

ECOLOGICAL IMPACT ASSESSMENT
LAND SOUTH OF TURNPIKE LANE, ICKLEFORD, HERTFORDSHIRE

carried out by



commissioned by

HAWRIDGE STRATEGIC LAND LTD.

SEPTEMBER 2025



ECOLOGICAL IMPACT ASSESSMENT

LAND SOUTH OF TURNPIKE LANE, ICKLEFORD, HERTFORDSHIRE

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The information, data and advice which has been prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report and its contents remain the property of Clarkson and Woods Ltd. until payment has been made in full.



EXECUTIVE SUMMARY

- Clarkson and Woods Ltd. was commissioned by Hawridge Strategic Land Ltd. to conduct an Ecological Impact Assessment of the land south of Turnpike Lane, Ickleford to inform a proposed planning application.
- This report details the ecological constraints and opportunities associated with the Site and provides an assessment of the likely impacts resulting from the proposed development. Measures to reduce/avoid the impacts during construction and operational phases of development have been outlined.
- The development proposals for the Site comprise a residential development of up to 100 units with associated parking and gardens, access roads, public open space and landscaping.
- A UKHab Survey was undertaken on 18th and 19th June 2025, and categorised all habitats on Site according to the UK Habitat Classification criteria. Species-specific surveys e.g. reptiles in May-July 2025, breeding birds in May-June 2025, otter and water vole in May 2025 and next by end of September 2025, and bats since May 2025 and remain ongoing until October 2025.
- The Site comprised tussocky grassland, horse grazed grassland, amenity grasslands, tall forbs, scrub, scattered groups of individual trees, horse stables and private driveway. The fields were bounded by a network of hedgerow and woodlands.
- The Site was considered suitable to support a variety of wildlife, including badger, bats, amphibians including great crested newt (GCN), reptiles, invertebrates, hedgehog, hare, and nesting birds. A precautionary approach to Site clearance activities will be taken to avoid impacts to any badgers, otters, amphibians and nesting birds within the Site.
- Development proposals have been designed through consultation with Clarkson & Woods to retain existing onsite woodland parcels as much as possible, with the exception of the site access. This has included incorporating natural habitat buffers from the woodland edge in line with local planning policy requirements. Additional woodland/scrub planting is proposed within the red line boundary to maintain habitat connectivity of the retained woodlands.
- Areas of grassland on Site have been designated under Hertfordshire's Local Nature Recovery Strategy as Grassland 1 type, which is recommended for management to maintain the biodiversity of existing good quality habitats and enhance poor quality sites. Areas of grassland will need to be lost to development; however these areas will be compensated for through purchase of off-site BNG units.



- [REDACTED]
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[REDACTED]
[REDACTED].
- Bat surveys remain ongoing. At the time of writing this assessment, the Site was found to be used for foraging and commuting by at least seven bat species, including barbastelle, common pipistrelle, soprano pipistrelle, serotine, *Myotis* sp., *Nyctalus* sp., and brown long-eared bat. The buildings, limited to a timber stables, were considered to be of Low potential for individual day roosting bats or possibly suitable as a night roost for species such as long-eared bats. Use of a night vision aid on Building 1 during the first hour of the autumn nighttime bat walkover survey (noting any emergences from the building), and a single deployment of a static bat detector within Building 2 and 3 each will be undertaken to confirm the presence absence of roosting bats and to identify if a licence is required to facilitate the removal of these buildings. One tree assessed as having potential bat roosting features will be directly impacted by the proposed development, although due to survey limitations this will be assessed fully to confirm suitability assessment for roosting bats during the autumn season. A small section of the northern woodland will be removed to create a new site entrance, housing and associated infrastructure. New planting will compensate for the loss of a woodland area and provide opportunities for foraging bats within the developed site. The results of the remaining surveys will be provided in an addendum report to this EclA to inform the planning application. It is recommended that a sensitive lighting strategy accompany the planning application.
- Based on the data search and GCN eDNA surveys of ponds within proximity of the Site, the presence of GCN on site is considered highly unlikely. A precautionary approach to works is therefore proposed, under a non-licensed risk avoidance method statement (RAMS). An update GCN eDNA survey of Pond 1 is recommended in 2026 prior to any works commencing; should the results confirm presence of any GCN the Site will obtain a district level licence (DLL) from Natural England.
- A detailed assessment on Biodiversity Net Gain (BNG) will be provided in a separate report. The proposed scheme is anticipated to result in a loss of 7.68 Habitat Units (-14.56%) and a gain of 2.85 Hedgerow Units (approx. +1518%). The purchase of off-site BNG credits will be required to achieve a 10% net gain in habitat units; this can be secured via a condition of the planning permission.
- A Construction Ecological Management Plan: Biodiversity and Landscape and Ecological Management Plan will be provided for the Site, which will detail sensitive working methods for clearance of habitats and buildings to avoid potential impacts on protected species, protection of all retained habitats during the construction phase and management of all retained and newly created habitats in the long-term.



-
- Several ecological enhancements are recommended, including creation of biodiverse habitats and provision of habitat features such as bird and bat boxes, hedgehog access holes through residential fencing, and hibernacula.
 - Provided the recommendations and mitigation measures detailed within this report are implemented, the proposals are anticipated to have a minimal residual impact on ecological features that may be present within the Site.



1 INTRODUCTION

- 1.1.1 Clarkson and Woods Ltd. was commissioned by Hawridge Strategic Land Ltd. to carry out an Ecological Impact Assessment at Ickleford Manor, Ickleford, Hertfordshire (nearest postcode SG5 3XE) hereafter referred to as 'the Site'.
- 1.1.2 This Impact Assessment discusses the likely effects of the Proposed Development on the ecology of the Site using information collected during a UKHab and further Phase 2 surveys carried out by Clarkson and Woods Ltd on 16 June 2025. An initial ecological walkover was undertaken by Ethos Environmental Planning (Ethos) on 01 April 2025, the results of which were reported in a technical note for the Site (Appendix A refers), and was used to inform the scope of surveys and this assessment.
- 1.1.3 The assessment has been prepared by an experienced ecologist and subject to a two-stage quality assurance review by appropriately experienced senior consultants who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 1.1.4 Unless the client indicates to the contrary, information on the presence of species collected during the surveys will be passed to the county biological records centre in order to augment their records for the area. This is in line with the CIEEM code of professional conduct¹.
- 1.1.5 If no action or development of the Site takes place within twelve months of the date of this report, then the findings of the assessment and supporting surveys should be reviewed. An update of the surveys and/ or assessment may be required.

1.2 Report Aims

- 1.2.1 The aims of this report are:
- To establish, as far as possible, the baseline ecological conditions existing on Site at the time of survey and to identify any likely future changes in the baseline conditions up to the point of commencement.
 - To determine likely significant effects resulting from the proposals upon the ecological features identified within the assessment.
 - To assess whether the proposals are likely to be in accordance with relevant nature conservation legislation and planning policies, including Biodiversity Net Gain.
 - To identify where further surveys to establish baseline conditions, inform assessment or develop mitigation or compensatory measures are required.
 - To identify how mitigation or compensation measures will be secured, maintained and monitored.
 - To identify ecological enhancements to be carried out and how they will be implemented, maintained and monitored.

1.3 Site Description Summary

- 1.3.1 The Site comprises deciduous / broadleaved woodland, tussocky grassland, horse grazed grassland, native hedgerows, tall forbs, scrub, individual trees, a pond to the south of the Site, developed land; sealed surface in the form of horse stables, and unsealed gravel driveway. The River Oughton lies more than 10m from the southern development boundary.
- 1.3.2 The approximate centre of the Site was at Ordnance Survey Grid Reference TL 18011 31223, and the location of the site is shown in Figure 1.
- 1.3.3 The development Site is approximately 7.00 hectares (ha) in size. An aerial photo of the Site and surrounding area is provided in Figure 2.

¹ Code of Professional Conduct. CIEEM, January 2019.

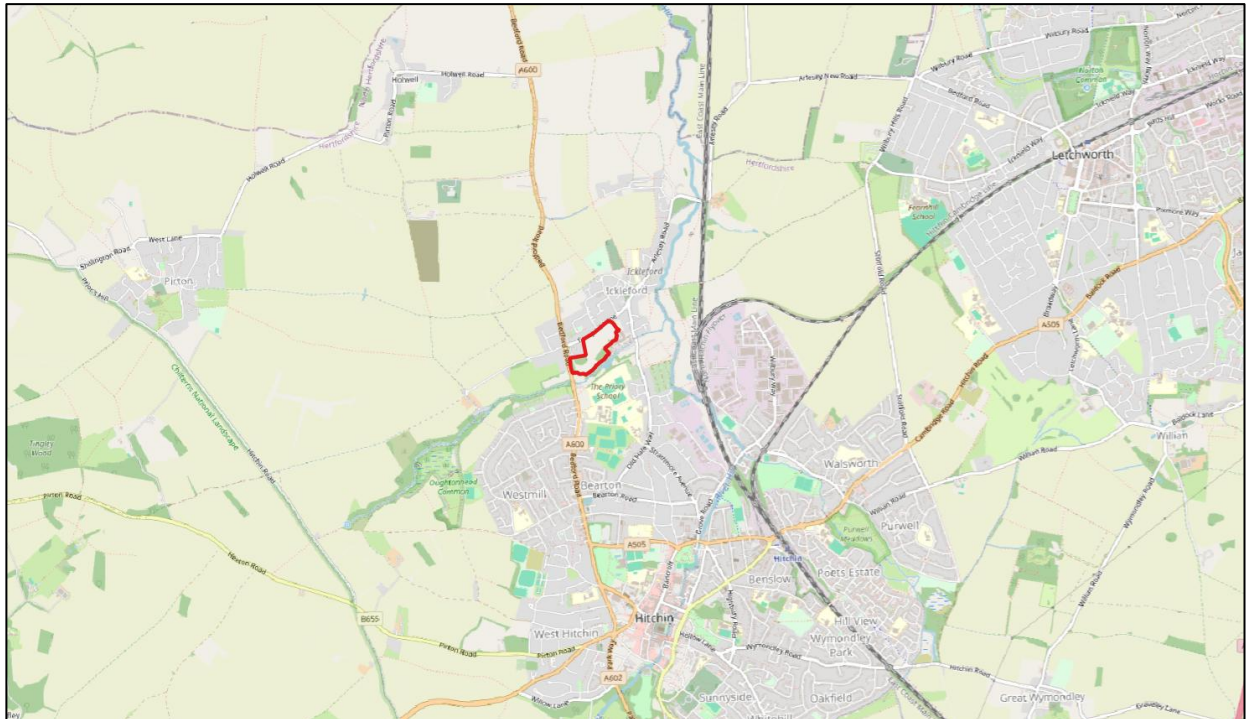


Figure 1: Ordnance Survey Map Showing Location of Site (©2025 Bing Maps)



Figure 2: Aerial Photograph of Site Boundary (©2025 Google)

1.4 Development Proposals

- 1.4.1 The proposed works comprise the development of the Site into residential housing (up to 100 units) with associated roads, landscaping and associated infrastructure. The proposals will result in the loss of grassland habitat (G5 and G6, and parts of G2 and G3), scrub (S1-5), tall forbs (O1-O3), sections of woodlands (W4 and W6), the easternmost group of small individual trees (refer to Figure 4 for habitat parcel reference), and the demolition of all existing buildings within the Site. The existing hedgerow and remaining unimpacted woodland network will be retained and be enhanced. In addition, new hedgerows, trees and a sustainable



drainage system will be created from this development. This assessment has been informed by the following plans:

- Concept Masterplan – 01. Ickleford Manor, Ickleford (HAWR.250207)(R5: 13.08.25). Insitu Design
- Illustrative Landscape Strategy. Land Land at Ickleford Manor, Ickleford (edp9240_d007) (20th August 2025). EDP.

- 1.4.2 It should be noted that this is an outline planning application for residential development with means of access for consideration and all other matters reserved for subsequent approval; demolition of all existing structures; associated landscaping, drainage, car parking; infrastructure and all ancillary and enabling works. Therefore the master layout plan prepared for the outline application is indicative only. Any changes to the building design and layout and landscaping made subsequent to publication of this report will be issued to Clarkson and Woods Ltd. for review. Ecological impacts and mitigation opportunities may be affected by any such changes.

1.5 Quality Assurance

- 1.5.1 All ecologists employed by Clarkson and Woods are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct² when undertaking ecological work.
- 1.5.2 The competence of the lead surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (CSS)³. The surveyors have been assessed under the Clarkson and Woods QA processes as competent to complete the survey.
- 1.5.3 The UKHab survey, habitat condition assessments, ground level tree assessments, and internal and external building inspections were completed by Henry Sturgess MCIEEM, and Charlie Durigan ACIEEM. Henry has 11 years' experience undertaking ecological surveys, has a BSc in relevant subjects and holds a Level 4 FISC certification. Charlie has 11 years' experience undertaking ecological surveys, has a BSc, PgCert and MSc in relevant subjects and holds a licence for the survey of bats (NE Level 1 Reg. No. 2020-44777-CLS-CLS) and great crested newts (NE Level 2 2022-10553-CLS-CLS). Charlie has been trained and is certified for conducting Modular River Physical (MoRPh) field surveys and River Type studies for River Condition Assessments.
- 1.5.4 Henry and Charlie were assisted by Bryan Tan, a qualifying member of CIEEM, and Holly Chapman-White. Bryan has over 2 years' experience undertaking ecological surveys and holds an MBiolSci in Zoology. Holly has 1 years' experience undertaking ecological surveys, and has an MSc in Global Wildlife Health and Conservation and BSc in Environmental Management and Sustainability.
- 1.5.5 This report has been prepared in accordance with the relevant British Standard: BS42020: 2013 – *Biodiversity: Code of Practice for Planning and Development*⁴. The report has been subject to a two-stage quality assurance review by appropriately experienced ecologists who are members of CIEEM.

1.6 Assessment Scope

- 1.6.1 This assessment will consider impacts arising from the construction and operation phases of the development, in order to encompass its entire lifespan as far as can reasonably be anticipated.
- 1.6.2 The Zone of Influence of the Development will vary according to the impact or Site feature being assessed. For example, waterbodies such as rivers and the wider catchment are considered in relation to runoff and pollution. Terrestrial habitats within and surrounding the red line are also considered in relation to construction and operational impacts.

² CIEEM (2013). *Code of Professional Conduct*. www.cieem.net/professional-conduct.

³ CIEEM (2013). *Competencies for Species Survey (CSS)*. www.cieem.net/competencies-for-species-survey-css.

⁴ The British Standards Institution (2013). *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*. BSI Standards Ltd.



2 BASELINE CONDITIONS

2.1 Introduction

- 2.1.1 This section sets out the results of the Desk Study and ecological field surveys along with an evaluation of their relative importance to inform the Impact Assessment. The methodologies associated with the baseline assessment are summarised with each ecological feature's subheading below.
- 2.1.2 The specific surveys carried out were chosen based on the likelihood, in our considered opinion, of each protected species or Species of Conservation Concern being present on or within the vicinity of the Site. This is informed by the Site's geographic location and the habitat types present on and around the Site. The following species-specific baseline surveys were chosen: badgers; bats; otters; water vole; reptiles; amphibians; birds; invertebrates and other species of conservation concern including non-native invasive species.
- 2.1.3 Details of the legislative protection afforded to those protected species which have been identified as occurring or potentially occurring on the Site are given in Appendix A. Species of Conservation Concern are defined as those appearing in any of the following; Priority Habitats and Species under Section 41 of the Natural Environment and Rural Communities Act (2006); red or amber-listed birds within the British Trust for Ornithology's Birds of Conservation Concern (2021); and any specific local conservation priority species such as those listed in Red Data Books.

