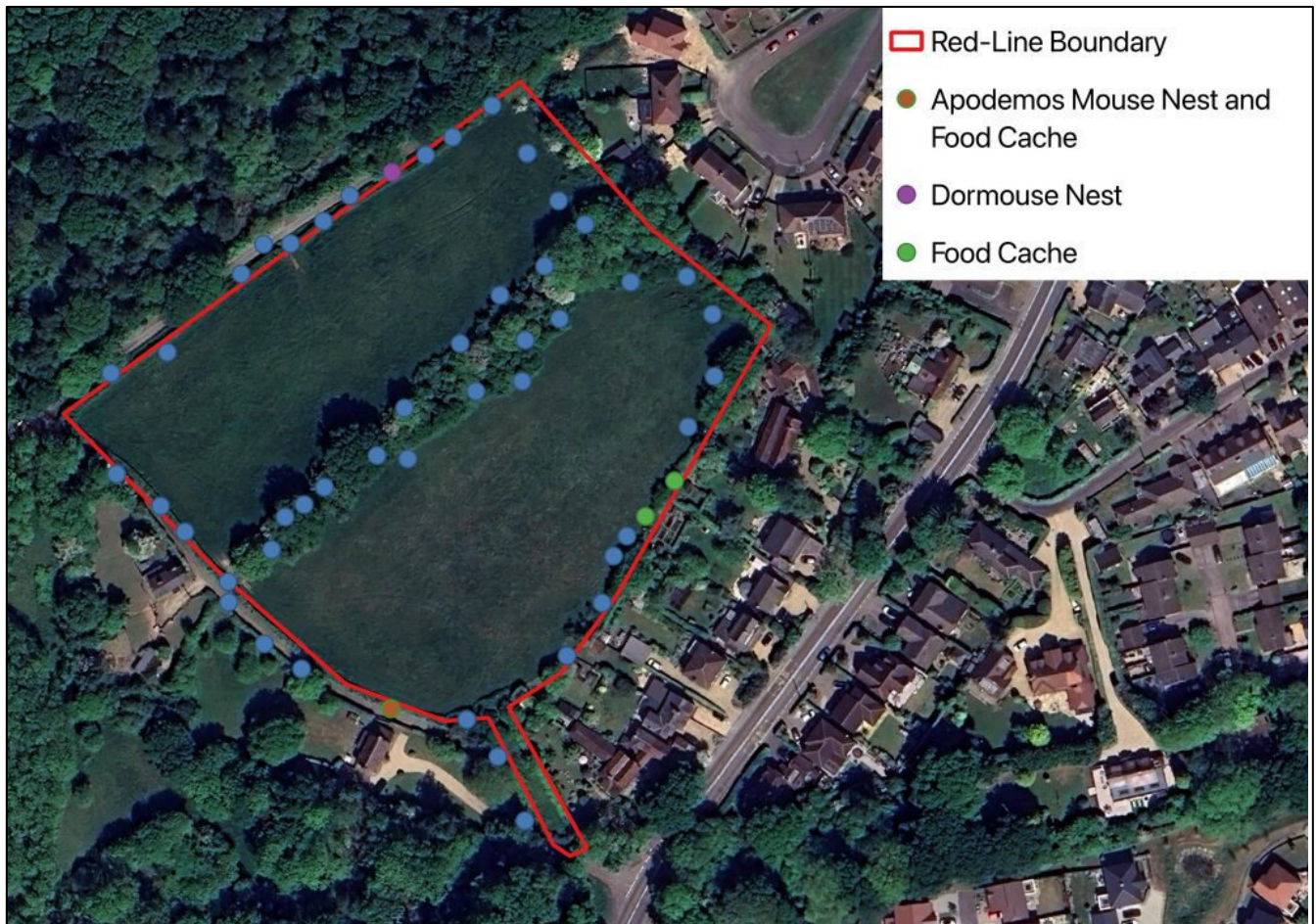


Figure 17. Dormouse survey results. Images produced using QGIS software, version 3.34 – Prizren.

3.6.2 Pre-existing Records

Two records of dormouse were returned in the TVERC records search, located 0.2km and 0.3km to the south-east of the site. While no records of this species were provided by HBIC Biodiversity Records Centre, this species is known to be under-recorded and could occur in any suitable habitat in Hampshire.

3.6.3 Interpretation

The surveys confirmed the presence of dormice on site. Whilst dormice are a conservation priority species in the UK and a European protected species, they are relatively common and widespread in south-east England. Given that the population at the site probably represents a small proportion of the local population of this species, the site is considered to be important to dormice at a **local level**.

3.7 Great Crested Newts

3.7.1 Survey Results

Six ponds are situated within 500m of the site, with the closest of these situated approximately 160m south-east of the site boundary, although this is separated from the site by residential housing which reduces the likelihood of newts crossing from this pond on to the site.

The site has suitability to support great crested newts during their terrestrial phase, with the long grassland, scrub, and hedgerows providing sheltering opportunities for this species. However, access to the site from nearby ponds



is obstructed by residential development and major roads, and as such it is unlikely that great crested newts are present on site. No great crested newts or common toads were identified incidentally during the further surveys in 2025.

3.7.2 Pre-existing Records

The TVERC records search returned eight records of great crested newts, with the closest of these situated 1.4km north of the site; records of palmate *Lissotriton helveticus* and smooth newts *Lissotriton vulgaris* were also returned. The HBIC biodiversity records search did not return any records of great crested newts or other amphibians within proximity to the site.

3.7.3 Interpretation

It is highly unlikely great crested newts will be present on site, despite the suitable habitat present. The site is therefore considered to be of **negligible** importance to great crested newts and they are not considered any further within this assessment.

3.8 Reptiles

3.8.1 Survey Results

The survey findings, dates and conditions are presented in Table 11 below. No reptiles were found during the surveys.

Table 11. Reptile survey results. BF= Beaufort Scale, cc= cloud cover.

Date	Start time	Air temp. °C	Refugia temp. °C	Weather conditions	Results
19/08/25	09:00	17°C	22.7°C	100% cc, BF2, dry.	No reptiles found
22/08/25	09:30	12°C	14.2°C	70% cc, BF0, dry.	
27/08/25	08:30	16°C	19°C	50% cc, BF1, dry.	
09/09/25	10:45	17°C	20°C	50% cc, BF2, dry.	
12/09/25	10:15	16°C	16°C	0% cc, BF1, dry (but had rained night before).	
15/09/25	10:30	15°C	16.5°C	50% cc, BF3, dry.	
23/09/25	09:40	10°C	10.5°C	70% cc, BF1, dry.	