2.2 Evaluation Methodology

- 2.2.1 Each recorded ecological feature, whether it is a species, a habitat or a site designated for nature conservation, is described in turn in this section to provide the pre-development baseline conditions on Site. Subsequently, an evaluation of each feature's 'ecological importance' is made. The evaluation of ecological importance is informed by the criteria provided within the CIEEM Guidelines for Ecological Impact Assessment (2018)⁵.
- 2.2.2 With due consideration to the criteria, each feature is classified on a geographical scale of ascending importance as follows; Negligible, Site, Local, District, County, National and International. The chosen geographic level of importance is considered that which best represents the scale at which the loss of the Site's area or population of the feature would have the greatest impact. Where sufficient survey information not available to determine the importance of a species or habitat present on the Site, the importance of the receptor is marked as 'uncertain' and based upon the professional judgement of the author together with available relevant desk study information.
- 2.2.3 Once importance has been determined for each feature, those of Local importance or above will be considered Important Ecological Features (IEFs). Non-IEFs will typically not be considered further within the impact assessment. However, where a feature does not qualify as an IEF but is afforded specific legal protection or coverage under a particular legislation or planning policy it will also be assessed to ensure the scheme's legal and policy compliance.

2.3 Desk Study

Methodology

- 2.3.1 Statutory designated sites for nature conservation were identified using the Natural England/Defra web-based MAGIC map database (<http://magic.defra.gov.uk>). International-level sites such as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) within 5km from the Site were searched for. National-level sites such as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs) within 2km of the Site were searched for.
- 2.3.2 The Hertfordshire Environmental Records Centre (HERC) was consulted for records of protected species and species of conservation concern within 2km of the Site as part of a Preliminary Ecological Appraisal

⁵ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management. www.cieem.net



undertaken in April 2025. HERC was also asked to provide details of locally-designated and non-statutory sites for nature conservation within 2km of the Site.

- 2.3.3 Clarkson and Woods' own database of ecological records derived from past survey work was also consulted for further locally-relevant data.
- 2.3.4 The Natural England/Defra web-based MAGIC map database was also consulted for records of European Protected Species (EPS) licences issued for mitigation projects concerning EPS within 2km of the Site, as well as any priority habitats present onsite and within 2km of the Site.
- 2.3.5 The North Hertfordshire Local Plan 2011-2031 was consulted for details of planning policies relevant to designated sites, protected species and habitats, and general ecological and environmental protection.
- 2.3.6 The Local Biodiversity Action Plan (BAP) for Hertfordshire (2006), Hertfordshire's Ecological Network (2013) and Hertfordshire Local Nature Recovery Strategy (Draft; 2025) were consulted for information on conservation priority species and habitats which may require further consideration and weight within Ecological Impact Assessments.
- 2.3.7 Ordnance Survey maps (1:25,000) and aerial images of the Site were examined online (bing.com/maps and maps.google.co.uk) to allow a better understanding of the context of the Site and its connections to potentially important habitats, known species records and protected sites.
- 2.3.8 The data presented within this report constitutes a summary of the data obtained from the local records centre. Should additional detail be required on any of the records described within this report Clarkson and Woods Ltd. should be contacted.

Limitations

- 2.3.9 No specific limitations to the desk study were encountered.
- 2.3.10 The data presented within this report constitutes a summary of the data obtained from the local records centre. Should additional detail be required on any of the records described within this report Clarkson and Woods Ltd. should be contacted.
- 2.3.11 Data obtained from within the search area will not constitute a complete record of habitats and species present within the search area. It is therefore possible that protected species may occur within the vicinity of the proposed development site that have not been identified within the desk study.

Desk Study Findings

Designated Sites

Statutory Designated Sites

- 2.3.12 No internationally statutory designated sites were identified within 5km of the Site.
- 2.3.13 One nationally (Oughtonhead Lane Site of Special Scientific Interest) and one locally (Oughtonhead Common Local Nature reserve) designated site for nature conservation were identified within 2km of the Site and summarised in Table 1, overleaf. A map of these sites is available upon request.
- 2.3.14 The River Oughton flows downstream towards the east, thereby away from any watercourses present within the statutory designated sites. No construction or operational impacts are therefore considered likely. It is considered that the proposed development will have no adverse impacts upon the condition of the below sites, nor the species populations for which the sites are designated.



Table 1: Summary of Statutory Designated Sites for Nature Conservation

Site Name	Size, Distance and Direction from Site	Reason for Designation	Importance
Oughtonhead Lane Site of Special Scientific Interest (SSSI)	1ha, 1.5km SW of Site	This SSSI is recognised for its geological importance, interglacial tufa, fossil land snails and mammals.	National but beyond zone of influence
Oughtonhead Common Local Nature Reserve (LNR)	17.4ha, 240m SW of Site	This LNR comprises a range of habitats including wetland, grassland, woodland and scrub with River Oughton forming the northern boundary. These support a variety of bird species; water voles have been historically recorded along the river.	Local but beyond zone of influence

Non-statutory Designated Sites

- 2.3.15 Twelve non-statutory designated sites for nature conservation were identified within the desk study and are summarised in Table 2 below. A map of all sites is available from HERC upon request.
- 2.3.16 Oughtonhead LWS is located upstream of the Site and therefore any indirect effects are considered highly unlikely and scoped out of further assessment.
- 2.3.17 The boundaries of Westmill Lane, Ickleford LWS (c.180m west) are indicative to include a suitable area for foraging bats around a known roost (i.e. reason for its designation). The western area of the Site, closest to the LWS, have been retained as undeveloped along with a buffer adjacent to the southern boundary north of the river. Westmill Lane, Ickleford LWS is not directly connected to the Site via habitat networks, and is considered unlikely to be adversely impacted. It has therefore been scoped out from the assessment. Impacts on foraging and commuting bats in general are presented in Section 3.6.
- 2.3.18 All other designated sites are considered to be of a sufficient distance with a lack of connecting habitat to be unaffected by the proposals. All LWSs have therefore been scoped out of further assessment.

Table 2: Summary of Local and Non-statutory Designated Sites for Nature Conservation

Site Name and Ref.	Size, Distance and Direction from Site	Reason for Designation	Importance
Oughtonhead LWS - 11/001	25.3ha, 240m SW of Site	Consists of Oughtonhead Common LNR and Oughtonhead Herts and Middlesex Wildlife Trust Nature Reserve. This LWS is significant for harvest mouse <i>Micromys minutus</i> and water vole <i>Arvicola amphibius</i> .	Local
Westmill Lane, Ickleford LWS - 11/038	180m W of Site	Important for a range of species, including presence of a bat roost. Species and roost type unknown.	Local
Cadwell Marsh & Burymead Springs LWS - 11/023/01	11.9ha, 610m E of Site	Significant for its fen and swamp indicator species as well as presence of harvest mice and water vole.	Local
River Hiz, Ickleford North LWS - 11/039	16km long, 820m NE of Site	Presence of water voles.	Local
Cadwell Grove Meadows LWS - 11/015	4.5ha, 820m NE of Site	Presence of calcareous grassland indicators.	Local
Cadwell Crossing LWS - 11/017	930m NE of Site	Presence of Great Pignut (<i>Bunium bulbocastanum</i>), a Hertfordshire Vulnerable species.	Local



Site Name and Ref.	Size, Distance and Direction from Site	Reason for Designation	Importance
Remaining LWS are located to the northeast and mostly significant for calcareous grassland indicator species present and for water vole.			Local

Priority Habitats

- 2.3.19 Based on a review of Natural England's habitat inventory⁶, there are three parcels of deciduous woodland Priority Habitat within the red line boundary, with parcels of deciduous woodland, lowland meadows, traditional orchard, coastal and floodplain grazing marsh, lowland fen and reed beds within 2km of the development site. A map of these habitats is shown in Figure 3.

Hertfordshire Ecological Network (HEN)

- 2.3.20 Within the development boundary, five parcels of semi-natural broadleaved woodland were identified from the HEN assessment (D02154, D02156, D02157, D02159, D2829). This habitat is listed within S41 of the NERC act and, in accordance with the Guidance on Applying HEN within the Planning System (2014), these habitats are labelled category 1 habitats which should be avoided for development, protected and enhanced by the development management system. As per Figure 4 the woodland parcels included within this categorisation includes W1, part of W2, W3, the majority of W4, W5 and W6.
- 2.3.21 The extent of the development site which does not comprise of woodland is characterised as neutral grassland and recently felled woodland (D02158 and D02155 respectively), classified as category 2 habitats which although do not currently qualify under S41 of the NERC Act have been identified within the HEN as having high potential to do so. The HEN states that whilst not receiving the same level of statutory and policy-based protection as defined Priority Habitat, this area should be avoided by development and protected by the development management system where reasonable to do so. This is because these areas are deemed as important components of ecological networks. A map of the HEN habitats is available from HERC upon request, but cannot be published within the report due to copyright issues.

Hertfordshire Local Nature Recovery Strategy (LNRS)

- 2.3.22 The draft Hertfordshire LNRS identified areas of grassland and heathland habitats of different nature recovery priorities within the Site. The majority of the onsite grassland falls under Grassland 1 action: 'manage existing grassland and heathland to maintain the biodiversity of existing good quality habitats and enhance poor quality sites'. A small area also falls under the Grassland 3 action: to 'create more good quality neutral grassland'.
- 2.3.23 The LNRS did not return any actionable woodland habitats within the Site.
- 2.3.24 Screenshots of the relevant LNRS maps are included in Appendix C.

Local BAP

- 2.3.25 The Local Biodiversity Action Plan (BAP) for Hertfordshire (2006) outlines actions plans for the following priority habitats and species that have been identified as relevant to the Site

Habitats:

- Woodland
- Farmland
- Neutral grassland
- Chalk grassland
- Wetlands
- Urban

⁶ <https://magic.defra.gov.uk/>



Species:

- Water Vole
- Otter
- Natterer's Bat
- Common dormouse
- Song thrush
- Great-crested newt

Planning Policy

2.3.26 The following policies (Table 3) have been identified within the North Hertfordshire Local Plan (2011 to 2031), which are considered relevant to the Site.

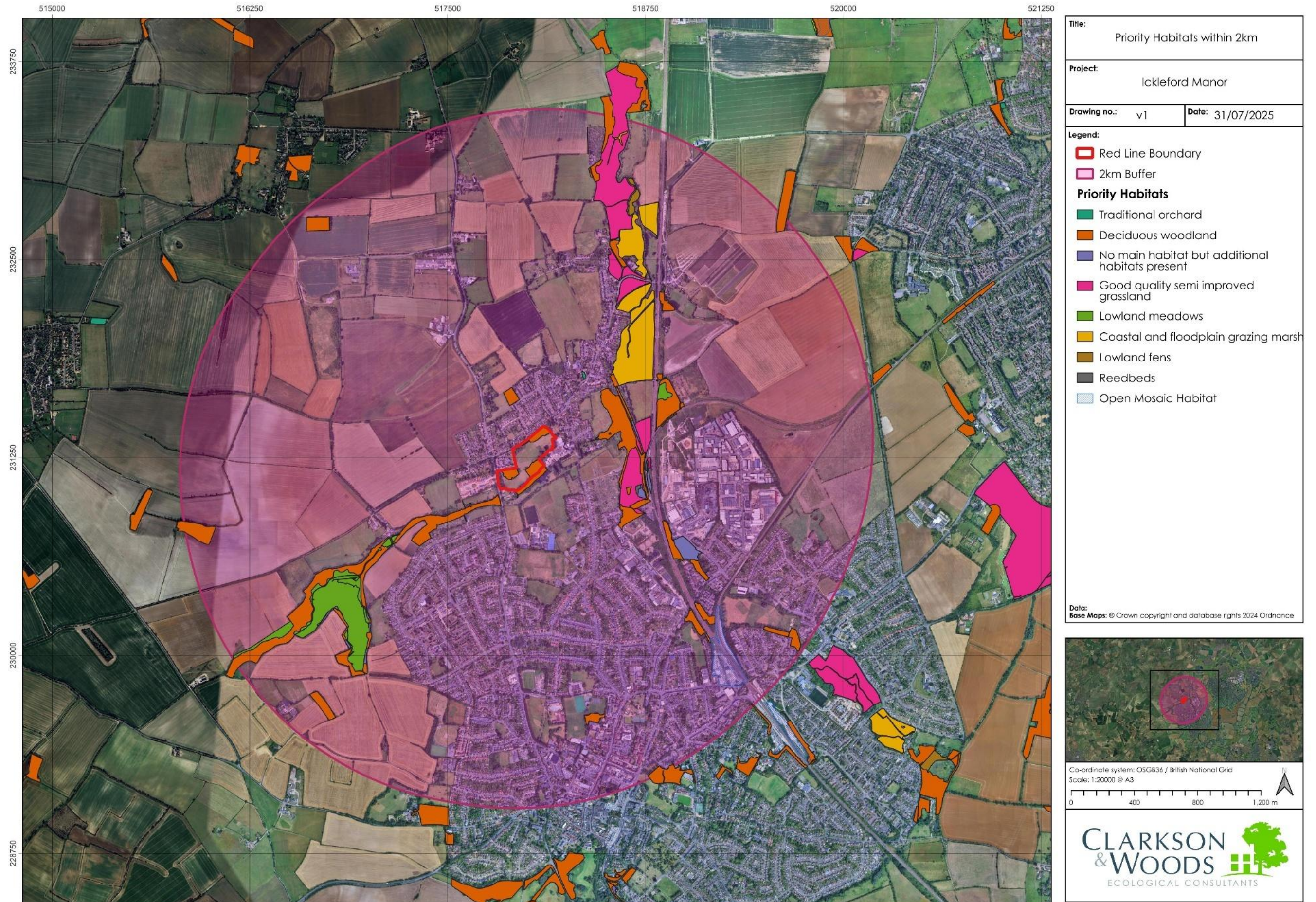


Figure 3: Map of Priority Habitats within 2km of the Site



Table 3: Relevant Policies Within the North Hertfordshire Local Plan

Policy	Key Details
Policy SP12: Green infrastructure, landscape and biodiversity	We will accommodate significant growth during the plan period whilst ensuring the natural environment is protected and enhanced. We will: a) Protect, identify, manage and where possible enhance a strategic multi-functional network of green infrastructure; b) Consider and respect landscape character, scenic beauty and locally sensitive features, particularly in relation to the Chilterns Area of Outstanding Natural Beauty; c) Protect, enhance and manage designated sites in accordance with the following hierarchy of designations and features: • Internationally designated sites • Nationally designated sites • Locally designated sites; • Non-designated sites that include important habitats and species a) Protect, enhance and manage biodiversity networks including wildlife corridors, ancient woodlands and hedgerows, wetland and riverine habitats, Local Geological Sites, protected species, priority species and habitats, and non-designated sites of ecological value and ensure measurable net gains for biodiversity; and b) Protect other open spaces and support provision of new and improved open space.
Policy NE2: Landscape	Planning permission will be granted for development proposals that: a) Respect the sensitivities of the relevant landscape character area and have regard to the guidelines identified for built development and landscape management; b) Do not cause unacceptable harm to the character and appearance of the surrounding area or the landscape character area in which the site is located, taking account of any suitable mitigation measures necessary to achieve this; c) Are designed and located to ensure the health and future retention of important landscape features; and d) Have considered the long-term management and maintenance of any existing and proposed landscaping.
Policy NE4: Biodiversity and geological sites	Planning permission will only be granted for development proposals that appropriately protect, enhance and manage biodiversity in accordance with the hierarchy and status of designations and features listed in Policy SP12. All development should deliver measurable net gains for biodiversity and geodiversity, contribute to ecological networks and the water environment, and/or restore degraded or isolated habitats where possible. Applicants should, having regard to the status of any affected site(s) or feature(s): a) Submit an ecological survey that is commensurate to the scale and location of the development and the likely impact on biodiversity, the legal protection or other status of the site; b) Demonstrate that adverse effects can be avoided and / or satisfactorily minimised having regard to the hierarchy of protection below: i. locating on an alternative site with a less harmful impact; ii. providing adequate mitigation measures; or iii. as a last resort compensated for. The acceptability of approach(es) to avoidance, mitigation and compensation will be commensurate with the status of the asset(s) likely to be affected by the application; Compensation is unlikely to be an appropriate solution for proposals affecting nationally or internationally designated sites other than in the most exceptional circumstances.



Policy	Key Details
	c) Include appropriate measures to manage construction impacts by demonstrating how existing wildlife habitats supporting protected or priority species will be retained, safeguarded and managed during construction; d) Integrate appropriate buffers of complimentary habitat for designated sites and other connective features, wildlife habitats, priority habitats and species into the ecological mitigation and design. The appropriateness of any buffers will be considered having regard to the status of the relevant habitat. 12 metres of complimentary habitat should be provided around wildlife sites (locally designated sites and above), trees and hedgerows. It may be necessary to exceed this distance for fragile habitats such as ancient woodland or to provide appropriate root protection for mature trees; and e) Provide a long-term management and monitoring plan including mitigation measures as necessary. Local Geological Sites are ratified by the Herts & Middlesex Wildlife Trust (HMWT) and are afforded the same protection as Local Wildlife Sites.
Policy NE5: Protecting open space	Planning permission will only be granted for any proposed loss of open space provided that: a) It can be demonstrated that the open space is surplus to requirements and justified on the basis of: - the quality and accessibility of the open space; - the extent to which the open space is serving its purpose; - the quality and accessibility of alternative public open space; and b) It is mitigated against by: - re-provision of an appropriate open space taking into account quality and accessibility; and/ or - financial contributions towards new or existing open space where: - the required provision cannot reasonably be delivered on-site; or - the required provision cannot be provided on site in full; and - the proposal has over-riding planning benefits.
Policy NE6: New and improved open space	Planning permission will be granted for development proposals that make provision for new and/or improved open space which: - Meets the needs arising from the development having regard to the Council's open space standards and other relevant guidance; - Contributes towards improving the provision, quality and accessibility of open space; and - Incorporate any necessary open space buffer(s) for landscape, visual, ecological or air quality reasons. Any on-site provision must include a long-term maintenance and management plan, and where required phasing plans, to demonstrate delivery. Any built facilities within new or existing open space must be ancillary to the primary use and of an appropriate scale and design. Measures should be taken to integrate such facilities into the landscape Proposals for new open spaces which meet identified needs will be encouraged in suitable locations, served by a choice of sustainable travel options. Financial contributions towards the provision of open space will be considered only where it can be demonstrated that the requirements of policy NE5 part (b)(ii) are met. Where a development is phased, or a site is either divided into separate parts or otherwise regarded as part of a larger development, it will be considered as a whole for the purposes of open space provision.



Policy	Key Details
Developer Contributions Supplementary Planning Document (Jan 2023)	Summary: Applicants will be required to demonstrate to the Council that all methods of avoidance have been fully explored and all new development should seek to deliver BNG on site within the red line application boundary. Whilst the Local Plan does not specify a target for BNG, the Council are taking a pro-active and masterplan led approach to strongly encouraging new developments to achieve a net gain for biodiversity of at least 10%. Preliminary Ecological Appraisals and Ecological Impact Assessments are required to contain a specific section entitled 'Biodiversity Net Gain' which must clearly show how the site has been assessed using the Biodiversity Metric (latest version). This will demonstrate the baseline habitat value of the site (pre-development) and the post development habitat value.



2.4 Habitat Survey

Habitat Survey Methodology

- 2.4.1 A habitat survey was carried out based on standard field methodology set out in the UK Habitat Classification System⁷ (UKHab). In order to inform a Biodiversity Net Gain baseline for the Site, habitat condition assessments were undertaken of each habitat during the field survey using the criteria set out within Defra's Statutory Biodiversity Metric⁸⁹. Each habitat was allocated a Poor, Moderate or Good habitat condition.
- 2.4.2 The results of the UKHab survey are included in map form on Figure 4 using UKHab symbology. Habitats are described in turn in this Section using the naming conventions of the UKHab system. Target Notes (Table 4) are used to describe habitats not readily conforming to recognised types and evidence of, or potential for, protected species and species of conservation concern. Photographs of the Site are provided in Appendix B at the end of this report.
- 2.4.3 Botanical names follow Stace (1997)¹⁰ for higher plants and Edwards (1999)¹¹ for bryophytes.
- 2.4.4 Quadrat data and detailed condition assessment for onsite habitats are presented in a separate Biodiversity Net Gain report¹² for the Site.

Grassland – Other Neutral Grassland

Desk Study Information

- 2.4.5 The Hertfordshire Ecological Network assessment classified the onsite grassland habitat as neutral grassland which provides potential enhancement opportunities to benefit the ecological network of the county. The Guidance on Applying HEN within the Planning System (2014) notes that where reasonable to do so, development of this habitat should be avoided and protected by the development management system.
- 2.4.6 The draft Hertfordshire LNRS indicated this habitat should be managed to maintain the biodiversity of existing good quality habitats and enhance poor quality sites.

Field Survey Results

- 2.4.7 The majority of the onsite habitat comprised of horse pasture (G2, G3, G5, G6; Figure 4 refer) with electric fence delineating the fields into multiple paddocks.
- 2.4.8 G2 and G5 were intensely grazed by horses leaving the grassland at short sward height and dominated by perennial rye *Lolium perenne*. Other graminoids and herbs species were present. Herbs primarily comprised low basal rosette forming species, including daisy *Bellis perennis*, cat's-ear *Hypochaeris radicata* and ribwort plantain *Plantago lanceolata*. There was also a higher abundance of less palatable species such as creeping buttercup *Ranunculus repens* and common ragwort *Senecio jacobaea*.
- 2.4.9 G3 and G6 were tussocky, absent of horse grazing and appeared to have less fertility than the grazed areas (G2 and G5). The lower management levels in these areas have resulted in dominance of species most likely found in unmanaged fields such as false oat grass *Arrhenatherum elatius*, cock's foot *Dactylis glomerata* and thistles *Cirsium* spp..
- 2.4.10 Species typical to calcareous grassland were recorded, such as lady's bedstraw *Galium verum* and common centaury *Centaurea erythraea*, however the relatively limited species assemblage was considered more akin to neutral grassland.

Evaluation

- 2.4.11 Given the potential benefits to improve ecological network between the wider landscape, Other Neutral Grassland is considered to be of **Local** importance.

⁷ UKHab Ltd (2023) *UK Habitat Classification System Version 2.0*. Available at: <https://ukhab.org>

⁸ Defra (2024). *The Statutory Biodiversity Metric: User Guide*. London

⁹ Defra (2024). *The Statutory Biodiversity Metric: Technical Appendix 1 – Condition Assessment Sheets and Methodology*. London

¹⁰ Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

¹¹ Edwards, S.R. (1999). *English Names for British Bryophytes*. BBS, Cardiff

¹² Biodiversity Net Gain – Ickleford Manor, Hitchin. Clarkson and Woods Ltd. July 2025.



Grassland – Modified Grassland

Field Survey Results

- 2.4.12 On certain edges of the Site boundary, patches of Modified Grassland were identified (G1 and G4; Figure 4 refer), where they appeared to have been managed by mowing to a uniform sward height. G1 had low botanical diversity, dominated by perennial rye, abundant red fescue *Festuca rubra*, and had occasional creeping bent *Agrostis stolonifera* and rough meadow grass *Poa trivialis*. G4 had a slightly wider assemblage of botanical species, including perennial rye, rough meadow grass, greater plantain *Plantago major* and daisy. Occasional species recorded comprised self-heal *Prunella vulgaris* and soft brome *Bromus hordeaceus*.

Evaluation

- 2.4.13 The modified grasslands were frequently mown and of low botanical interest, although these areas do provide habitat of limited suitability for foraging by a range of widespread wildlife. The modified grassland is considered to be of **Site** importance.

Woodland and Forest – Lowland Mixed Deciduous Woodland

Desk Study Information

- 2.4.14 Several parcels of woodland within the Site boundaries are listed on the 'Deciduous Woodland' priority habitat inventory. No ancient woodlands were recorded on Site after consulting the Natural England Ancient Woodland Inventory.
- 2.4.15 Several parcels of semi-natural broadleaved woodland were identified from the HEN assessment. This habitat is listed within S41 of the NERC act and should be avoided by development, protected and enhanced by the development management system.

Field Survey Results

- 2.4.16 Four areas of woodland were located on the boundaries of the Site, the majority which were classified as Lowland Mixed Deciduous Woodland. due to the abundance of ash *Fraxinus excelsior* and a suite of other species (W2, W4, W5, W6; Figure 4 refer).
- 2.4.17 These areas comprised standards of ash, hawthorn *Crataegus monogyna*, pedunculate oak *Quercus robur*, holly *Ilex aquifolium*, yew *Taxus baccata*, English elm *Ulmus procera*, and sycamore *Acer pseudoplatanus*. The ground flora consisted of dog's mercury *Mercurialis perennis*, ivy *Hedera helix*, wood meadow-grass *Poa nemoralis* and ground ivy *Glechoma hederacea*.
- 2.4.18 Each of the parcels were largely closed-canopied and formed <10ha in area. Evidence of browsing pressure by deer were noted across the parcels, resulting in sparse shrub layers. Ash dieback disease was also noted in small areas within all four parcels.
- 2.4.19 Within W5 and W6, small areas of cherry laurel *Prunus laurocerasus* (non-native invasive species) were recorded.

Evaluation

- 2.4.20 This habitat establishes over a long period of time, is of high intrinsic importance and is likely to support a range of wildlife. At a landscape scale and given its classification as a priority habitat, woodland is considered to be of **District** level ecological importance.

Woodland and Forest – Other Woodland; Broadleaved

Desk Study Information

- 2.4.21 Several parcels of semi-natural broadleaved woodland were identified from the HEN assessment. This habitat is listed within S41 of the NERC act and should be avoided by development, protected and enhanced by the development management system.

Field Survey Results

- 2.4.22 W1 and W3 (Figure 4 refer) consisted of limited woody species and were dominated by sycamore. Large piles of horse manure were noted within these areas, resulting in the prevalence of common nettle *Urtica dioica*.



Evaluation

- 2.4.23 Similar to the Lowland Mixed Deciduous Woodland, though not a priority habitat, this woodland habitat is of high conservation importance and likely to support a range of associated wildlife species and is therefore considered to be of **Local** importance.

Heathland and Shrub – Mixed Scrub

Field Survey Results

- 2.4.24 To the southeast of W4 parcel was a strip of mixed scrub habitat (S4; Figure 4 refer). Woody species recorded in this area mainly included elm *Ulmus* sp. and suckered with hawthorn *Crataegus monogyna* and bramble *Rubus fruticosus*.

Evaluation

- 2.4.25 The habitat has some suitability for nesting birds, amphibians including great crested newt (GCN), widespread reptiles, and mammals. However, the habitat is widespread within the local landscape and is not significant in extent, and is therefore considered to be of **Site** level importance.

Heathland and Shrub – Bramble Scrub

Field Survey Results

- 2.4.26 Patches of dense bramble scrub (S1, S2, S3, S5; Figure 4 refer) were present on the edge of the woodland parcels.

Evaluation

- 2.4.27 Similar to the Mixed Scrub habitat, this type of scrub was considered to be of **Site** importance.

Sparsely Vegetated Land – Tall Forbs

Field Survey Results

- 2.4.28 Pockets of tall forbs (O1-O3; Figure 4 refer) were present in G3, G5 And G6, where areas of the field were dominated by common nettle *Urtica dioica*. These habitats were located adjacent to existing woodland parcels.

Evaluation

- 2.4.29 The tall forb vegetation was considered to be of **Site** importance.

Individual Trees

Field Survey Results

- 2.4.30 Sixty-four native individual Rural Trees (52 small, 11 large and 1 very large) were present within the redline boundary. The 52 small trees were located to the east Site boundary, consisting European lime *Tilia × europaea*. The 11 large trees were located to the south of G6 and comprised English elm *Ulmus procera* and hazel *Corylus avellana*, birch *Betula* sp. and European lime. A very large single black walnut *Juglans regia* tree was located in to the south of G5.

Evaluation

- 2.4.31 Individual trees offer opportunities for nesting birds and roosting bats, thereby is considered to be of **Site** level importance.

Urban – Developed Land; Sealed Surface

Field Survey Results

- 2.4.32 Three currently used stables (B1-3; Figure 4 refer) are present in G2.

Evaluation

- 2.4.33 The Developed Land; Sealed Surface was considered to be of **Negligible** importance.



Urban – Artificial Unvegetated; Unsealed Surface

Field Survey Results

- 2.4.34 The south of G1 consisted unsealed gravel driveway for offsite residential houses (Ui; Figure 4 refer).

Evaluation

- 2.4.35 The Artificial Unvegetated; Unsealed Surface was considered to be of **Negligible** importance.

Hedgerow – Native Hedgerow with Trees

Desk Study Information

- 2.4.36 Hedgerows are habitats of principal importance under the NERC Act.

Field Survey Results

- 2.4.37 H1 (Figure 4 refer) was a defunct hedgerow associated with the garden of the off-site office building to the west. It was approximately 1m in height and average width of 3m, although gaps were present in the majority of the hedgerow.

- 2.4.38 It comprised of woody species hawthorn, holly and an unidentified species, including wild plum *Prunus domestica* and wild privet *Ligustrum vulgare* trees of the same age.

Evaluation

- 2.4.39 The hedgerow is suitable for nesting birds, bats in flight, amphibians, including great crested newt (GCN), invertebrates, widespread reptiles and mammals, and provide ecological connectivity between the woodland parcels. This linear feature is therefore considered to be of Local importance.

River

Desk Study Information

- 2.4.40 Watercourses should be protected and enhanced under Policy SP12 of the North Hertfordshire Local Plan.

Field Survey Results

- 2.4.41 A Modular River Physical survey was initially conducted prior to the reduction of the redline boundary (previously <10m between Site boundary and River Oughton); given the unlikely direct impacts from the current development proposal, detailed results of which are not reported but can be provided upon request.

- 2.4.42 Located 20m south from the southern Site boundary, River Oughton is a tributary river which runs west to east, continuing east and eventually into River Purwell.

- 2.4.43 Where the river runs south the Site, it started flowing from a weir built at the western-most point. The river itself is approximately 3m-4m wide with generally flat banks (certain parts were 1.0m-1.5m high). At the time of survey the river held approximately 50cm-100cm of water flowing towards the east of the Site. The banksides was largely vegetated by common nettle, cleavers *Galium aparine* and ivy, with areas of bare ground present. The river was largely overshadowed before expanding into a more open space to the east.

Evaluation

- 2.4.44 River Oughton provides habitat for a number of species including invertebrates, bats and potentially water vole, and connects to a wider network of rivers. This river is considered to be of **Local** importance.



Figure 4: Baseline Habitat and Species Plan



Table 4: Description of Target Notes (Figure 4 refers)

TN No.	Description
1	Area of small, self-seeded broadleaved trees. All <7.5cm DBH, and so are not included as individuals features with the BNG metric. Photo 9 in Appendix B refers.

2.5 Protected Species Survey and Species of Conservation Concern

Badger

Methodology

2.5.1 A search was made for badger *Meles meles* setts, and any sett entrances found were checked for signs of use by badgers or other mammals. Where found, setts were classified into the following categories: Main, Subsidiary, Annexe or Outlying¹³. Any sett entrances were counted and mapped to record tunnel direction and their relative level of usage.

2.5.2 Field signs such as 'snuffle holes' (holes dug by badgers when searching for invertebrates), pathways through vegetation, 'latrines' (small pits in which badgers deposit their faeces) and 'day nests' (nests of bedding material made by badgers for sleeping above ground) were also mapped, if found.

Limitations

2.5.3 Badgers may dig new holes and create new setts in a very short space of time.

Desk Study Information

2.5.4 Fifteen badger records were returned in the data search. The nearest sightings were two records within the Site (at a 1km grid reference accuracy) in 2019 and 2022, with the 2022 being the most recent record.

Field Survey Results

2.5.5 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

¹³ Lewns, P., Clarkson, T. & Lewns, D. (2019). *Badger Survey and Mitigation Guidelines (The Mammal Society Mitigation Guidance Series)*. Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London. (as yet unpublished)



Evaluation

- 2.5.7 Badgers are protected under the Protection of Badgers Act (1992). [REDACTED]

- 2.5.8 Badgers on Site are considered to be of **Local** level importance.

Bats

Methodology

- 2.5.9 The assessment of the suitability of the Site for foraging and roosting bats was based on current guidance set out by the Bat Conservation Trust¹⁴.