3.8.2 Pre-existing Records

The TVERC records search returned three records of grass snake within 2km of the site, with the closest of these situated 1.5km north-west of the site. The HBIC biodiversity records search did not return any records of reptiles.



3.8.3 Interpretation

The surveys confirmed a likely absence of reptiles on site, despite the suitable habitat present. The site is therefore considered to be of **negligible** importance to common reptiles, and they are not considered any further within this assessment.

3.9 Invasive Non-native Species

3.9.1 Survey Results

No Schedule 9 species were identified during the surveys, although non-native Persian ivy was found in a hedgerow section on the southern boundary.

3.9.2 Pre-existing Records

The HBIC biodiversity records search indicates the presence of multiple invasive non-native species within 2km of the site. Seven of these were bird species including Egyptian goose *Alopochen aegyptiacus* and Canada goose *Branta canadensis*, two fish species: carp *Cyprinus carpio* and rainbow trout *Oncorhynchus mykiss*, 12 plant species including giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*, one crustacean: signal crayfish *Crangonyx pseudogracilis/floridanus* and three mammal species: muntjac *Muntiacus reevesi*, grey squirrel *Sciurus carolinensis* and American mink *Neovison vison*, within 2km of the site.

3.9.3 Interpretation

As Persian ivy is not a Schedule 9 species, it likely presents a risk to be significant at a **site level** only and it is thus not considered further within this assessment.

3.10 Other Notable Species

3.10.1 Survey Results

No notable invertebrate or mammal species have been identified on the site during the 2025 and 2026 surveys, and while suitable habitat for hedgehogs is present on site in the scrub, hedgerow and grassland, additional high value habitat for this species is present within the wider landscape.

3.10.2 Pre-existing Records

The HBIC and TVERC searches indicate the presence of hedgehog and brown hare within 2km of the site.

3.10.3 Interpretation

The hedgehog has suffered dramatic declines in population in recent decades¹¹ although it remains fairly widespread, and the development has the potential to fragment habitat further for this species. However, there is an abundance of similar habitat within the surrounding landscape, and the site is therefore only considered to be of value to these species at the **site level**.

¹¹ British Wildlife (December 2016) Britain's Hedgehogs: research and the conservation effort in the face of serious decline. British wildlife Vol. 28, pp78-86)



4 IMPACT ASSESSMENT

In this section, the predicted impacts and effects of the proposed scheme are described for each important ecological feature in turn. This is based on the best available information, both on the baseline ecological condition and on the method of construction, timescale and other development/planning constraints known at the time. The significance of the impact on nature conservation is recorded in accordance with CIEEM guidance and the degree of uncertainty relating to the occurrence and severity of an impact is discussed.

This assessment is based on the most up to date available plan: “Proposed planting scheme for the development at land north of Sun Lane. Produced courtesy of Aspect Landscape Planning (drawing no. 8959/ASP1/LSP), January 2026.

The illustrative proposed scheme has all matters reserved except for access for the construction of up to 44 dwellings, including affordable housing together with access, landscaping and associated infrastructure. In its current design the scheme will include removal of sections of the south-western boundary hedgerow of the site and central line of trees.

Activities that will occur during the proposed construction and operational phases that could give rise to significant ecological impacts include:

Construction:

- direct harm from pollution, noise, lighting, vibration and the movement of people and construction machinery
- soil compaction
- habitat severance caused by construction works on-site
- habitat destruction during site clearance activities

Post construction/operation:

- permanent habitat loss
- chronic disturbance from noise, lighting, vibration and the movement of people, vehicles on-site; risk of traffic collisions
- increased recreational use of adjacent habitats and nearby designated sites leading to soil compaction, human/dog disturbance, littering, physical damage to trees
- increase in numbers of people and pets on site.

4.1 Designated Sites

4.1.1 Impact Characterisation

The site is situated within 2km of Stanford End Mill and River Loddon SSSI, The Marshes LNR and Swallowfield Meadow LNR, with several SINC and LWSs also within close proximity. The illustrative proposed development allows for the construction of up to 44 residential dwellings, which would likely result in an increase of recreational pressure on these designated sites as well as Thames Basin Heath SPA located approximately 2.3km away. Given their proximity to site and the scale of the development, all SINC within 0.5km of the site may additionally be impacted by dust deposition.



4.1.2 Significance of Effects

Based on the above, in the absence of mitigation the illustrative proposed development will likely cause negative impacts upon designated sites, considered a small residual impact at a **national level**.

4.2 Habitats

4.2.1 Impact Characterisation

The illustrative development will result in the direct loss of other neutral grassland, with some areas of hedgerow, scrub and a line of trees also potentially being lost. Although direct impacts on the remaining habitats will be unlikely, during the construction phase there is the potential for damage due to dust deposition, digging and manoeuvring of heavy machinery, resulting in damage of roots and compaction of root zones.

Post-construction, occupancy of the residential development could result in increased recreational pressure on the remaining areas of other neutral grassland, hedgerow, scrub and line of trees. This could lead to trampling of vegetation, soil compaction, littering, fly tipping, damage to trees, disturbance to wildlife, and increased nutrient levels from pet fouling, as a result of increased site use by residents.

While there will be no direct impacts from the illustrative development on priority deciduous and ancient woodland habitats, including the adjacent Coldharbour Wood (priority deciduous woodland) and St Leger's Copse (ancient woodland), these may be indirectly impacted through noise and dust pollution. These sites may also be additionally impacted through an increased recreational pressure as a result of the development.

4.2.2 Significance of Effects

The extensive loss of other neutral grassland will result in a **negative impact** significant at the **local level**, in the absence of mitigation or compensation. The loss of hedgerow, scrub and line of trees will result in a **negative impact** significant at a **site level**, in the absence of mitigation. The degradation of retained habitats on site as a result of increased footfall and littering will result in a **negative impact** significant at a **site level**.

The degradation of the adjacent priority deciduous and ancient woodland habitats will result in a negative impact at a **local level**.