Buildings

- 2.5.10 The exteriors of the buildings were examined through the use of ladders, torches and binoculars (where appropriate) for Potential Roosting Features (PRFs). Extra factors taken into consideration included the potential for noise disturbance to the potential roost feature, exposure to the elements, lighting levels, proximity/connectivity of vegetation and water and whether these PRFs led on to cavities further into the structure.
- 2.5.11 Internally, all accessible parts of the building were entered where safe and possible to do so in order to describe their characteristics and to look for PRFs. A 1 million candle-power torch was used where necessary. Any signs of occupation including urine staining, prey remains, fur rubbing marks and droppings were noted where found.
- 2.5.12 Following the inspections, each building was assigned a 'High', 'Medium', 'Low' or 'Negligible' category as a guide to inform any necessary further survey effort; this is detailed in Table 8.
- 2.5.13 A single automated full spectrum bat detectors (SongMeter (SM) Mini) was deployed within the structure to record over at least five consecutive nights in July 2025. The detector was programmed to start recording 30 minutes before sunset and finishes 30 minutes after sunrise each day to determine the use of the building as a night roost. See Para 2.5.18 for analysis protocol.

Trees

- 2.5.14 An inspection of trees on Site was carried out from the ground, using binoculars, to record any signs of use of the tree by bat species. Features such as frost cracks, rot cavities, flush cuts, split or decaying limbs (including hazard beams), loose bark and dense plates of ivy were recorded where observed. Trees were assigned a category according to suitability of the features for roosting bats or need for further assessment (i.e. PRF-L, PRF-M or FAR) in accordance with the current survey guidelines; this is detailed in Table 3.

Habitat

- 2.5.15 The habitats within the Site were appraised for their suitability for use by foraging and commuting bats. In particular, the connectivity of the habitats on Site to those lying beyond was taken into account. Vegetated linear features are typically important for many species to navigate around the landscape, while the presence of woodland, scrub, gardens, grassland and wetland features increases a site's foraging resource value to bats. The potential for noise or lighting disturbance which may affect commuting links was also recorded.

Static Detector Survey

- 2.5.16 In order to establish the use of the Site by bats, four automated full spectrum bat detectors (SongMeter (SM) Mini) were deployed to record over at least five consecutive nights per month (May to October, inclusive). Between May to July 2025, bat activity was recorded for a total of 30 nights on Site. Deployments from the month August to October 2025 are scheduled and, once data has been collected and analysed, will be reported in an addendum to this EclA.

¹⁴ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1.

- 2.5.17 Detectors were located to focus on key habitat features and buildings with bat roosting potential identified during the walkover survey. The detectors were programmed to start recording 30 minutes before sunset until 30 minutes after sunrise. The deployment dates and details of weather conditions are given in Table 6 and the location of the detectors are shown on Figure 5.
- 2.5.18 Data downloaded from the static detectors was processed using Wildlife Acoustics' Kaleidoscope Pro automatic species recognition software. Subsequently the outputs from the automated analysis were manually verified using the Kaleidoscope software. Manual checks were made of all non-identified files and up to 10% of the noise files were examined to ensure significant numbers of bat calls had not been missed. Rare species were also manually checked to ensure these were correctly identified.



Figure 5: Static Bat Detector Locations

Table 6: Details of Static Detector Deployment

Date Deployed/Collected	Number of Detectors	No. of Nights Surveyed	Weather Conditions
01/05/2025 – 06/05/2025	4	5/5	Minimum overnight temp: 3-14°C Average wind: 3-14 mph (1-4 Bf)
28/05/2025 – 02/06/2025	4	5/5	Minimum overnight temp: 10-14°C Average wind: 7-15 mph (2-4 Bf)
17/06/2025 – 30/06/5025	4	13/13	Minimum overnight temp: 11-17°C Average wind: 5-17 mph (2-4 Bf)



Date Deployed/Collected	Number of Detectors	No. of Nights Surveyed	Weather Conditions
21/07/2025 – 28/07/2025	4	7/7	Minimum overnight temp: 12-14°C Average wind: 1-4 mph (1-2 Bf)
August – October	TBC	TBC	TBC

Nighttime Bat Walkover Survey

- 2.5.19 Nighttime bat walkover (NBW) surveys are being undertaken according to the Bat Conservation Trust's Bat Surveys: Good Practice Guidelines¹⁴ (2023) and involved static monitoring of bats followed by the walking of a transect by two surveyors considered by Clarkson and Woods to be competent to undertake the survey and experienced in the use of bat detectors and in carrying out bat activity surveys.
- 2.5.20 Surveys are to be undertaken once per season (spring, summer and autumn) and will be completed when weather conditions were suitable for bats to emerge and to feed, i.e. little or no rain, no strong wind and air temperatures above 8°C.
- 2.5.21 The spring and summer surveys were carried out by Bryan Tan (a qualifying member of CIEEM) and Mark Jermy. Bryan has over 2 years' experience undertaking ecological surveys and holds an MBiolSci in Zoology. Mark has 14 years' experience conducting ecological surveys and holds a Level 1 Natural England licence for the survey of bats (2024-12278-CL17-BAT). Both surveyors have been assessed under the Clarkson and Woods QA processes as competent to complete the survey.
- 2.5.22 Autumn survey will be undertaken, with the use of a night-vision aid (NVA) to facilitate in identifying the presence or likely absence of a bat roost in Building 1 during the first hour of the survey (Table 10 refer), with survey data analysed and reported in an addendum to this EclA.
- 2.5.23 The NBW survey included surveyors being positioned on potential flight lines close to potential roost sources at sunset, remaining in position to record commuting and foraging bats for up to an hour after sunset. The surveyors then commenced a transect route around the Site, walked at a slow pace until at least two hours after sunset. The transect route covered a variety of habitat features spread across the Site.
- 2.5.24 Surveyors documented the results by noting the time, bat species and behaviour onto pre-designed survey sheets and plans. Commuting bats and their direction of travel were easily observed immediately following sunset when light levels were high. As light levels dropped, observation of bat behaviour was often not possible and therefore behaviour such as: 'pass'; 'foraging'; or simply 'heard not seen' was recorded. Foraging was only recorded if feeding buzzes were heard or bats were observed catching or attempting to catch prey. Single bat passes were defined as bat calls that separated from other bat calls by at least one second.
- 2.5.25 Surveyors were equipped with handheld bat detectors Anabat Scout and Echo Meter Touch with an iPad Mini (Wildlife Acoustics), which feature integrated recorders. The survey recordings were later analysed on a computer using Kaleidoscope (Wildlife Acoustics) software to confirm or identify species. Table 7 below provides the dates, weather conditions, sunset times, survey start and end times for each of the NBW surveys.

Table 7: NBW Survey Details

Date	Surveyor	Survey Timings	Weather Conditions
19/05/2025	Bryan Tan & Mark Jermy	20:56 – 22:26	Start: 17°C, 0 Bf, 7 Okta End: 14°C, 1 Bf, 0 Okta
03/07/2025	Bryan Tan & Mark Jermy	21:23 – 23:23	Start: 19°C, 1 Bf, 1 Okta End: 17°C, 1 Bf, 0 Okta



Limitations

- 2.5.26 *Roost Inspections*: Not all features in trees or buildings suitable for use by bats are visible from the ground and there can be no external evidence of use of features by bats; consequently, it is only possible to make a best effort when carrying out such a survey.
- 2.5.27 Those trees which bounded the Site and were backed on to residential properties could not be fully assessed all the way around, although a best effort was made to assess as much of each tree as possible to reduce this limitation wherever possible.
- 2.5.28 *Bat Detecting Software and Equipment*: Bat detectors are known to be more sensitive to certain bat calls than to others for reasons such as varying bat call loudness and directionality of certain calls. For example, a call from a horseshoe bat is directional and a bat detector will only be able to record the call if the bat echo-locates directly at the detector whereas a common pipistrelle call is less directional and can be recorded even when the call is aimed away from the microphone. This can result in certain bat species (notably horseshoe bats and long-eared bats) being under-recorded due to the limitations of the current bat detectors. The difference in recording efficiency may therefore bias any results and this has been taken into account where possible during any assessment of the results.
- 2.5.29 Static detector data has been analysed using the latest Kaleidoscope Pro automated analysis software. This software has been specifically designed to automatically classify the known bat calls of Britain and Ireland.
- 2.5.30 The programme automatically identifies bat calls using various algorithms and provides statistical levels of confidence associated with each classified call. The confidence levels reflect the fact that there will be certain classification errors related to every classified bat call. With experience of using the software it appears that, on the whole, it is reliable when identifying certain bat calls (common and soprano pipistrelles, noctule, serotine, Leisler's, lesser and greater horseshoe bats) but less reliable when identifying other species (long-eared and barbastelle bat species).
- 2.5.31 The software does not distinguish between the various myotis species and simply classifies them to genus level (ie *Myotis* sp.). This is in line with classification that would be achieved by manual identification due to the similar nature of *Myotis* calls making species classification subject to a high degree of error.
- 2.5.32 Steps have been taken to compensate for the inherent under or over recording of some species; all records of barbastelle, myotis and long-eared species identified by the automated software have been manually verified and where appropriate the call identity corrected. The Kaleidoscope classifications have been presented unaltered but with the addition of a note (where applicable) below the data outlining the results of any manual verification/correction.
- 2.5.33 Where the software is unsure of a bat call, it will classify the call as 'NoID'. Where a relatively high number of calls are classified as NoID (more than 10% of a data set), these calls were also manually verified by an experienced ecologist. NoID results are included within this report.
- 2.5.34 In conclusion, the classification data produced from Kaleidoscope, along with any manual verification of certain problem/important species, is considered to provide an accurate record of the bat species recorded by a static bat detector and as such has been used with confidence within this report.
- 2.5.35 *Static Detector Survey*: Due to the timing of the commission of this work, bat detectors were deployed in early May rather than April (01/05/2025 – 06/05/2025). The weather conditions were, however, reflective of the preceding weeks of April and it was not considered that the slightly late timing of the survey constituted a limitation which prevents an accurate assessment of the importance of the site for foraging and commuting bats during early Spring.
- 2.5.36 Data for August – October is pending, and will be included in an addendum to this EclA once available.

Desk Study Information

- 2.5.37 There were over 100 records for bats returned in the data search, all within 2km of the Site, two of which were from the last ten years, only recording *Pipistrelle* sp.. Historical records were returned for common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, Natterer's *Myotis nattereri*, brown long-eared bat *Plecotus auritus* and Barbastelle bat *Barbastella barbastellus*.



- 2.5.38 The boundaries of Westmill Lane, Ickleford LWS are indicative to include a suitable area for foraging bats around a known roost (i.e. reason for its designation). Although the Site lies outside of this indicative range, suitable onsite habitats have the potential to support foraging/commuting bats from this LWS.
- 2.5.39 A Natterer's Bat species action plan is outlined in the Local BAP, in which Objective 2 highlights that roost sites, and suitable connecting and feeding habitats should be protected, enhanced and created. Mostly, Natterer's are found in old barns and buildings in Hertfordshire of which none are present within the Site.
- 2.5.40 Two Natural England EPS licences for bats have previously been granted within 2km of the Site as revealed using the MAGIC website (Table 8 refers).

Table 8: Granted EPS Licences for bats within 2km of the Site

Licence Ref.	Species	Dates	Impact	Distance & Direction from Site
EPSM2012-5071	Common pipistrelle	25/10/2012 – 31/07/2013	Destruction of resting place	200m W of Site
2016-21240-EPS-MIT	Soprano pipistrelle	20/03/2016 – 19/03/2021	Destruction of resting place	1.3km SW of Site

- 2.5.41 Ten of the 17 bats known to breed in the UK can be found in Hertfordshire. Another two species (Whiskered and Brandt's) have been recorded, but with very few records and so assumed to be rare. Table 9 provides a summary of bats species known in Hertfordshire.

Table 9: Assessment of Bat Species in Essex

Species	Rarity and Notes
Common Pipistrelle	Widespread, occasionally common. One of the two species most likely to be encountered and regularly seen at dusk around gardens.
Soprano Pipistrelle	Widespread, occasionally common. One of the two species most likely to be encountered and regularly seen at dusk around gardens.
Nathusius' Pipistrelle <i>P. Nathusii</i>	Widespread, but still considered scarce. Usually recorded foraging over large water bodies.
Brown Long-eared Bat	Widespread, relatively frequent. Not often encountered outside of roosts.
Daubenton's	Widespread, relatively frequent near still water.
Natterer's	Widespread, relatively scarce
Serotine	Widespread, but scarce
Leisler's <i>Nyctalus leisleri</i>	Widespread, but scarce
Noctule	Widespread, but relatively scarce
Barbastelle	Limited to a few wooded river valleys

Field Survey Results

Habitat

- 2.5.42 Habitats within the Site were considered to provide suitable foraging opportunities for bats; the grassland (subject to horse grazing) and scrub were likely to support a range of invertebrate prey.
- 2.5.43 The hedgerow and woodland areas bounding the Site form a network of linear features that extend into the wider landscape, which are considered likely to form commuting corridors for bats that may be using the Site and within the local area.

Buildings

- 2.5.44 The buildings on Site are described in Table 10 alongside an assessment of each building's potential to support roosting bats.
- 2.5.45 Building 2 and 3 cannot be ruled out for occasional use by individual bats; these structures were considered to have low suitability for night-roosting, individual void-dwelling bats e.g. brown long-eared bat. A static detector on Building 2 and 3 each was deployed in the summer months to confirm the presence or likely absence of roosting bats.

Table 10: Results of Building Inspections

Building Ref.	Description and Survey Evidence	Bat Roost Potential/ Assessment	Photo
1	Small, timber lean-to structure with slatted timber sides. Simple timber frame with no potential crevices. Corrugated tin roof affixed to timber lining. Potential crevice between layers, limited to approx. 1" high along the depth of the roof. Good condition. No evidence of use by bats.	Negligible. No further survey required.	
2	Pair of adjoining stables and detached tack room. All of same single-skin timber clad construction with unlined corrugated tin roof and modern timber frame. Full structure approx. 15m in length by 4m deep. Good condition throughout. No evidence of use by bats.	Negligible day roosting potential. Low Night roosting potential for non-crevice roosting species.	
3	Small lean-to structure. 3.25m by 3.5m. Single-skin timber clad structure with timber frame. No door or glazing. Open and uncluttered internally. No crevice features noted. Flat timber roof, unlined. No evidence of use by bats or other protected species.	Negligible day roosting potential. Low Night roosting potential non-crevice roosting species.	



- 2.5.46 A single static detector was deployed within Buildings 2 and 3 during the July static deployment for a period of eight days and seven nights and the results are summarised in Table 11. During the deployment, sunset times ranged between 21:06-20:56. Sunrise times ranged between 05:09-05:19. At least six species were recorded. The only non-crevice roosting species was long-eared (assumed brown due to species distribution). All other species were crevice roosting with calls considered to be recorded from outside the buildings. No long-eared calls were recorded in Building 2. A single brown long-eared bat call was recorded on all nights except 21st and 27th July (when no passes were recorded) in Building 3. All calls were in the middle of the night and did not correspond to emergence or return to roosting times. On one occasion two brown long-eared passes were recorded within 15 minutes of each pass (23rd July), although this data does not constitute evidence of foraging/night roosting. Bat roosts are therefore considered likely absent in Buildings 2 and 3.

Table 11: Static Detector Results for Stables

Building Ref.	Species Recorded					
	<i>Myotis sp.</i>	<i>Nyctalus sp.</i>	<i>C. pipistrelle</i>	<i>S. pipistrelle</i>	<i>Pipistrelle sp.</i>	Brown Long-eared
2	0	10	182	20	0	0
3	3	9	136	26	4	7

Trees

- 2.5.47 Three trees with bat roosting potential were recorded whilst on Site (T1-T3 on Figure 4 and Table 12 refer). Only the lime tree (T2; PRF-I) is proposed to be felled to facilitate the visibility splay of the new access entrance. This tree was unable to be fully surveyed from the ground due to the dense leaf canopy on the top half of the stem; however, from an initial inspection, appeared to be PRF-I¹⁵. An update GLTA will be carried out in autumn 2025 when visibility has improved to re-confirm the classification. Results will be provided within an updated version of this EcIA.
- 2.5.48 T1 and T3 and located inside existing woodland blocks and unaffected by the proposals from either direct or indirect impacts. No further surveys of these trees are therefore required. No other trees were noted to have potential features suitable for roosting by bats at the time of the survey.

Table 12: Trees with Bat Roosting Potential

Tree #	Species	Suitability	Description
T1	Crack willow	PRF – M	Several small knot holes 2cm diameter on crack willow <i>Salix Fragilis</i> tree. Rot hole 5cm diameter. Traverse snap and potentially hollow all the way to 2m from base.
T2	Lime	PRF – I	Dead branches at apex of European lime tree. Loose ivy covering. Stem leaf growth prevent inspection of upper half of tree. Further assessment required during autumn/winter when the leaves have fallen.
T3	Beech	PRF – M	Common beech <i>Fagus sylvatica</i> with 3 knot holes at 5, 7 & 8m. Bees noted nesting in top hole. 5-10cm diameter.

Static Detector Surveys

- 2.5.49 Table 13 and 14 below provide a detailed summary of the number of calls per species for each detector location during the static surveys.
- 2.5.50 The static detectors identified a total of 8339 bat passes (combined) over the 30 recording nights. This represents an average of 277.97 bat passes per night over the entire survey period.

¹⁵ PRF only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats



2.5.51 At least seven bat species were recorded during the static detector surveys. The *Nyctalus* sp., and *Myotis* sp. bats, whose calls are often too difficult to separate when analysing recordings, may comprise more than one species. The following (minimum) species were recorded during the surveys:

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Barbastelle *Barbastella barbastellus*
- *Myotis* bats *Myotis* sp. – an aggregation of common *Myotis* species is likely to include Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, Brandt's bat *Myotis brandtii* and whiskered bat *Myotis mystacinus*.
- *Nyctalus* bats – likely to include both noctule *Nyctalus noctula* and Leisler's bat *Nyctalus leisleri*.
- Serotine *Eptesicus serotinus*
- Brown long-eared bat *Plecotus auritus*

2.5.52 Four additional species were recorded during the static detector surveys that were not recorded during the NBW surveys. This includes rarer species such as barbastelle; the presence of this species, despite low numbers recorded at the time of writing the assessment, is considered significant given their elevated conservation concern.

Table 13: Summary of the data collected during the static detector surveys

Month	Location	Barbastelle	Serotine	Myotis sp.	Nyctalus sp.	Common pipistrelle	Soprano pipistrelle	Brown long-eared	Total Passes	
Early May 2025 5 nights	1	1	0	4	9	39	29	1	83	1328
	2	16	0	8	16	550	27	5	622	
	3	1	1	3	6	152	14	2	179	
	4	1	0	1	16	339	81	6	444	
Late May 2025 5 nights	1	11	0	1	10	525	71	3	621	1735
	2	8	0	13	16	422	31	15	505	
	3	1	0	2	21	309	20	0	353	
	4	2	0	6	36	146	64	2	256	
June 2025 13 nights	1	1	2	2	44	94	0	2	348	2577
	2	4	0	17	77	129	0	32	817	
	3	0	1	0	39	15	0	0	316	
	4	4	4	4	56	484	0	19	1096	
July 2025 7 nights	1	2	0	5	28	132	56	5	228	2699
	2	5	0	6	5	630	77	6	729	
	3	3	0	4	23	1003	27	6	1066	
	4	0	0	0	36	265	371	4	676	
August 2025	TBC									



Month	Location	Barbastelle	Serotine	Myotis sp.	Nyctalus sp.	Common pipistrelle	Soprano pipistrelle	Brown long-eared	Total Passes
September 2025	TBC								
October 2025	TBC								

Table 14: Average number of bat passes per night recorded by the static detectors per month

Species	Average number of bat passes per night per species					% of total passes
	Early May 2025	Late May/ Early June 2025	June 2025	July 2025	August – October 2025	
Barbastelle	3.8	4.4	0.7	1.4	TBC	0.72
Serotine	0.2	0	0.5	0	TBC	0.10
Myotis sp.	3.2	4.4	1.8	2.1	TBC	0.91
Nyctalus sp.	9.4	16.6	16.6	13.1	TBC	5.25
Common pipistrelle	216	280.4	119	290	TBC	72.66
Soprano pipistrelle	30.2	37.2	55.5	75.9	TBC	19.07
Brown long-eared	2.8	4	4.1	3	TBC	1.30
Total average no. passes	265.6	347	198.2	385.6	TBC	100%

Nighttime Bat Walkover Surveys

2.5.53 Table 15 below provides a summary of bat species and the total number of bat passes (foraging and commuting combined) recorded during the NBW surveys. The number of bat passes given is the combination recorded during the observation points and walked transects. Recorded bat flight patterns are shown in Figure 6 overleaf.

Table 15: Number of bat passes recorded during each NBW survey

Species	Month and number of bat passes recorded per species			
	May (Spring)	July (Summer)	September (Autumn)	Total
Nyctalus sp.	0	61	TBC	61
Common pipistrelle	10	18	TBC	28
Soprano pipistrelle	4	6	TBC	10
Total no. passes	14	85	TBC	99



Figure 6: Findings from Spring and Summer NBW Surveys

2.5.54 *Spring NBW survey*: Low levels of bat activity were recorded near boundary features i.e. hedgerow, scrub and woodland.

- Survey Point 1: A single common pipistrelle was heard but not seen (first bat recorded at 21:27).
- Survey Point 2: One common pipistrelle and one soprano pipistrelle were recorded foraging east of the offsite manor building (approx. two passes per bat).
- Survey Point 3: One common pipistrelle commuting south from the northern woodland to off site.
- Survey Point 4: One common pipistrelle was heard but not seen.
- Survey Point 5: One soprano pipistrelle was heard foraging but not seen (approx. two passes).
- Survey Point 6: One soprano pipistrelle was heard but not seen.
- Survey Point 7: One common pipistrelle was heard but not seen.
- Survey Point 8: One common pipistrelle was heard foraging but not seen (approx. two passes).

2.5.55 *Summer NBW survey*: Moderate bat activity level was recorded in similar features as before.

- Survey Point 2: One common pipistrelle and one soprano pipistrelle were recorded foraging east of the offsite manor building (approx. two passes per bat for first 30 minutes of survey).
- Survey Point 5: One *Nyctalus* sp. was heard foraging consistently above the southern woodland, with some commuting passes between the northern and southern woodland (approx. 2 passes).
- Survey Point 7: One *Nyctalus* sp. and one common pipistrelle were heard foraging but not seen (approx. 2 passes per species).

Evaluation

2.5.56 The following evaluations have been assessed based on the existing survey information. The importance of the Site for bats will be updated following the completion of the further surveys discussed.

2.5.57 *Roosting: Site* Importance, if present, due to presence of some potential roosting features within trees within RLB (although unaffected by the proposals)



- 2.5.58 **Activity:** Prior to completion of a full season's surveys, commuting and foraging bats were considered to be of **Local-District** Importance due to the diversity of species recorded within the Site, including those that are rare i.e. barbastelle. The importance of the site for foraging and commuting bats requires a full seasons data on activity levels and behaviour before firm conclusions can be drawn on the importance of the Site. This report will be updated once surveys are complete.

Otter and Water Vole

Methodology

- 2.5.59 A search was made along the banks of River Oughton and their adjacent habitats for otter *Lutra lutra* signs including spraints, tracks, castling, and rolling. The banks of any watercourses were searched for the presence or potential for holts or other sheltering areas.
- 2.5.60 The banks of the River Oughton were searched for water vole *Arvicola amphibius* signs including latrines, burrow entrances, feeding stations, 'runways' and footprints. Surveys and field recording followed the protocol set out within the Water Vole Mitigation Handbook¹⁶.
- 2.5.61 A survey was carried out on 29th May 2025 to coincide with the beginning of water vole breeding season (mid-April to the end of June) by Bryan Tan (a qualifying member of CIEEM) and James Gilbert CEnv MCIEEM. James has 20 years' experience undertaking ecological surveys and has an MSc in relevant subjects. Both surveyors have been assessed under the Clarkson and Woods QA processes as competent to complete the survey.
- 2.5.62 Water vole surveys typically comprise two survey visits at either end of the summer season. A second survey is therefore scheduled for September 2025, and results will be added to an addendum of this EclA.

Limitations

- 2.5.63 The majority of search results of otters from HERC were at 1km accuracy, reducing the accuracy of the distance between the otter records and the Site.
- 2.5.64 Otters have no defined breeding season and the breeding holt is kept deliberately obscure by the female so locating one can be difficult and time consuming.
- 2.5.65 The banks around less shaded section towards the east of the river was not surveyed due to the unsafe high water level.

Desk Study Information

- 2.5.66 Seventeen otter records were retrieved from HERC within the last 20 years; the most recent records were from 2022 at approx. 800m north of the Site, while the nearest records were 20m south of the Site in year 2008.
- 2.5.67 Two water vole records were returned from HERC within the last 20 years. These were recorded at Oughton Head (year 2012) and River Purwell, Walsworth Common (year 2005), both of which were >1.5km away from the Site.

Field Survey Results

- 2.5.68 No evidence of otters or their holts was found during any of the surveys. The river was nevertheless likely to provide transitional habitats for otters moving throughout the wider landscape. Along the river banks features such as overhanging trees, thick roots and dense woodland vegetation cover were present in places, potentially providing otters with suitable habitat for creating holts.
- 2.5.69 Possible footprints of water vole were recorded (TL 17946 31013, TL 18023 31062 and TL 18002 31082) during the survey, however on further assessment these were more attributed to that of a brown rat *Rattus norvegicus*. The habitat was considered to be sub-optimal containing (likely permanent) good depth of water levels, bank edges varying being flat up to 90 degrees; however the watercourse lacked suitable bankside and emergent vegetation was heavily shaded by overhanging trees, and had relatively fast water flow. Due to the lack of other evidence e.g. burrows and latrines.

¹⁶ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London.



Evaluation

- 2.5.70 The nearest otter records were located in River Oughton, albeit at a 1km grid reference accuracy. The river is likely to provide transitional habitats for otters moving throughout the wider landscape, although no evidence to date of their presence has been recorded. No impact to the river habitat will occur. Otters, if present, are therefore considered to potentially be of **Site** importance on Site.
- 2.5.71 Subject to the second survey findings, due to the presence of water vole to the west and east of the Site, suitable habitat in nearby Local Wildlife Sites, especially Oughton Head (the Wildlife Trust Nature Reserve) where the western portion of River Oughton is located, River Oughton forms an important link between the wider sites. However, the development proposals would unlikely result in adverse impacts to this species, therefore water vole is considered of **Site** importance, if present.

Dormouse

Desk Study Information

- 2.5.72 No records of dormice were returned by HERC within 2km of the Site or during a search of Clarkson and Woods own in-house records. No granted EPS licence applications were identified within at least 2km of the Site. Hertfordshire has historically low numbers of hazel dormouse with only scattered populations recorded. The Hazel Dormouse Conservation Handbook (Third Edition)¹⁷ has also indicated that this species is likely to currently be absent in Hertfordshire (2024), although the species is known to be under-recorded generally.

Field Survey Results

- 2.5.73 Although the habitats present on site, namely the hedgerow, woodland and scrub areas, may be suitable for foraging and nesting dormouse, it was considered likely that dormouse is absent from the Site due to its rarity in Hertfordshire, and the lack of connectivity between the patches of woodland on site with the wider network of suitable habitat. This species is therefore not considered further in this impact assessment.

Evaluation

- 2.5.74 Dormouse was considered to be of **Negligible** importance.

Amphibians

Methods

- 2.5.75 All waterbodies within 500m of the Site were identified using Ordnance Survey maps and aerial imagery. Waterbodies within the Site ownership and on publicly accessible land were assessed during the field survey for their suitability to support amphibian species where access was possible.
- 2.5.76 Where suitable water bodies were identified on accessible land a Habitat Suitability Index (HSI) score was calculated for each one following the methodology described by Oldham et al¹⁸. HSI scores give a relative indication of the likelihood that a water body would support breeding great crested newts. Factors which increase these scores include the presence of other ponds nearby, water quality, pond size, absence of fish/waterfowl, vegetation cover and shading.
- 2.5.77 GCN eDNA surveys of accessible ponds within 250m of the Site were undertaken during the optimal survey window (mid-April to June) to determine the presence/likely absence of GCN. Surveys were carried out following best practice as outlined in the DEFRA Project WC0167 and kits supplied by, and samples submitted for analysis to, ADAS. The survey was carried out on 18th June 2025 by Charlie Durigan ACIEEM assisted by Holly Chapman-White..
- 2.5.78 Terrestrial habitats were also assessed for their suitability for foraging and sheltering GCN and other amphibians. These species require habitats such as grassland, scrub, woodland and hedgerows for dispersal, shelter and hibernation. Further hibernation features include buried rubble and logs, or mammal burrows.

¹⁷ Bullion, S., Wolton, R. & White, I. (2025) *Hazel Dormouse Conservation Handbook – Third edition*. The Mammal Society. ISBN: 978-1-0687982-3-8

Limitations

- 2.5.79 Aside from Pond 1 and 3, all other ponds within 250m were not surveyed due to lack of access permission.
- 2.5.80 eDNA results for the water sample obtained from P1 were returned as indeterminate. There are a number of reasons why this may occur, however, in this instance, it is thought most likely to be attributable to the very low water levels at the time of survey. The water was >10cm in depth in the centre of the waterbody, however, due to the large drawdown area of the pond, the soft ground made collecting samples very difficult and resulted in a high sediment content in the water sample despite following best practice to avoid this.

Desk Study Information

- 2.5.81 No GCN records were returned in the last 20 years within 2km of the Site.
- 2.5.82 The Site is located in a GCN District Level Licencing (DLL) area administered by Natural England. The Site falls within a Green Risk Zone.
- 2.5.83 Within the last 20 years, six records of common toad *Bufo bufo* were recorded, with the nearest and most record 760m east of the Site, near River Hiz, in 2021.

Field Survey Results

- 2.5.84 Four ponds were identified within 250m of the Site during the desk study, with a further three ponds between 250-500m from the Site. The locations of these waterbodies are shown in Figure 7.
- 2.5.85 HSI scores were calculated for each of the surveyed waterbodies, and samples for eDNA surveys were obtained from the offsite ponds. A description of each waterbody, HSI scores and eDNA survey results are provided in Table 16 below.

Table 16: Description of Waterbodies, HSI Scores and eDNA Results

Waterbody No.	Description & HSI Score	eDNA Result	Photograph
P1	P1 was >2000m² in size, rarely dries completely, and was largely shaded by the adjacent woodland. The pond was a flooded section of the River Oughton, to which it was connected up and downstream, creating a flow through the pond. The pond comprised few macrophytes. At the time of eDNA survey, the water level was very low due to persistent dry weather, and so <20% shore area was surveyed. HSI Score: 0.69 (average) Distance from Site: 50m	Indeterminate	
P3	P4 was unlined, and approximately 1400m² in size. The pond was considered unlikely to dry, was surrounded by woodland and scrub. HSI Score: 0.77 (good) Distance from Site: 220m	GCN absent	

- 2.5.86 Of the two off-site ponds sampled, one returned negative (P3) and one was indeterminate (P1) for GCN eDNA. A copy of the detailed results provided by ADAS is available from Clarkson and Woods on request. The indeterminate pond, which was likely attributable to the low water levels (Paragraph 2.5.80 refers), was generally considered unlikely to support breeding GCN due to the lack of aquatic vegetation suitable for



egg laying and the connectivity with the River Oughton, which created a consistent flow of water through the pond. However, GCN cannot be completely ruled out from this waterbody as the flow was not considered fast enough to present a significant barrier to GCN movement, and suitable breeding habitat may be present around the peripheries of the pond during wetter years.

- 2.5.87 Terrestrial habitat within the Site was considered to be of varied suitability for GCN, and other common amphibian species. Grazed fields offered limited suitable habitat, with hedgerow bases, rough grass and scrub providing greater value sheltering opportunities.
- 2.5.88 Tadpoles (either from common toad or frog) were found within a small puddle underneath an uprooted yew tree (TL 18013 31079), although the species was not determined.

Evaluation

- 2.5.89 The habitats within the redline boundary are suitable for the presence of GCN and other amphibians such as common toad, for which recent records were returned.
- 2.5.90 Given the lack of waterbodies present on Site, breeding widespread amphibians, such as common toad, were assessed as being of **Site** importance.
- 2.5.91 Although no recent records of GCN have been provided within 2km of the Site, the Site is located within a Green DLL Risk Zone, and given the lack of highly suitable breeding habitat within close proximity to the Site, GCN are highly unlikely to be present within the Site, although cannot be completely ruled out. If present, GCN would be of **Local** importance.