4.3 Bats

4.3.1 Impact Characterisation

It is understood that the proposed scheme will not affect any buildings that are known to support roosting bats or that have potential roosting features suitable for bats. Therefore, no direct impacts on bat roosts in buildings are predicted. The scheme does have potential to impact on bats roosting in trees, although the scale of this impact is unclear until the location and scale of tree clearance is known.

The illustrative proposed development has potential to result in disturbance to commuting and foraging bats, both during construction and in the long term after completion, through increased artificial lighting, disruption of commuting corridors, severance impacts and direct loss of the other neutral grassland habitat that could be an important source of insect prey for bats, as well as parts of the hedgerow and treeline habitat. The impact of the development on the surrounding habitats must also be considered, particularly with respect to artificial lighting.



The following species were determined to be using the site for commuting and foraging purposes and therefore will be impacted: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, long-eared bats, *Myotis* species, serotine, noctule and barbastelle.

4.3.2 Significance of Effects

The bat activity surveys identified the presence of at least eight bat species on site, including notable/vulnerable species such as barbastelle and serotine. Foraging activity at the site comprises mostly common species, although barbastelle bats were identified to frequently use the central line of trees during the September deployment, and occasional passes of serotine were also recorded. While serotine and barbastelle are classed as 'vulnerable', given the presence of suitable alternative foraging habitat in the woodland to the north-west and south-west of the site, the loss of foraging habitat on site will have a negative impact on bats not expected to be significant beyond the **local level**.

4.4 Breeding Birds

4.4.1 Impact Characterisation

The majority of the nesting bird habitat within and surrounding the site will not be directly impacted by the development, though there will likely be indirect impacts during the construction phase due to noise disturbance and during the operational phase due to increased predation risk from cats. Although significant grassland habitat will be lost, the surveys at the site have not identified any ground-nesting bird species, therefore birds such as skylark or lapwing are likely absent and ground-nesting birds are not a consideration for this development.

The development will result in the loss of sections of scrub on the eastern boundary, as well as a small section of hedgerow on the western boundary and central line of trees to allow for expanded and new site access. Without careful timing, the clearance of vegetation may result in the destruction or disturbance of active nests and the killing/injuring of eggs/young. The identified impacts could potentially affect all bird species, including the likely breeding amber-listed species.

4.4.2 Significance of Effects

The areas of scrub, hedgerow and line of trees to be removed represent a small area of the total habitat available for breeding birds across the site. It is important to consider the surrounding habitat, specifically the hedgerows, woodland and grassland to the north, west and south of the site, to accurately assess the impact of the loss of habitat for breeding birds on site. As there is a significant amount of similar habitat in the close surrounding area, the impacts of the loss of the habitats on site are reduced. Therefore, in the absence of mitigation and compensation, the development is considered to have a negative impact at a **site level**.

4.5 Common Dormice

4.5.1 Impact Characterisation

A dormouse nest was identified on the northern boundary hedgerow of the site, with previous records of and EPS licences granted for this species within the surrounding area. Given that all hedgerows, scrub and the central line of trees are well-connected to each other, this species should be considered to be present in all of these habitats within the site.



The illustrative proposed development will remove areas of the boundary hedgerow and the central line of trees. Clearance of vegetation prior to construction has the potential to result in direct harm to dormice and destruction of their nests and young, if carried out during the breeding season, as well as permanent loss of this habitat and some severance impacts.

As dormice are nocturnal, the illustrative proposed development has the potential to result in disturbance, during the construction and operational phases, through increased artificial lighting. The development will likely also result in an increased predation risk from cats.

4.5.2 Significance of Effects

Dormice are rare and vulnerable to extinction in the UK. Based on the local status of this species, these impacts are predicted to result in significant negative impacts to dormice at a **local level**. Furthermore, these impacts would constitute an offence under current wildlife legislation.

4.6 Other Notable Species

4.6.1 Impact Characterisation

Based on the survey results and general availability of the existing habitats on site elsewhere in the surrounding landscape, in general it can be concluded that important populations of other notable species are unlikely to be present (Section 3.10) and no impacts are likely to occur.

Despite no evidence of hedgehog being identified during the survey fieldwork, based on the existence of suitable habitats on site and pre-existing records indicating presence within the surrounding area, the scheme has potential to impact on these species through habitat loss. The replacement residential development, with its associated mosaic of private gardens and greenspace created would, in time, become suitable for hedgehogs (largely replacing the habitat lost). In the absence of mitigation, there remains a risk of direct harm to hedgehogs during construction activities, if present on the development site. While the eventual presence of suitable habitat may reduce long-term impacts upon this species, the proposed development could still result in fragmentation of hedgehog foraging and resting areas as fencing between properties could restrict the movement of hedgehogs.

4.6.2 Significance of Effects

While the development is likely to result in negative impacts upon hedgehogs, there is an abundance of similar habitat within the surrounding landscape that individuals from the site may freely disperse to. As such, the proposed scheme is unlikely to result in impacts that are significant beyond **site level**.

4.7 Cumulative Effects

4.7.1 Impact Characterisation

Currently there are no plans to complete the development in stages, and as such there are no expected cumulative effects as a result of these works. However, there is another proposed residential development for up to 79 dwellings located 1.2km to the north of the site in Swallowfield (to Wokingham Borough Council, planning application number 252430); together the residential pressures as a result of these developments may have cumulative effects on the Thames Basin Heath SPA, however both sites will have considered cumulative effects



and compensation within their respective HRAs.

4.7.2 Significance of Effects

Cumulative effects are not considered significant on the identified receptors.

5 MITIGATION PROPOSALS

5.1 Designated Sites

5.1.1 Impact Avoidance

Appropriate amenity space should be included within the proposal to discourage homeowners and dog walkers from visiting the adjacent St Leger's Copse/Collins Copse LWS and Coldharbour Wood SINC, as well as nearby Stanford End Mill and River Loddon SSSI, The Marshes LNR and Swallowfield Meadow LNR.

5.1.2 Mitigation Measures

The creation of green space within the development will likely reduce some recreational pressures on the above sites but will not be sufficient to reduce this impact entirely. Further off-site provisions may be required from the Wokingham Borough Council and Hart District Council to provide a suitable alternative and discourage residents from travelling to these sites.

Given the relatively large scale of the illustrative proposal and close proximity of some of the SINCs, mitigation measures for construction phase impacts such as dust, lighting, physical damage, vibration and noise may need to be detailed in a separate Construction and Environment Management Plan (CEMP), to ensure these do not adversely impact these designated sites.