Reptiles

Methods

- 2.5.92 An assessment of the Site identified potential for reptiles to be present with further reptile surveys considered necessary.
- 2.5.93 A total of 50 artificial refuges comprising 0.5m x 0.5m squares of roofing felt and corrugated tin sheets were deployed around the margins of the Site in habitats suitable for basking reptiles and in areas least likely to be disturbed. These materials rapidly heat up in even in relatively low levels of sun to temperatures higher than the current ambient or ground temperatures: making them attractive to basking reptiles. The function of these artificial refuges was to provide discrete areas for basking so that reptiles may be recorded more efficiently.
- 2.5.94 Refuges were deployed across the Site on 1st May 2025 and subsequently allowed to 'bed in' for at least 14 days so that reptiles could become accustomed to their presence, locate and use them. Figure 8 shows the location of refugia deployed.
- 2.5.95 Seven survey visits were then conducted between 19/05/2025 and 03/07/2025. During the survey visits, experienced and trained surveyors carefully inspected all refuges, walking slowly between refuges to avoid disturbing reptiles prior to checking them. Surveys were only carried out during suitable weather conditions (mostly dry and between 9 - 18°C) in accordance with best practice guidelines. This methodology is in line with the Froglife Reptile Survey Guidance (1999) and the Herpetofauna Workers' Manual.

Table 17: Reptile Survey Dates, Personnel and Weather Conditions

Survey No.	Survey Date	Surveyor	Weather Conditions	Timings
1	19/05/2025	Bryan Tan	Temp = 17°C; Wind = 3-2 Bf; Cloud = 7 Okta; Dry	14:45 – 15:45
2	20/05/2025	Bryan Tan	Temp = 14-16°C; Wind = 1 Bf; Cloud = 1 Okta; Dry	10:00 – 11:00
3	23/05/2025	James Gilbert	Temp = 13-15°C; Wind = 2 Bf; Cloud = 4-3 Okta; Dry	10:10 – 11:10
4	28/05/2025	Bryan Tan	Temp = 15°C; Wind = 2 Bf; Cloud = 4 Okta; Dry	10:15 – 11:15
5	29/05/2025	Bryan Tan	Temp = 17°C; Wind = 3 Bf; Cloud = 3 Okta; Dry	10:30 – 11:30
6	02/06/2025	James Gilbert	Temp = 16-17°C; Wind = 3 Bf; Cloud = 4 Okta; Dry	10:50 – 11:45
7	03/07/2025	Bryan Tan	Temp = 14-17°C; Wind = 0-1 Bf; Cloud = 0 Okta; Dry	08:00 – 09:45

Limitations

- 2.5.96 During the surveys, only a single refugia (<10%) was lost/not found.



Desk Study Information

- 2.5.97 Within the last 20 years, HERC has returned four records for common lizard *Zootoca vivipara* (nearest record at 500m east along the River Hiz) and 16 records for slow worm (with the majority of records located 1.8km south within a residential area). Five historical records of adder *Vipera berus* were also returned by HERC,
- 2.5.98 Recent surveys conducted by Skilled Ecology Consultancy Ltd. to inform a planning application submission for Land Adjacent to Turnpike Lane (Ref.: 23/02650/FP), located immediately east of the Site, did not record any reptiles across seven visits¹⁹.

Field Survey Results

- 2.5.99 During the initial ecological walkover survey, the majority of habitats on Site were considered to be suitable for reptiles. The horse-grazed fields provided sub-optimal habitat; however, the unmanaged and tussocky areas of these fields were considered more suitable. The scrub, tall forbs, hedgerow and woodlands offered further reptile habitat.
- 2.5.100 Manure heaps found within the Site offer suitable egg-laying sites for grass snake, if present.
- 2.5.101 Across the seven refugia checks, no reptiles were recorded within the Site, which is considered sufficient to assume likely absence.

Evaluation

- 2.5.102 Given the onsite habitats and offsite River Oughton are suitable for more mobile species e.g. common lizard and grass snake, therefore less likely to be recorded using the deployed refugia. Although unlikely, if present reptiles are considered to be of no more than **Site** importance.

¹⁹ Reptile Survey Report for Land Adjacent to Turnpike Lane, Manor Close, Ickleford. SG5 3XB (November 2022) Skilled Ecology Consultancy Ltd.



Figure 7: Ponds identified within 500m of the Site Boundary



Figure 8: Reptile Survey – Refugia Locations



Birds

2.5.103 Vegetation on Site was surveyed for signs of use by nesting birds and any birds seen or heard during the survey were noted. The Site's potential to support bird species of particular conservation concern (i.e. Schedule 1, NERC S41 and Red List species) was assessed, taking into consideration the bird species assemblage observed during the survey, the habitats present on and around the Site, the context of the Site in the wider landscape and the results of the desk study. Based on the initial Site assessment, two scoping breeding bird surveys were recommended.

Breeding Bird Surveys

2.5.104 The breeding bird surveys were undertaken by James Gilbert CEnv MCIEEM.

2.5.105 Two scoping breeding bird surveys were undertaken in May and June 2025. Survey timings, weather conditions and personnel are described in Table 18 below.

Table 18: Breeding bird survey dates, personnel and weather conditions

Survey No.	Date	Surveyors	Time	Weather Conditions
1	20/05/2025	James Gilbert	06:06 – 07:16	7°C, dry and calm with good visibility. Damp underfoot.
2	05/06/2025	James Gilbert	05:30 - 06:40	12°C, overcast with a gentle breeze and spitting rain. Visibility moderate.

2.5.106 The purpose of the surveys was to record the bird species present, their abundance and breeding status, assess the likelihood that an important breeding bird assemblage was present, and determine the need for further survey. No further surveys beyond the initial scoping surveys were undertaken during the breeding survey season; a full suite of breeding bird surveys was not deemed necessary due to the low level of bird activity recorded during the scoping surveys.

2.5.107 The survey methodology followed British Trust for Ornithology (BTO) Common Birds Census (CBC) guidelines and emerging survey guidelines. The surveyor walked through the survey area, ensuring that all points were visited to within 50m. The location, abundance and behaviour of all birds and flocks of birds seen were noted on large-scale survey maps. Standard BTO CBC symbology and species codes were used to record species, abundance and behaviour. The surveyor was equipped with binoculars to aid identification.

Limitations

2.5.108 Weather conditions during the second survey were slightly suboptimal, with spitting rain throughout the survey. This may have reduced bird activity during the visit, where birds sought shelter. However, the survey methodology ensures each location is visited to within 50m and the majority of birds should therefore have been recorded, as suggested by the recorded assemblage of species being similar in both surveys.

2.5.109 The bird surveys provide only a series of 'snapshots' of bird activity recorded on the Site. It takes no account of any species which might occur at other times of the day and on other days. Similarly, a lack of signs of any particular species does not confirm its absence, merely that there was no indication of its presence during this survey.

Desk Study Information

The data search returned over 47,000 records for birds within the last 10 years, within 2km of the Site. Of these, 46 are recognised by the British Trust for Ornithology (BTO) as Red/Amber listed species of conservation concern, 19 are Species of Principal Importance (SPI), and 13 are listed as Schedule 1 birds. The styling for Tables 18 and 20 is provided in Table 19.



Table 19: Bird Species Records Returned within 2km of the Sites

Common Name	Scientific Name	Common Name	Scientific Name
Barn owl 1	<i>Tyto alba</i>	Moorhen	<i>Gallinula chloropus</i>
Barnacle goose	<i>Branta leucopsis</i>	Mute swan	<i>Cygnus olor</i>
Black-headed gull	<i>Chroicocephalus ridibundus</i>	Moorhen	<i>Gallinula chloropus</i>
<u>Black-tailed godwit</u> 1	<i>Limosa limosa</i>	Mute swan	<i>Cygnus olor</i>
Blue tit	<i>Cyanistes caeruleus</i>	Nightingale	<i>Luscinia megarhynchos</i>
Brambling 1	<i>Fringilla montifringilla</i>	Nuthatch	<i>Sitta europaea</i>
<u>Bullfinch</u>	<i>Pyrrhula pyrrhula</i>	Oystercatcher	<i>Haematopus ostralegus</i>
Buzzard	<i>Buteo buteo</i>	Peregrine 1	<i>Falco peregrinus</i>
Canada goose	<i>Branta canadensis</i>	Pied flycatcher	<i>Ficedula hypoleuca</i>
Cetti's warbler 1	<i>Cettia cetti</i>	Pied wagtail	<i>Motacilla alba</i>
Coal tit	<i>Periparus ater</i>	Pintail 1	<i>Anas acuta</i>
Common gull	<i>Larus canus</i>	Quail 1	<i>Coturnix coturnix</i>
Common tern	<i>Sterna hirundo</i>	Red kite 1	<i>Milvus milvus</i>
<u>Corn bunting</u>	<i>Miliaria calandra</i>	Redstart	<i>Phoenicurus phoenicurus</i>
<u>Cuckoo</u>	<i>Cuculus canorus</i>	Redwing 1	<i>Turdus iliacus</i>
<u>Dunnoch</u>	<i>Prunella modularis</i>	<u>Reed bunting</u>	<i>Emberiza schoeniclus</i>
Fieldfare 1	<i>Turdus pilaris</i>	<u>Ring ouzel</u>	<i>Turdus torquatus</i>
Firecrest 1	<i>Regulus ignicapillus</i>	Ring-necked parakeet	<i>Psittacula krameri</i>
Gadwall	<i>Mareca strepera</i>	Robin	<i>Erithacus rubecula</i>
Goldcrest	<i>Regulus regulus</i>	Rook	<i>Corvus frugilegus</i>
Golden plover	<i>Pluvialis apricaria</i>	Sand martin	<i>Riparia riparia</i>
Goldfinch	<i>Carduelis carduelis</i>	Sedge warbler	<i>Acrocephalus schoenobaenus</i>
<u>Grasshopper warbler</u>	<i>Locustella naevia</i>	Short-eared owl	<i>Asio flammeus</i>
Great black-backed gull	<i>Larus marinus</i>	Shoveler	<i>Anas clypeata</i>
Great grey shrike	<i>Lanius excubitor</i>	Siskin	<i>Carduelis spinus</i>
Great spotted woodpecker	<i>Dendrocopos major</i>	<u>Skylark</u>	<i>Alauda arvensis</i>
Great tit	<i>Parus major</i>	Snipe	<i>Gallinago gallinago</i>
Green sandpiper 1	<i>Tringa ochropus</i>	<u>Song thrush</u>	<i>Turdus philomelos</i>



Common Name	Scientific Name	Common Name	Scientific Name
Green woodpecker	<i>Picus viridis</i>	Sparrowhawk	<i>Accipiter nisus</i>
Greenfinch	<i>Carduelis chloris</i>	<u>Spotted flycatcher</u>	<i>Muscicapa striata</i>
Grey heron	<i>Ardea cinerea</i>	<u>Starling</u>	<i>Sturnus vulgaris</i>
<u>Grey partridge</u>	<i>Perdix perdix</i>	Stock dove	<i>Columba oenas</i>
Grey plover	<i>Pluvialis squatarola</i>	Swallow	<i>Hirundo rustica</i>
Grey wagtail	<i>Motacilla cinerea</i>	Swift	<i>Apus apus</i>
Greylag goose	<i>Anser anser</i>	Tawny owl	<i>Strix aluco</i>
<u>Hawfinch</u>	<i>Coccothraustes coccothraustes</i>	Teal	<i>Anas crecca</i>
<u>Hen harrier 1</u>	<i>Circus cyaneus</i>	<u>Tree sparrow</u>	<i>Passer montanus</i>
<u>Herring gull</u>	<i>Larus argentatus</i>	Treecreeper	<i>Certhia familiaris</i>
Hobby 1	<i>Falco subbuteo</i>	Tufted duck	<i>Aythya fuligula</i>
House martin	<i>Delichon urbica</i>	<u>Turtle dove</u>	<i>Streptopelia turtur</i>
Kestrel	<i>Falco tinnunculus</i>	Water rail	<i>Rallus aquaticus</i>
Kingfisher 1	<i>Alcedo atthis</i>	Waxwing	<i>Bombycilla garrulus</i>
<u>Lapwing</u>	<i>Vanellus vanellus</i>	Wheatear	<i>Oenanthe oenanthe</i>
Lesser black-backed gull	<i>Larus fuscus</i>	Whinchat	<i>Saxicola rubetra</i>
<u>Lesser redpoll</u>	<i>Carduelis cabaret</i>	White stork	<i>Ciconia ciconia</i>
<u>Lesser spotted woodpecker</u>	<i>Dendrocopos minor</i>	Whitethroat	<i>Sylvia communis</i>
<u>Linnet</u>	<i>Carduelis cannabina</i>	Wigeon	<i>Mareca penelope</i>
Little egret	<i>Egretta garzetta</i>	Willow warbler	<i>Phylloscopus trochilus</i>
Little owl	<i>Athene noctua</i>	Woodcock	<i>Scolopax rusticola</i>
Mallard	<i>Anas platyrhynchos</i>	Woodpigeon	<i>Columba palumbus</i>
Manx shearwater	<i>Puffinus puffinus</i>	Wren	<i>Troglodytes troglodytes</i>
Meadow pipit	<i>Anthus pratensis</i>	Wryneck 1	<i>Jynx torquilla</i>
Mediterranean gull 1	<i>Larus melanocephalus</i>	<u>Yellow wagtail</u>	<i>Motacilla flava</i>
Merlin 1	<i>Falco columbarius</i>	<u>Yellowhammer</u>	<i>Emberiza citrinella</i>
Mistle thrush	<i>Turdus viscivorus</i>		

**Table 20: Key for styling in Tables 18 & 20**

Style	Meaning
<u>Underline</u>	Listed under Section 41 of the NERC Act 2006 (Species of Principal Importance - SPIs) or UK Biodiversity Action Plan species
1	Listed under Schedule 1 species under the Wildlife and Countryside Act 1981 (as amended)
Red fill	'Red listed' species according to BTO/RSPB Birds of Conservation Concern 2021
Orange fill	'Amber listed' species according to BTO/RSPB Birds of Conservation Concern 2021
Y	Breeding confirmed (nests located or adults with food/nest material, or fledglings seen)
Pr	Breeding probable
Po	Breeding possible
N	Not likely to breed on Site

Field Survey Results

Habitat Assessment

2.5.110 Overall, the habitats within the Site were considered to be suboptimal for a variety of bird species. The grassland habitats on Site was considered to offer very limited potential for ground-nesting species such as skylark due to the largely close-cropped structure of the sward (resulting from grazing pressure from livestock), and the open fields being surrounded by tall trees, which reduces sightlines for ground nesting birds to monitor for predators. The hedgerows, scrub and trees also provide foraging and nesting opportunities for a range of species typical of urban and agricultural habitats.

Incidental Records

2.5.111 Incidental records of nesting birds were recorded outside of breeding bird surveys (see Figure 4). An old woodpigeon nest was recorded to the north of W4, and sand martin nests (with chicks inside) were recorded at the offsite portion of W5.

Breeding Bird Survey

2.5.112 The results of the breeding bird surveys are displayed in Table 21 below. Visit(s) that recorded the higher peak count for each species were highlighted. Breeding status for each species was assessed based on the species' typical habitat preference and recorded activity during the surveys.

Table 21: Bird Species Recorded During the Field Survey

Common name	Latin name	V1	V2	Breeding Status
Blackbird	<i>Turdus merula</i>	9	1	Pr
Blackcap	<i>Sylvia atricapilla</i>	4	5	Pr
Blue Tit	<i>Cyanistes caeruleus</i>	2	2	Y
Carrion Crow	<i>Corvus corone</i>	1	1	Po
Chiffchaff	<i>Phylloscopus collybita</i>		1	Pr
Collared Dove	<i>Streptopelia decaocto</i>		2	Po
<u>Cuckoo</u>	<u><i>Cuculus canorus</i></u>		1	Po
<u>Dunnoek</u>	<u><i>Prunella modularis</i></u>	1	1	Pr



Common name	Latin name	V1	V2	Breeding Status
Goldcrest	<i>Regulus regulus</i>	1		Po
Great Spotted Woodpecker	<i>Dendrocopos major</i>	2		Po
Great Tit	<i>Parus major</i>	1	2	Pr
Grey Heron	<i>Ardea cinerea</i>	1		Po
Jackdaw	<i>Corvus monedula</i>	14	4	Y
Long-tailed Tit	<i>Aegithalos caudatus</i>		1	Po
Magpie	<i>Pica pica</i>		1	Po
Mallard	<i>Anas platyrhynchos</i>		1	Po
<u>Marsh Tit</u>	<u><i>Poecile palustris</i></u>	2	1	Pr
Pheasant	<i>Phasianus colchicus</i>	1	2	Po
Red Kite 1	<i>Milvus milvus</i>		1	Po
Robin	<i>Erithacus rubecula</i>	3	5	Pr
<u>Song Thrush</u>	<u><i>Turdus philomelos</i></u>	6	5	Pr
<u>Starling</u>	<u><i>Sturnus vulgaris</i></u>	1	1	Po
Stock Dove	<i>Columba oenas</i>	1		Po
Swallow	<i>Hirundo rustica</i>	2		Po
Whitethroat	<i>Sylvia communis</i>	2	1	Pr
Woodpigeon	<i>Columba palumbus</i>	19	5	Pr
Wren	<i>Troglodytes troglodytes</i>	9	5	Pr

2.5.113 In total, 27 bird species were recorded during the two survey visits; the breeding bird assemblage within the Site was considered to be of low diversity. Of the species recorded, ten are recognised by the British Trust for Ornithology (BTO) as Red/Amber listed Species of Conservation Concern (SoCC), four is a Species of Principal Importance (SPI) and one is listed as Schedule 1 species. Species comprised those typically recorded within grassland and hedgerow habitats in urban/suburban locations.

2.5.114 Species were typically recorded in low numbers, with mostly only individual birds recorded. The majority of bird species recorded were associated with the boundary habitats within the Site. The distribution of birds within the woodland boundaries was relatively well spread across the different parcels of woodland.

2.5.115 A red kite, listed as Schedule 1 species, was recorded flying over the Site during the second survey.

2.5.116 The breeding bird assemblage recorded was low and comprised largely common and widespread species associated with woodlands in urban and suburban habitats. No ground nesting birds were recorded within the Site, with the exception of a single pheasant, and the majority of species were associated with boundary features on both surveys.

Evaluation

2.5.117 Based on the generally low numbers of birds recorded overall, no further dedicated breeding bird surveys were considered to be necessary based on the findings of the scoping surveys.



2.5.118 The bird species associated with the Site are considered to be of **Site** importance overall.

Invertebrates

Methods

2.5.119 Any notable invertebrates identified during the survey were recorded. The habitat was also assessed for its suitability for notable invertebrates, including the presence of specific species known to be foodplants or larval plants or habitats which may be favoured by invertebrates (such as bare ground, deadwood or grass tussocks). The habitat structure was also considered, such as mosaics, brownfield or unmanaged areas.

Desk Study Information

2.5.120 Within the last 20 years, HERC returned a number of records of bee, beetle, butterfly and moth species listed under Section 41 of the NERC Act 2006 within 2km of the Site. The list of species returned include:

- | | |
|---|--|
| • Large Garden Bumblebee <i>Bombus ruderatus</i> | • Grey Dagger <i>Acrionicta psi</i> |
| • Stag Beetle <i>Lucanus cervus</i> (also an Annex II species of European Union Habitats and Species Directive; 1.2km south west of the Site) | • Horehound Long-horn <i>Nemophora fasciella</i> |
| • Small Heath <i>Coenonympha pamphilus</i> | • Lackey <i>Malacosoma Neustria</i> |
| • Breaded Chestnut <i>Agrochola lychnidis</i> | • Large Nutmeg <i>Apamea anceps</i> |
| • Blood-vein <i>Timandra comae</i> | • Large Wainscot <i>Rhizedra lutosa</i> |
| • Brown-spot Pinion <i>Anchoscelis litura</i> | • Latticed Heath <i>Chiasmia clathrate</i> |
| • Buff Ermine <i>Spilosoma lutea</i> | • Mottled Rustic <i>Caradrina Morpheus</i> |
| • Centre-barred Sallow <i>Atethmia centrargo</i> | • Mouse Moth <i>Amphipyra tragopoginis</i> |
| • Cinnabar <i>Tyria jacobaeae</i> | • Powdered Quaker <i>Orthosia gracilis</i> |
| • Common Fan-foot <i>Pechipogo strigilata</i> | • Rosy Rustic <i>Hydraecia micacea</i> |
| • Dusky Thorn <i>Ennomos fuscantaria</i> | • Rustic <i>Hoplodrina blanda</i> |
| • Feathered Gothic <i>Tholera decimalis</i> | • Sallow <i>Cirrhia icteritia</i> |
| • Ghost Moth <i>Hepialus humuli</i> | • Shaded Broad-bar <i>Scotopteryx chenopodiata</i> |
| • Green-brindled Crescent <i>Allophytes oxyacanthae</i> | • Small Emerald <i>Hemistola chrysoprasaria</i> |
| | • Small Square-spot <i>Diarsia rubi</i> |
| | • White Ermine <i>Spilosoma lubricipeda</i> |

Field Survey Results

2.5.121 No notable invertebrate species were recorded on Site during surveys.

2.5.122 The grassland, scrub, woodland and hedgerow habitats within the Site form a mosaic of habitats suitable to support a range of common invertebrate species. Given the greatest value habitat (i.e. woodlands) are to be largely retained, detailed invertebrate surveys were considered disproportionate to the proposals and so were not undertaken to inform the impact assessment.

Evaluation

2.5.123 Invertebrates were considered to be of **Site** Importance.

Other Protected Species, Species of Conservation Concern and Invasive Species

Methods

2.5.124 Habitats were assessed for their suitability for Species of Conservation Concern (SoCC), including non-native species.

Desk Study Information

2.5.125 Ninety-nine brown hare *Lepus europaeus* records were returned by HERC within the last 20 years, with the nearest records being 0km away (10km grid reference accuracy), most recently recorded in 2023.

2.5.126 In the last 20 years, 78 hedgehog *Erinaceus europaeus* records, including the nearest record at 310m north of the Site in 2021, were returned from HERC.

2.5.127 Two polecat *Mustela putorius* records were returned from HERC, both of which were 1km north of the Site in 2012,



Field Survey Results

- 2.5.128 The open grassland habitat on Site was considered suitable for brown hare. However given the barrier effects from the surrounding presence of roads and River Oughton limiting dispersal of brown hare into the Site, in addition to no brown hare recorded during any of the survey visits, this species was considered likely absent within the Site.
- 2.5.129 The Site is considered to provide suitable foraging and commuting opportunities for hedgehog, particularly the hedgerow, scrub and woodland edge habitat. However, the presence of badgers may make the Site less suitable, and hedgehogs typically prefer smaller fields and gardens in the suburban fringes.
- 2.5.130 The heterogeneity of habitats including grassland, woodland and offsite riparian habitats is suitable for polecats. No evidence of polecat including dens was recorded during the site visits, although field signs for this species is widely regarded as difficult to be recorded, often found as road kills.
- 2.5.131 Cherry laurel *Prunus laurocerasus*, a non-native invasive species (Schedule 9), was recorded within the southern woodland (W3).

Evaluation

- 2.5.132 Hedgehog and polecat, if present, are considered to be of **Site** importance.
- 2.5.133 Cherry laurel is considered to be of **Site** Importance.
- 2.5.134 Brown hare is considered likely absent from the Site, therefore **Negligible** importance.

2.6 Summary of Ecological Importance

- 2.6.1 Table 22 overleaf, gives all the identified ecological features on Site and their individual assessment of importance. Those coloured green are considered to be Important Ecological Features (IEF) and will form the basis of the Assessment of Effects in Section 3. Those coloured yellow will be included on the basis of their specific legal protection or applicable planning policies.



Table 22: Summary of Ecological Importance

Feature	Importance
Designated Sites	
Oughtonhead LWS (including Oughtonhead Common LNR and Oughtonhead HMWT)	Local
Habitats	
Other Neutral Grassland	Local
Modified Grassland	Site
Lowland Mixed Deciduous Woodland	District
Other Woodland; Broadleaved	Local
Mixed Scrub	Site
Bramble Scrub	Site
Tall Forbs	Site
Individual Trees	Site
Developed Land; Sealed Surface	Negligible
Artificial Unvegetated; Unsealed Surface	Negligible
Hedgerows	Local
River	Local
Species	
Badger	Local
Bats – Roosting	Site
Bats – Commuting and Foraging	Local - District
Water Vole	Site
Otter	Site, if present
Dormouse	Negligible
Great Crested Newt	Local
Amphibians (excl. GCN)	Site
Reptiles	Site
Birds	Site
Invertebrates	Site
Brown Hare	Negligible
Hedgehog	Site
Polecat	Site
Cherry Laurel	Site



3 ASSESSMENT OF EFFECTS

3.1 Methodology

- 3.1.1 Continuing from the valuation of IEFs, this section lists each IEF in turn together with a characterisation of any potential impacts upon them likely to arise from the proposals. This takes into consideration any measures inherent to the designed scheme which seek to avoid such impacts altogether. Next, any agreed mitigation measures chosen to reduce likely impacts are then set out, along with the mechanism(s) through which these would be secured.
- 3.1.2 Residual effects, being those effects which would likely still arise despite any avoidance measures or agreed mitigation efforts, are subsequently discussed. Residual effects are determined to be either significant or not significant and any significant residual effects are given a geographical scale at which they might be felt. This assessment methodology is in accordance with that set out in the CIEEM Guidelines for Ecological Impact Assessment, 2018.
- 3.1.3 Where residual effects are identified compensatory measures may be proposed to make up for the loss or permanent damage to an IEF, as far as possible. If applicable, recommendations are provided for any further work that might be required to determine baseline conditions, to help identify impacts or determine the necessary mitigation. This document should be updated to reflect the new findings and their implications as they arise. Monitoring or management schemes which may be necessary to ensure the long-term achievement of all intended mitigation and compensation are discussed.
- 3.1.4 Where potential for cumulative impacts upon IEFs in association with other proposed or ongoing local development are identified these are described as appropriate for the affected IEF. The Zone of Influence for each IEF, together with their level of ecological importance will be of relevance when considering the scope of a cumulative impact assessment.
- 3.1.5 Ecological enhancement measures that will be incorporated into the development are given in line with the National Planning Policy Framework.

3.2 Summary of Development Proposals and Sources Potential of Impacts

- 3.2.1 The proposals comprise an outline planning application for the residential development of up to 100 units and associated infrastructure and access. The proposals will result in the loss of habitats ranging from Site to District importance to facilitate construction, which will include the following:
- Modified Grassland (-0.025ha)
 - Other Neutral Grassland (-2.70ha)
 - Lowland Mixed Deciduous Woodland (-0.084ha)
 - Mixed / Bramble Scrub (-0.48ha)
 - Tall forbs (-0.22ha)
- 3.2.2 Subject to detailed lighting scheme, it is anticipated artificial lighting associated with the development, such as street lighting and external lighting affixed to individual units will increase across the Site as a result of the scheme. The southern to southwestern boundary would likely be the least affected areas.

Inherent Avoidance Measures

- 3.2.3 The design retains a development-free buffer zone of varying width along the existing boundary hedgerows during the construction and operational phases, avoiding potential adverse impacts to these habitats. The hedgerows will also be maintained outside of private ownership to ensure management practices that will provide benefits to wildlife for the lifetime of the development.
- 3.2.4 Construction works will be timed appropriately to avoid impacts to protected species as far as possible, details of which are provided in Section 3.6 below.

New Habitat Creation/ Enhancement

- 3.2.5 Based on the landscape information provided in the Illustrative Landscape Strategy (Drawing No.: edp9240_d007) for the Site, newly created habitats to be delivered within the scheme include the following:



- Developed land; sealed surface (comprising units, access roads and other associated infrastructure) (1.08ha)
- Artificial unvegetated, unsealed surface (0.04ha)
- Mixed scrub (0.48ha); this includes areas where additional woodland planting is proposed.
- Modified grassland (0.44ha)
- Other neutral grassland (1.23ha)
- Vegetated gardens (0.78ha)
- Ponds (non-priority habitat) (0.03ha)
- Sustainable drainage system (SuDS) (0.22ha)
- Urban trees (small trees, 0.58ha)
- Species-rich hedgerows (c.200m)
- Species-rich hedgerow with trees (c.100m)

3.2.6 One of the retained hedgerows, H3 will be enhanced through in-fill planting with native species and individual trees, where possible, to increase habitat distinctiveness and integrity of hedgerow structure.

Generic Measures

3.2.7 A Construction Environmental Management Plan (CEMP): Biodiversity will be prepared to detail how the habitats and species within and surrounding the Site should be protected during the construction phase. The CEMP will include details of appropriate fencing to restrict access into key ecological areas; information on any timing restrictions; and measures to prevent damage to sensitive ecological habitats and protected species. Creation of new wildlife features (such as bat and bird boxes) will also be included. Typically the preparation of a CEMP will be a conditional requirement of the planning permission.

3.2.8 A Landscape and Ecological Management Plan (LEMP) will be prepared for the operational Site that will cover how retained habitats and newly planted areas should be managed so as to maximise their biodiversity value and achieve the objectives of ecological mitigation and compensation. The LEMP should also set out any measures necessary to ensure protected species are appropriately accommodated within the operational Site.

3.3 Biodiversity Net Gain Assessment

3.3.1 A detailed Biodiversity Net Gain Assessment will be presented in a separate report and submitted with the planning application, using the Statutory DEFRA metric. The value of existing habitats on-Site will be calculated using the Baseline Habitats Map (Figure 4) and habitat descriptions in this report, and the value of proposed habitats will be calculated using the latest soft landscaping proposals.

3.3.2 The proposed scheme will result in a loss of 7.68 Habitat Units (-14.56%) and a significant gain of 2.85 Hedgerow Units (+1517.99%).

3.4 Habitats

Other Neutral Grassland

3.4.1 The majority of the Site comprised of Other Neutral Grassland. The HEN assessment classified this habitat as category 2, with the draft LNRS classifying the onsite habitat as Grassland 1 type: neutral grassland which presents enhancement opportunities to benefit the ecological network of the county to be managed to maintain the biodiversity of existing good quality habitats and enhance poor quality sites.

3.4.2 Grassland 1 action: 'manage existing grassland and heathland to maintain the biodiversity of existing good quality habitats and enhance poor quality sites'. Grassland 3 action: to 'create more good quality neutral grassland'.

3.4.3 The main development footprint is proposed across the area of Other Neutral Grassland assessed as Poor condition (G5 and G6). Sections of the other two ONG parcels (G2 and G3) will be retained in Moderate condition.



Potential Impacts

- 3.4.4 The onsite grassland would largely be lost as a consequence of the development proposal (G5 and 6 lost for developing housing and infrastructure, and minor loss of G2 and G3 to create SuDS), resulting in a reduction in the extent of this habitat.
- 3.4.5 During operation, there is potential for recreational pressure on the retained grassland, thereby degrading the quality and condition of this habitat.

Mitigation, Compensation, Enhancement and Monitoring

- 3.4.6 A portion of Other Neutral Grassland will be retained in the southwest of the development area (G2 and G3). Whilst this area will be smaller than the current extent of the Site, positive management aims to maintain the retained neutral grassland, in line with the HEN and LNRS targets. Management will be detailed within the reserved matters application and LEMP however could include staggering cutting times throughout year, leaving some areas in flower at all times and creating a varied structural diversity, and overseeding with an appropriate seed mix containing indicator species of chalk grassland. The accompanying BNG report notes that the areas of ONG will be retained in Moderate condition under a precautionary approach.
- 3.4.7 Some areas identified for grassland recovery actions by the LNRS have been prioritised for additional woodland and scrub planting around the edges of the retained woodlands to reduce edge effects and offset impacts on this priority habitat. These habitats were prioritised due to being identified through the initial data search, HEN priorities, and as highlighted within local planning policy prior to knowledge of the LNRS.
- 3.4.8 Grassland losses will also need to be offset through purchase of off-site BNG units, creating 'grassland

Residual Effects

- 3.4.9 The proposals have sought to retain the most valuable (distinctiveness) habitat consisting of woodland and the River Oughton, aiming to improve connectivity between the woodland areas. Due to the large extent of grassland on site, most of which is highlighted in the draft LNRS as 'Grassland 1' it has not been possible to retain and enhance this habitat. There is therefore a residual adverse impact on ONG grassland on Site.