The site also lies 2.3km west of Thames Basin Heath SPA, with a Habitat Regulations Assessment (HRA) produced by The Ecology Co-op in January 2026¹² advising a contribution to the Local Authority's Suitable Alternative Natural Greenspace (SANG) to ensure there are no residual likely significant effects on this site.

5.1.3 Residual Effects

With a contribution to a SANG there are expected to be no residual effects upon Thames Basin Heath SPA or the other designated sites.

5.1.4 Compensation Measures

None required.

¹² The Ecology Co-op (2026). *P10586 Land North of Sun Lane Shadow HRA Issue Rev01*.



5.2 Habitats

5.2.1 Impact Avoidance

In the first instance, the other neutral grassland, scrub, hedgerows and line of trees should be retained where possible. Any proposed ground works, construction works or landscaping work within the root protection zones (RPZ) of the trees within the retained line of trees must be undertaken using hand tools only, in accordance with specialist arboriculturist advice. The retained line of trees and hedgerows will be protected by the installation of barrier fencing (such as Heras fencing) outside the Root Protection Areas (RPAs), and permanent and temporary ground protection as required, in accordance with specialist arboriculturist advice. A buffer zone of 15m must be implemented from the ancient woodland adjacent to the site on the northern boundary, with no works permitted in this zone to ensure risks to this habitat are minimised.

5.2.2 Mitigation Measures

The implementation of mitigation measures for construction phase impacts upon on site habitats and the priority habitat deciduous woodland and ancient woodland within the surrounding landscape such as dust, lighting, physical damage, vibration and noise should be included within the CEMP.

5.2.3 Residual Effects

There will be a permanent loss of other neutral grassland which will result in a **negative impact** at the **local level**, as well as likely losses of sections of scrub, hedgerow and a line of trees on site, which will result in a negative impact at a **site level**.

5.2.4 Compensation Measures

A Biodiversity Impact Calculation (BIC) will be required for the site to demonstrate a 10% net gain in biodiversity, as required by Wokingham Borough Council¹³ and Hart District Council¹⁴. A Habitat Management and Monitoring Plan (HMMP) and Biodiversity Gain Plan (BGP) will also be required to set out processes for maintenance of habitats created.

New scrub with native species only could be planted at roadside verges and site boundaries, while species-rich hedgerows could be planted between residential properties (see Appendix 5 for a full list of recommended species). Once established, these would provide ecologically valuable habitat to compensate for any removed during the proposed development. Removal of non-native Persian ivy from the southern boundary hedgerow will also improve this hedgerow's ecological value. It is also recommended that retained sections of grassland are enhanced into wildflower meadow to increase insect diversity on site.

¹³ Wokingham Borough Council (2025). *What is biodiversity net gain (BNG) and when is it happening?*. Available online at: <https://www.wokingham.gov.uk/planning/how-apply-permission/how-apply-planning-permission/what-biodiversity-net-gain-bng-and-when-it-happening>

¹⁴ Hart District Council (2020). *Hart Local Plan (Strategy and Sites) 2032*. Available online at: <https://www.hart.gov.uk/planning-and-building-control/planning-policy/plans-and-policies>



5.3 Bats

5.3.1 Impact Avoidance

There will be an unavoidable loss of grassland habitat which supports the invertebrate prey of bats, and fragmentation of the central hedgerow which is currently used as a commuting flight patch for bats.

5.3.2 Mitigation Measures

Further surveys (either through tree climbing inspections using an endoscope, or bat emergence surveys), will be required to assess the potential for affected trees to support roosting bats in advance of the scheme.

To mitigate for impacts resulting from artificial light, it is important that the proposed scheme incorporates a 'sensitive lighting plan' developed as part of the detailed design, in accordance with the guidelines set out by the Bat Conservation Trust (summarised in Appendix 6). This should include measures to create dark corridors along boundary hedgerows and central line of trees, as well as measures to minimise light spill onto all semi-natural habitats. All street lighting should be directed downwards and light sources that are not attractive to insects should be used. Reflective white line marking should be used in preference to artificial lighting in all non-essential applications.

5.3.3 Residual Effects

There will be a permanent loss of grassland habitat at the site and potential fragmentation of the boundary hedgerows and central line of trees.

Given the presence of alternative habitats within the surrounding landscape, the negative impact on bats as a result of this loss of habitat is not expected to be significant beyond the **local level**.

5.3.4 Compensation Measures

Addition of new species-rich hedgerows and enhancement of retained grassland into wildflower meadow around the site will increase the commuting suitability of the site and will increase the insect diversity, mitigating for some of the loss of grassland foraging habitat.

To enhance the development site and encourage roosting bats, the development will incorporate a minimum of one integrated feature for each building, as well as 15 bat boxes to be installed on the surrounding trees. See Figure 18 for examples of artificial bat roosts. These will be secured through inclusion within a Landscape and Ecology Management Plan (LEMP). Additional insect hotels should be installed around the site to restore the abundance of prey sources on site for these species.



Figure 18. Left to right, 1FR Schwegler bat tube, and its appearance once installed in a group of three, Beaumaris Woodstone Bat Box and Improved Crevice Bat Box, with other brands available at many on-line wildlife stores. The Beaumaris and Improved Crevice Bat Boxes may be attached to trees or buildings.

5.4 Breeding Birds

5.4.1 Impact Avoidance

The layout of the development has retained nearly all of the existing hedgerows and most of the central line of trees. In addition, a 6m buffer will be present on the northern boundary hedgerow (as part of a 15m buffer to the ancient woodland adjacent on this side), which will prevent accidental damage and reduce disturbance during the construction phase. However, there will be some small losses in the eastern boundary scrub as well as western hedgerow and central line of trees due to proposed road access.

5.4.2 Mitigation Measures

Vegetation clearance will only be undertaken outside of the breeding bird season (1st March to 31st August). Where this is not possible, a nesting bird check by a suitably qualified ecologist will be required to confirm the absence of any nests prior to vegetation clearance. This will also include a precautionary walkover of the grassland to ensure there are no ground-nesting birds. Clearance will only proceed once the ecologist has established the absence of any active bird nest. If any active nests are identified, a buffer of at least 5m will be maintained and the nest left undisturbed until the young have safely fledged, or works will be postponed.

5.4.3 Residual Effects

Some sections of scrub as well as a small amount of hedgerow and line of trees will be removed, however there is a considerable amount of suitable habitat within the surrounding area, including a large expanse of hedgerow and woodland habitat immediately north of the site, which will reduce the impact that this loss of habitat will have.

There will be a residual impact from increased recreational pressure, which has the potential to disturb nesting birds as well as increased predation risk from cats. The residual impact resulting from the development on breeding birds is considered to be a significant negative impact at **site level**.

5.4.4 Compensation Measures

The development will include a planting scheme of native hedgerows and new trees to compensate for the small sections being lost. It is recommended that the hedgerow planting should contain a minimum of 50% blackthorn



and hawthorn or other thorny species to reduce the risk of predation by cats.

At least one bird box per new dwelling will be installed across the new development to compensate for the loss of and provide additional nesting opportunities for birds. Figure 19 details some examples, which will be secured through inclusion within a LEMP.



Figure 19. Examples of suitable bird nest boxes, including a sparrow nest box (left), Vivara Pro Seville 28mm Woodstone Nest Box (centre) and Vivara Pro Woodstone Open Nest Box (right).

5.5 Common Dormouse

5.5.1 Impact Avoidance

The illustrative proposed development is likely to cut into the boundary hedgerows and central line of trees and fragment these habitats. In the event this occurs (and these impacts are unavoidable), a European Protected Species (EPS) licence must be obtained from Natural England for the development to legally proceed. The development proposals will need to illustrate that they can satisfy the three 'derogation tests' under Regulation 53 (e) of the Conservation of Habitats and Species Regulations can be met, through a clear illustration that the conservation status of this species can be preserved through the development.

5.5.2 Mitigation Measures

Details of the mitigation measures will be set out in a method statement submitted with the licence application at an appropriate time before construction and habitat restoration works commence. In accordance with best practice guidance, this is likely to involve timing clearance of all vegetation above ground in winter, during the hibernation period for dormice, followed by excavation/stump removal in the following spring when they are active. All vegetation/stump clearance should be preceded by fingertip searches for dormouse nests of all potentially suitable features (e.g., coppice stools, hedgerows, accumulations of leaf litter, log piles and debris) by a suitably qualified ecologist.

5.5.3 Residual Effects

The above mitigation measures will prevent harm to individual dormice during site clearance and construction. However, there will be a residual loss of suitable dormouse habitat that cannot be avoided. This will have an impact considered significant at the **local level**. In order to meet the licence conditions, this loss of habitat will require compensation to ensure that the conservation status of dormice is maintained despite the loss of habitat.



5.5.4 Compensation Measures

The development will include a planting scheme of hedgerows that will benefit dormice and compensate for the minimal vegetation removal noted above.

Furthermore, dormouse nest boxes (Figure 20) can be installed within the retained sections of the central line of trees to provide additional nesting opportunities for these species.



Figure 20. An example of a dormouse box as sold by NHBS.

5.6 Other Notable Species

5.6.1 Impact Avoidance

The proposed development will result in the loss of the majority of the grassland and scrub on site, although some of these sections of these habitats will be retained. A 6m buffer will additionally be present on the northern hedgerow that will not be impacted during the works, which will allow any hedgehogs to safely disperse off site into the surrounding habitat while works are ongoing.

5.6.2 Mitigation Measures

The proposed development is likely to result in the removal of some sections of hedgerow and scrub. Prior to removal of any of these sections a finger search for hibernating hedgehogs must be conducted by a suitably qualified ecologist, with any individuals found relocated with their nesting material to the adjacent woodland immediately off-site to the north or buffer zone on the northern boundary once this habitat has been established.

5.6.3 Residual Effects

In time the mosaic of gardens and greenspace as part of the residential development will become suitable habitat for hedgehogs, and although fencing may result in fragmentation of habitat, impacts upon this species are not expected to be significant beyond **site level**.

5.6.4 Compensation Measures

The proposed gardens, greenspace and buffer zone will all provide suitable habitat for hedgehogs once established. To prevent fragmentation of suitable habitat for hedgehogs, it is recommended that hedgehog highways (Figure 21) are installed in garden fences to allow hedgehogs to freely disperse across the site. This involves the creation of a 13cm x 13cm hole within one of the fence panels, ensuring that hedgehogs can pass through but not most pets.



Figure 21. An example of a hedgehog highway cover as sold by NHBS.

6 CONCLUSIONS

A summary of the EcIA process is presented in Table 12 below.

Table 12. EcIA summary table for the land north of Sun Lane.

Ecological feature	Importance	Impact characterisation	Level of significance	Avoidance/ Mitigation	Residual effects	Compensation
Stanford End Mill and River Loddon SSSI	National	No direct loss but indirect damage through increased recreation pressure	Regional	Incorporation of amenity green space. Financial contribution to relevant LPA's SANG	None	N/A
The Marshes LNR			Local			
Swallowfield Meadow LNR						
Thames Basin Heath SPA	International	No direct loss but indirect damage through increased recreation pressure, site is over 2km from the site.	Regional			
Coldharbour Wood SINC	County	Construction impacts through dust and noise pollution. No direct loss but indirect damage through increased recreation pressure	County			
St Leger's Copse, Collins Copse LWS						
New Inn Copse SINC		No direct loss but indirect damage through increased recreation pressure				
Highgrove Copse LWS						
Birchen Copse and Mill Wood SINC						
Wellington Country Park Lakes SINC						
The Marshes LWS						
Beaumys Castle Wood and Moat LWS						
Habitats contained within site	Local	Direct loss of large area of other neutral grassland and	Local	CEMP for scheme. Heras and solid boarding to protect	Loss and fragmentation	BIC required to show 10%



Ecological feature	Importance	Impact characterisation	Level of significance	Avoidance/ Mitigation	Residual effects	Compensation
		sections of scrub, boundary hedgerow and line of trees		habitats. Maintenance and management plan to be included within a LEMP	of habitat – site level	biodiversity net gain
Priority Habitat: deciduous woodland and ancient woodland	Local	Construction impacts through dust and noise pollution. No direct loss but indirect damage through increased recreation pressure	Local	CEMP detailing mitigation strategies for potential indirect impacts	None	
Badgers	Site	N/A				
Foraging and commuting bats	District	Temporary loss of foraging habitat and change of habitat characteristics	Local	Sensitive lighting scheme	Site	Planting of species-rich hedgerow and installation of bat boxes
Roosting bats	District	To be assessed following further survey of trees if they are to be impacted by the development				
Bat assemblage in adjacent woodland habitat	Unknown	Disturbance and deterioration of habitat quality through increased recreation pressure	Uncertain-potentially district	Ecologically sensitive lighting design	Site	N/A
Breeding bird assemblage on development site	Local	Minor loss of habitat due to removal of sections of hedgerow and line of trees	Site	Timed vegetation clearance under ecologist supervision	Loss and fragmentation of habitat – site level	Planting of hedgerows and trees as well as installation of bat boxes
Common dormouse population	Local	Harm caused by clearance of vegetation and disturbance by artificial lighting	Local	European Protected Species (EPS) licence for removal of vegetation. Sensitive lighting scheme	Loss of habitat	Planting of species-rich hedgerows and installation of dormouse boxes
Great crested newts and Common Toads	Site	N/A				
Common reptiles	Negligible	N/A				
Other Notable Species – Hedgehogs	Site	Loss of habitat due to removal of scrub and hedgerow	Site	Vegetation clearance under ecologist supervision	Loss and fragmentation of habitat – site level	Installation of hedgehog highways
Invasive Non-native Species	Site	N/A				



APPENDIX 1 – LEGISLATION AND POLICY

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the Directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain the favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the Directive. Together with ‘Special Areas of Conservation’ (SACs), SPAs form a network across Europe of protected areas known as the ‘Natura 2000’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Muscardinus avellanarius*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2017, as amended (the Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites, now known as National Site Network sites under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, receive the highest level of protection under the Regulations which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects’ to the conservation objectives are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb wild animals of such species;
- deliberately take or destroy their eggs (where relevant);
- damage or destroy a *breeding or resting place* of such an animal;
- possess, control, sell or exchange any live or dead animal or plant, of such species;
- deliberately pick, collect, cut, uproot or destroy a wild plant of such species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the ‘three derogation tests’) are met:



- a licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e);
- a licence can be granted if “there are no satisfactory alternatives” to the proposed action;
- a licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended

The Wildlife and Countryside Act (1981)¹⁵ remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- take, damage or destroy the nest of any wild bird while it is in use or being built
- take or destroy the egg of any wild bird
- disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrrium w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, [REDACTED] otter, polecat, dormice, hedgehog and red squirrel).

¹⁵ Wildlife and Countryside Act (WCA) (1981). HMSO London.



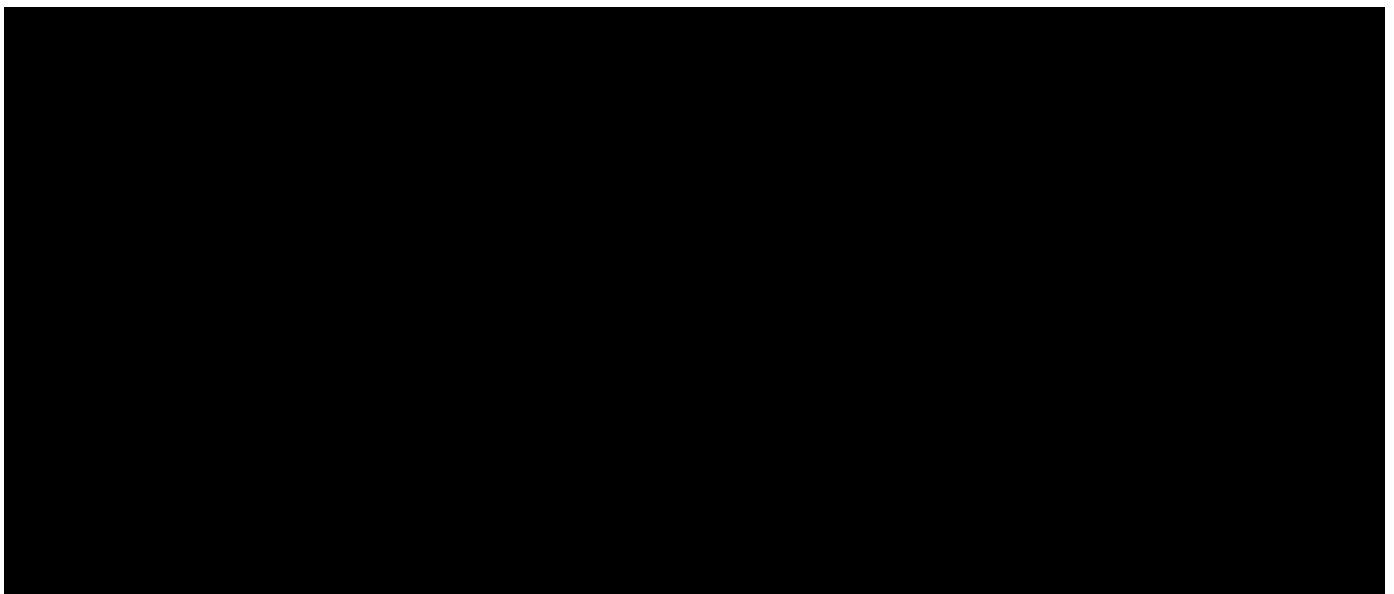
Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006)¹⁶ places a statutory duty under Section 40 on all public bodies, including planning authorities, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.



National Planning Policy Framework

The National Planning Policy Framework (NPPF 2024)¹⁸ sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

¹⁶ Natural Environment and Rural Communities Act (2006). HMSO London.

¹⁷ Protection of Badgers Act (1992). HMSO London.

¹⁸ HM Government (2024). National Planning Policy Framework. Department for Communities and Local Government. Available online at: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>.



Paragraph 192b, states that council plans should “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*”

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, (2005)¹⁹. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- minimising impacts on existing biodiversity and habitats;
- providing net gains in biodiversity and habitats, wherever possible;
- establishing coherent ecological networks that are more resilient to current and future pressures.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), published in 1994, was the UK’s response to the commitments of the Rio Convention on Biological Diversity (1992). The UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government’s response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011)²⁰, and a progress update was provided in July 2013 (Defra 2013)²¹.

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade.

Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas because Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK’s leading non-governmental bird conservation organisations reviewed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the ‘Red’, ‘Amber’ and ‘Green’ lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every five years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2021²² (Stanbury et al, 2015), which provides an up to date assessment of the conservation status

¹⁹ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.

²⁰ Defra (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Available at: <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services>.

²¹ Defra (2013) Progress Update. Available at: <https://www.gov.uk/government/publications/biodiversity-2020-simple-guide-and-progress-update-july-2013>.

²² Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 114, pp 723-747.



of birds in the UK.



APPENDIX 2 – WOKINGHAM BOROUGH COUNCIL AND HART DISTRICT COUNCIL LOCAL PLANNING POLICIES

Wokingham Borough Council Adopted Core Strategy Development Plan Document (January 2010).

Policy Number/Title	Policy Summary
CP7 - Biodiversity	Sites designated as of importance for nature conservation at an international or national level will be conserved and enhanced and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the site in terms of its international or national importance. Development: A) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or B) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly or; C) That compromises the implementation of the national, regional, county and local biodiversity action plans will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and: i) Mitigation measures can be put in place to prevent damaging impacts; or ii) Appropriate compensation measures to offset the scale and kind of losses are provided.
CP8 - Thames Basin Heaths SPA	Development which alone or in combination is likely to have a significant effect on the Thames Basin Heaths Special Protection Area will be required to demonstrate that adequate measures to avoid and mitigate any potential adverse effects are delivered.

Hart Local Plan (Strategy and Sites) 2032 (April 2020).

Policy Number/Title	Policy Summary
NBE2 - Landscape	Development proposals will be supported where there will be no adverse impact to: Important local and natural features such as trees, woodlands, hedgerows, water features e.g., rivers and other landscape features and their function as ecological networks
NBE3 – Thames Basin Heaths Special Protection Area	New development which is considered to have a likely significant effect on the ecological integrity of the Thames Basin Heaths Special Protection Area (TBHSPA) will be required to demonstrate that adequate measures will be implemented to avoid or mitigate any potential adverse effects. When considering development proposals for residential or similar forms of development the following principles will apply: There is an 'exclusion zone' set at 400m linear distance from the TBHSPA boundary. Permission will not be granted for development causing a net



	increase in residential units within this zone unless it is demonstrated through an Appropriate Assessment that there will be no adverse effect on the integrity of the TBHSPA; • There is a “zone of influence” set between 400m and 5km linear distance from the THSPA boundary. Mitigation measures will be required for all net new dwellings and must be based on a combination of Strategic Access Management and Monitoring (SAMM) and the provision and maintenance of Suitable Alternative Natural Greenspace (SANG); • Residential development of over 50 net new dwellings falling 5-7km from the TBHSPA may be required to provide mitigation measures The provision of SANG will meet the following arrangements: • A minimum of 8 hectares of SANG land should be provided in perpetuity per 1,000 new occupants; • Developments must fall within the catchment of the SANG that provides mitigation, except developments of less than 10 net new residential units
NBE4 – Biodiversity	New development will be permitted provided: • It will not have an adverse effect on the integrity of an international, national or locally designated site including the TBHSPA, SSSIs, SINC, NNRs and LNRs; • It does not result in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless development benefits clearly outweigh the loss; • Opportunities to protect and enhance biodiversity and contribute to wildlife and habitat connectivity are taken where possible, including the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations. All development proposals will be expected to avoid negative impacts on existing biodiversity and provide a net gain where possible If significant harm resulting from a development cannot be avoided, mitigated or, as a last resort, compensated for, in the case of European Protected sites does not comply with the Conservation of Habitats and Species Regulations 2017, then planning permission will be refused.



APPENDIX 3 - IMPORTANCE OF ECOLOGICAL FEATURES

Table 13. Determining importance of an ecological feature.

Level of importance	Criteria
International	Internationally designated site; Special Protected Area (SPA), Special Areas of Conservation (SAC), Ramsar, Biosphere Reserves; Regularly occurring population of internationally important species listed in Annex 1, 2 or 4 of the Habitats Directive and Annex 1 of the Birds Directive; A viable area of a habitat listed in Annex 1 of the Habitats Directive or area important for maintaining viability listed as in Annex 1 of the Habitats Directive; Areas outside designated sites that are important for supporting and maintaining the viability of the above designated habitats and/or species.
National	Nationally designated sites; Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Local Nature Reserves (LNR). A sufficiently large population of a species or area of habitat listed as a priority for nature conservation (S41 NERC Act) to make a significant contribution to the national conservation status (e.g. greater than 1% of the national total). A viable or regularly occurring population of a species that is nationally scarce, threatened or declining on a national scale. <u>A habitat type that is nationally scarce, threatened or declining on a national scale.</u>
Regional	A habitat type that is scarce, threatened or declining on a regional scale. A sufficiently large population of a species or area of habitat listed as a priority for nature conservation (S41 NERC Act) to make a significant contribution to the regional conservation status (e.g. greater than 1% of the national total).
County	Locally designated sites; Local Wildlife Sites (LWSs), Sites of Nature Conservation (SNCIs) and Site of Importance for Nature conservation (SINCs). A sufficiently large population of a species or area of habitat listed as a priority for nature conservation (S41 NERC Act) to make a significant contribution to the conservation status of the species at county level (e.g. greater than 10% of the county total). A viable or regularly occurring population of a species that is rare in the county, but may be common and widespread elsewhere, For example, a population at the edge of a species' range. <u>A habitat type that is scarce in a county but may be more frequent elsewhere.</u>
Local/parish	Habitats and species which are scarce in the local area but are sufficiently common and widespread elsewhere that they do not meet the above criteria.
Site/negligible	Habitats with little to no ecological value (e.g. amenity grassland and hardstanding)



Figure 23. Breeding bird survey results from the survey on 24th April 2026, with transect route (light blue) and site boundary (red) outlined. Image produced using QGIS 3.36.3 - Maidenhead.

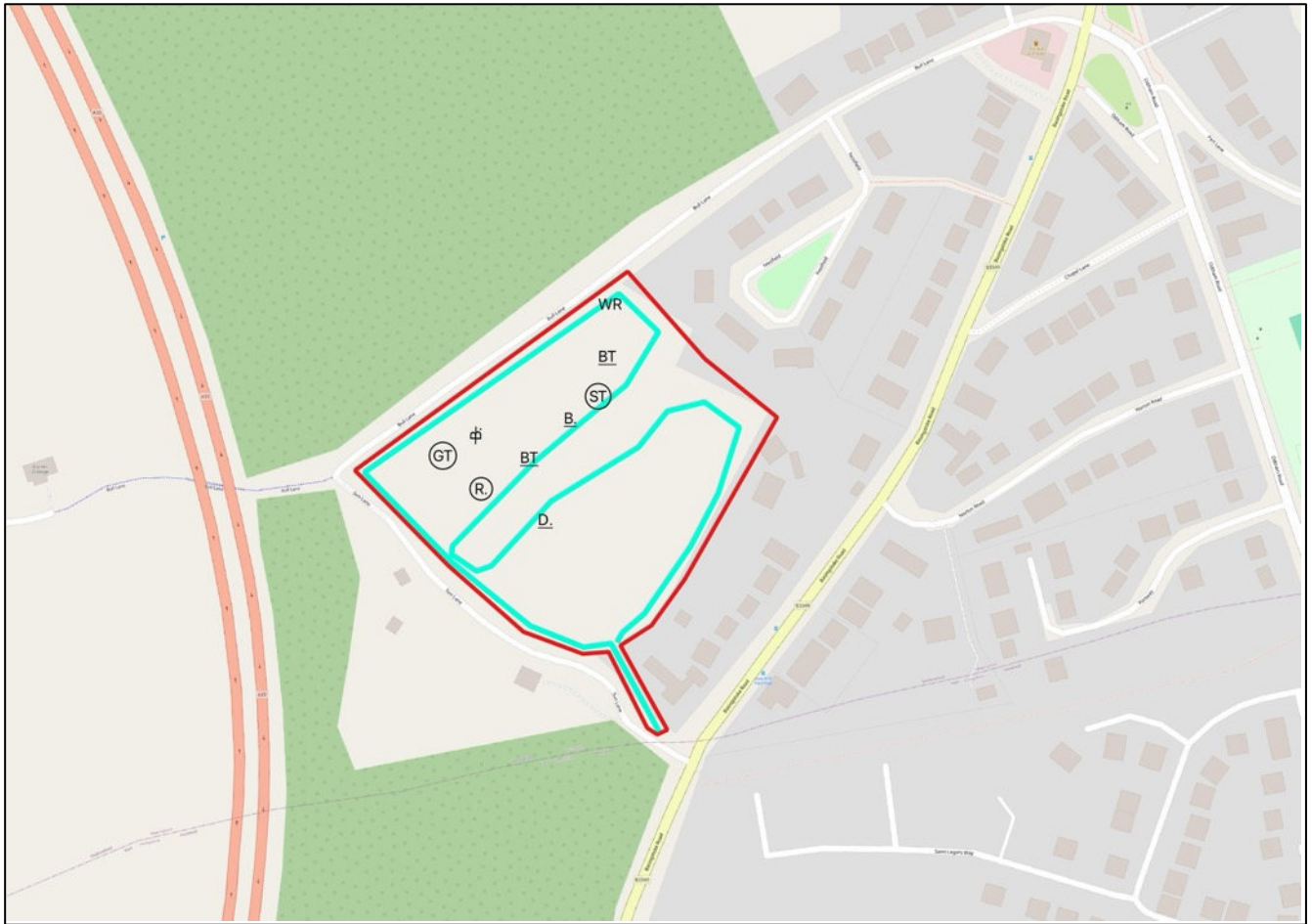


Figure 24. Breeding bird survey results from the evening survey on 15th May 2026, with transect route (light blue) and site boundary (red) outlined. Image produced using QGIS 3.36.3 - Maidenhead.

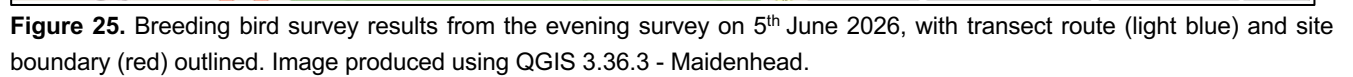
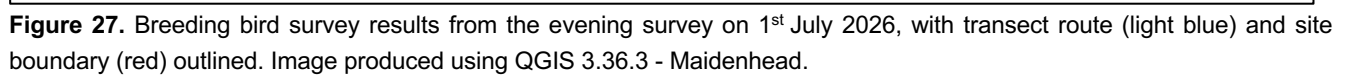




Figure 26. Breeding bird survey results from the evening survey on 15th June 2026, with transect route (light blue) and site boundary (red) outlined. Image produced using QGIS 3.36.3 - Maidenhead.





APPENDIX 5 – EXAMPLE PLANTING SCHEMES

Table 14. Recommended list of native trees and shrubs.

Native trees and shrubs		
	Latin name	Common name
1	<i>Prunus avium</i>	Wild cherry
2	<i>Sorbus aucuparia</i>	Rowan
3	<i>Malus sylvestris</i>	Crab apple
4	<i>Corylus avellana</i>	Hazel
5	<i>Cornus sanguinea</i>	Dogwood
6	<i>Crataegus monogyna</i>	Hawthorn
7	<i>Prunus spinosa</i>	Blackthorn
8	<i>Viburnum opulus</i>	Guelder rose
9	<i>Viburnum lantana</i>	Wayfaring-tree
10	<i>Ilex aquifolium</i>	Holly
11	<i>Rhamnus cathartica</i>	Buckthorn
12	<i>Eunonymus europaeus</i>	Spindle
13	<i>Ligustrum vulgare</i>	Wild privet
14	<i>Quercus robur</i>	English oak
15	<i>Betula pendula</i>	Silver birch
16	<i>Carpinus betulus</i>	Hornbeam
17	<i>Fagus sylvatica</i>	Beech



APPENDIX 6 - ARTIFICIAL LIGHTING AND WILDLIFE

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust²³ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features;
- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths,

²³ Bat Conservation Trust and Institute for Lighting Professionals (2023) Guidance note 08/23. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;

- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- upward light ratio of 0% and good optical control.

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London. Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) Ecological Consequences of Artificial Night Lighting. Island Press. ISBN 9781559631297.

CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: <https://www.gov.uk/guidance/light-pollution>



Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011.
Available at: <https://www.theilp.org.uk/resources/free-resources/>

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats.
Available at:
https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATsguidelines8_lightpollution.pdf?v=1542109376