Lowland Mixed Deciduous Woodland and Other Woodland; Broadleaved

- 3.4.10 The Site contained six areas of woodland, the majority of which were classified as Lowland Mixed Deciduous Woodland (a priority habitat). The HEN noted these should be avoided for development, protected and enhanced by the development management system. Planning policy NE4 states that woodland development should: *Integrate appropriate buffers of complimentary habitat for designated sites and other connective features, wildlife habitats, priority habitats and species into the ecological mitigation and design. The appropriateness of any buffers will be considered having regard to the status of the relevant habitat. 12 metres of complimentary habitat should be provided around wildlife sites (locally designated sites and above), trees and hedgerows.*

Potential Impacts

- 3.4.11 The proposed new access entrance will result in the permanent removal of a section of W4 (northern woodland) and subsequently introduce habitat fragmentation effects on a range of associated species.
- 3.4.12 In the absence of mitigation, during construction the retained woodlands may be damaged by machinery (damage to limbs or to roots via soil compaction), or through accidental pollution. There is also the potential for airborne particulates generated during construction to settle on foliage and soils within the woodland edge, potentially reducing photosynthetic efficiency, smothering ground flora, and affecting root and soil function.
- 3.4.13 During operation, there is potential for increased recreational pressure if the woodlands are publicly accessible. This may result in damage to understory vegetation from increased footfall, increased nutrient levels from pet faeces, and fly-tipping (in the form of green waste, compost heaps, dumping of rubble etc.) ultimately degrading the habitat.
- 3.4.14 An increase in artificial night-time lighting will result in impacts during the construction and operational phase, reducing the habitat quality for nocturnal species.



Mitigation, Compensation, Enhancement and Monitoring

- 3.4.15 During construction, a Biodiversity Protection Zone (BPZ) delineated by appropriate protective fencing and signage in line with British Standard 5837: 2012 'Trees in relation to design, demolition and construction', will be established to protect the retained woodlands. The details of these measures will be set out in a CEMP for the Site, alongside appropriate pollution control measures. In line with Policy NE4, BPZs will be established at a minimum of 12m from woodland edges, but will be increased if arboricultural assessments indicate this is necessary to safeguard root protection zones.
- 3.4.16 The proposed development sites all infrastructure outside the retained woodland and tree root protection zones.
- 3.4.17 Design iterations have taken into account the 12m (Policy NE4) no-works woodland buffer, to relocate units and infrastructure outside this area, thus avoiding impacts on the woodland habitats, as much as possible. The southern woodland habitats (W5 and W6) were prioritised to be protected from impacts as they were of the highest ecological value, where the wider areas of the woodland and River Oughton form an important ecological network across the local area. Areas of proposed development within small sections of the 12m buffer are expected to have minimal impacts to the integrity of the habitat, such as creation of vegetated gardens, ponds and SuDS. At the closest point gardens are located 4m from the woodland edge.
- 3.4.18 The current design seeks to offset removal of woodland habitat and any development within 12m of the woodland through additional planting which is proposed around the edges of retained woodland and across the residential area to improve connectivity between retained woodland parcels. Such planting will comprise a native, locally appropriate, species-rich woodland edge mix.
- 3.4.19 Further mitigation to compensate for both direct losses as well as potential operational recreational pressure also includes a commitment to positive woodland management through removing non-native invasive species (i.e. cherry laurel) to reduce interspecific competition with more desirable woodland species. Further management will be detailed within a site specific LEMP. Targeted thinning of the woodland would allow more sunlight to reach the woodland floor and promote a greater species assemblage; this can be achieved by coppicing trees to allow multi-stemmed regrowth or removing specific specimens. Existing manure piles will be appropriately removed, following guidance from North Hertfordshire District Council or the Environment Agency. Proposals should delineate paths within woodlands dedicated for POS by planting additional shrubs and installing dead hedging to prevent access beyond the walkways. Additional measures like waymarked paths, dog waste bins, interpretation signage, and fencing/boardwalks will also be considered.
- 3.4.20 A detailed lighting strategy should be developed to ensure minimal light spill onto the woodland (see details in Section 3.6 for Bats). No lighting should be installed within the woodland.

Residual Effects

- 3.4.21 Provided the above mitigation measures are adhered to, the loss of W4 is predicted to result in a residual, minor adverse effect on the retained woodlands at the Site level.

Hedgerow

- 3.4.22 A single native hedgerow with trees was recorded to the north west of the Site. Hedgerows are habitats of principal importance under the NERC Act.

Potential Impacts

- 3.4.23 The hedgerow identified will be unaffected by the development proposals.
- 3.4.24 In the absence of mitigation, during construction the retained hedgerows and trees may be accidentally damaged through physical damage by machinery (damage to limbs or to roots via soil compaction), or through accidental pollution. There is also the potential for debris from the construction phase to be deposited within the hedgerows or tree canopies, damaging them and impacting on root systems.
- 3.4.25 Once operational, the hedgerow might be mismanaged or degraded, resulting in a poorer structure and lower overall biodiversity value.



Mitigation, Compensation, Enhancement and Monitoring

- 3.4.26 During construction, a BPZ delineated by appropriate protective fencing and signage in line with British Standard 5837: 2012 'Trees in relation to design, demolition and construction', will be established to protect the retained hedgerows and trees. The details of these measures will be set out in a CEMP for the Site, alongside appropriate pollution control measures. The hedgerow BPZ will be established at a minimum of 8m from the hedgerow edge. This is considered sufficient distance to adequately protect and maintain this feature.
- 3.4.27 In addition to enhancing the existing hedgerow by planting trees and infill plant with native hedgerow species, new species-rich hedgerow planting will be included within the scheme, which will be planted with native species of local provenance and will include standard trees along its length. These hedgerows would form wildlife corridor between the existing woodland parcels. Hedgerow whips will also include fruiting and flowering species, to provide a foraging resource for a range of species.
- 3.4.28 All hedgerows will be maintained outside of private ownership, and therefore subject to management specifications to be set out within the LEMP for the Site. Retained and newly created hedgerows will be managed to maximise their biodiversity value and promote a dense vegetation structure in order ensure their functionality as ecological corridors.

Residual Effects

- 3.4.29 Provided the above mitigation measures are adhered to, no residual significant negative impacts on the retained hedgerows and trees are anticipated as a result of the development. Once operational, the establishment of new hedgerow planting and enhancement of existing hedgerows will result in an overall positive effect, as a result of the increase in extent and quality of hedgerows at the Site.

River

- 3.4.30 The River Oughton, flows west to east, is approximately 20m south of the application site at its nearest point, and is segregated by a deciduous woodland parcel that will be retained from any development impacts. Rivers are a priority habitat.

Potential Impacts

- 3.4.31 During construction and operation, there is potential of increased sediment and/or pollution run-off into the River Oughton and impact to the wider landscape downstream. Substantial excavation is anticipated to create the proposed SuDS feature, with the potential for sediment-rich surface water runoff into the river.
- 3.4.32 A single informal link to the river was proposed as part the published landscape character area (LCA 217: River Oughton and Purwell Valleys), which would likely result in increased recreational pressure on this habitat.

Mitigation, Compensation, Enhancement and Monitoring

- 3.4.33 To ensure that any indirect construction related runoffs and pollution impacts are avoided, silt fencing will be installed between these areas and the river to intercept any surface water runoff. This will also need to be regularly monitored and any silt deposits removed to maintain the integrity of the fencing. Details of this will be included with the CEMP: Biodiversity.
- 3.4.34 During operation, surface water runoff will be channelled via the SuDS, intercepting any sediment or pollution runoff, and ensuring damage to the river can be avoided.
- 3.4.35 During detailed design stage, the informal link will be sensitively located and designed such that the habitat is not degraded, Management to control recreational pressure will included in a LEMP, such as clear signages to restrict access into the watercourse.

Residual Effects

- 3.4.36 Upon full adherence to the CEMP and LEMP, no residual adverse effects on the River Oughton are anticipated as a result of the development.



3.5 Protected Species and Species of Conservation Concern

Badger

- 3.5.1 The Site provides suitable foraging habitat for badgers, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Potential Impacts

- 3.5.2 *Habitat Loss:* The proposals will result in the loss of existing ONG habitat, which is currently grazed pasture of sub-optimal value for foraging. The creation of new housing, and associated infrastructure may exclude badger from much of the Site post-development, thus losing access to this (low value) foraging habitat. The more suitable foraging habitats i.e. woodlands will largely be retained.

- 3.5.3 *Damage and/or Disturbance:* [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- 3.5.4 *Physical Harm to Badgers during Construction:* During construction works, if deep trenches are left open overnight or pipes are kept open overnight there is potential for incidental injury or mortality to badgers crossing or exploring the Site during the night.

- 3.5.5 [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- 3.5.6 Killing, injuring or disturbing badgers and their setts would result in offences under the Wildlife and Countryside Act (1981) and The Protection of Badgers Act 1992 and as such mitigation is essential to minimise adverse impacts and ensure the scheme is compliant with legislation.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.7 [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- 3.5.8 New proposed planting will include the reinstatement of grassland habitat, new planting of fruiting scrub, woodland and hedgerow and enhancing existing hedgerow. New planting will also improve the connectivity between the woodland parcels. This will maintain the value of the Site for a variety of invertebrates as well as foraging opportunities in the form of fruiting woody species.

- 3.5.9 [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- 3.5.10 No vehicle movements, works by heavy machinery or material storage will be permitted without consent from the Ecological Clerk of Works (ECOW). The CEMP: Biodiversity will outline measures to be taken to reduce the probability of incidental physical harm to badgers, including the installation of planks or earth ramps in any excavations which are left open overnight.



- 3.5.11 A pre-construction badger survey will be completed by an experienced ecologist within 10 weeks prior to the commencement of construction, [REDACTED]
[REDACTED]

- 3.5.12 Provision of undeveloped wildlife corridors around the Site will ensure that badgers can continue to commute around the Site.

Residual Effects

- 3.5.13 [REDACTED]
[REDACTED]
[REDACTED]

Bats

- 3.5.14 Three trees within the Site were considered to offer potential for roosting bats. Among these, only T2 (PRF-I) was proposed to be felled as a result of the development proposals. A further inspection of the upper half of this tree is proposed during the autumn/winter months, as visibility of this tree was adversely affected by the dense leaf canopy, to confirm that the tree is considered PRF-I.
- 3.5.15 No evidence of roosting bats was recorded during the inspections of Buildings 1, 2 and 3; all buildings were considered to be of negligible suitability for day roosting bats. Further survey effort confirmed no night roosts were recorded for Buildings 2 and 3.
- 3.5.16 The Site provides suitable foraging and commuting habitat, with at least six species identified during the static detector surveys, including barbastelle, common pipistrelle, soprano pipistrelle, serotine, *Myotis* sp., *Nyctalus* sp., and brown long-eared bat. Presence of barbastelle (likely commuting through the Site between more suitable habitats in the wider landscape) is considered significant given their elevated conservation concern. At present, ahead of the conclusion of further survey, foraging/commuting bats are assessed as being of Local to District Importance.

Potential Impacts

- 3.5.17 Further surveys of trees may be required where any removal is required beyond those trees currently identified.
- 3.5.18 The proposed new Site entrance will result in the loss of a small extent of W4 (northern woodland), and likely to fragment this habitat into segregated woodland parcels, thereby reducing the foraging and commuting connectivity for bats.
- 3.5.19 The new access entrance is proposed to be lit accordance with highway adoptable lighting standards. The introduction of night-time and security lighting within the new development scheme could result in light pollution of retained and new habitats within and adjacent to the Site. The majority of bat species, particularly barbastelle, long-eared and *Myotis* species, which have been recorded within the Site, will actively avoid lit areas due to the increased risk of predation. Artificial light can create a physical barrier to bat movement within the landscape. Several species including common and soprano pipistrelle (and occasionally *Nyctalus* sp.), however, will forage for insects attracted to white mercury streetlamps (i.e. those containing Ultra Violet [UV] elements). This is often to the detriment of other light sensitive bat species as insect food becomes scarcer in surrounding darker areas as a result.
- 3.5.20 Light pollution can result in a significant change in how bats utilise a landscape. If, for example, a flight path between a roost and foraging habitat is affected by light pollution, the roost may be abandoned if it is no longer energetically viable for the bats to remain there (i.e. they would need to fly for longer to reach seasonal foraging habitat). Light pollution can, therefore, have a significant detrimental impact on individual bats and potentially colonies.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.21 To maintain the commuting value of the Site, an undeveloped buffer will be maintained along the Site boundaries and alongside existing hedgerows, although this may vary in width. A minimum 8m and 12m buffers (from the hedgerow's and woodland's outer edge, respectively) will be maintained along the retained hedgerows and woodland from any built development/roads where possible.



3.5.22 Although the 2024 Secure by Design guide for Homes²⁰ advises that adopted highways and footpaths should be lit in accordance with BS 5489-1:2020, there is currently no legal duty requiring this. Even 'high-risk' sites are not exempt from the statutory protection afforded to bat roosts and their dispersal routes. The British Standard specifies that lighting projects need to be environmentally sustainable, which includes minimizing obtrusive lighting on nocturnal wildlife. Current best practice guidance regarding bats and lighting (ILP 2023) highlights many case studies of adopted roads and footpaths that have departed from typical standards. In North Somerset, Clarkson & Woods have recently worked on a project where adopted roads remain unlit and still adhere to policy by treating them as "roads within a rural area". Secure by Design acknowledges that "it is recognised that some local authorities have 'dark sky' policies and deliberately light some of their rural, low crime areas to very low levels of illumination".

3.5.23 In order to minimise the impact of increased artificial light upon bat populations, a detailed lighting strategy should be prepared by a suitably qualified lighting engineer to ensure that existing features and habitats of value to bats remain unlit. The lighting strategy should demonstrate that the important foraging and commuting routes identified around the Site are not directly illuminated as a result of street lighting for access roads, security lighting and/or lighting transmitted from within the proposed development. It is recommended that the adoption of a sensitive lighting strategy is made a condition of the planning permission. The aim of a sensitive lighting plan will be to minimise light spill onto new and retained habitats, which will need to be based on the Bats and Lighting Guidance Note 8²¹. In principle, the following parameters, which will ensure bats are not affected by the proposals and can continue to navigate around the Site, will need to be adhered to:

- Low-level lighting of access routes to be controlled by dimming and / or motion triggers creating a light attenuation zone with no more than 3lux at 0m;
- Lamp height will be carefully considered to ensure minimal light spill is achieved;
- A warm light spectrum (<2700 Kelvin) will be adopted to reduce impacts of blue light upon wildlife;
- Luminaires with an Upward Light Ratio above zero will not be used; and
- If external security lighting is provided, the specification will be agreed with an ecologist and set on motion-sensors/timers to decrease the light pollution impacts. These will be directed away from retained hedgerows and trees, be hooded/cowled where necessary, and be of the lowest intensity/brightness necessary for their purpose.

3.5.24 To mitigate for the loss of suitable foraging habitat, areas of species-rich grassland (G2 and G3) outside of proposed SuDS will be retained, alongside additional scrub, woodland and hedgerow planting around the edges of retained woodlands serving as ecotones. The new proposed SuDS may support further bat foraging when wet.

3.5.25 To reduce the barrier effect for bats at the access route, a mix of fast-growing tree/shrub species will be planted adjacent to either side of the road away from the visibility splay, i.e. silver birch, hazel, hawthorn, willow, alder, rowan, as well as slower growing larger trees just behind these fast-growing species to take over in the future (oak, lime, willow etc.). This would then act as a link between the newly isolated woodland parcels. The planting of trees alongside the residential lanes could further enhance the connectivity between the northern and southern woodland parcels.

Residual Effects

3.5.26 Provided the above mitigation measures are implemented, the proposals will result in a neutral non-significant effect on foraging and commuting bats.

Otter

3.5.27 No evidence of otter was found within the Site and River Oughton. No direct impacts to the river or within a 20m buffer of the watercourse will occur, although informal connections to the river banks are proposed for pedestrian access.

²⁰ Secured by Design (2024). *Homes Guide 2024*.

²¹ <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>



Potential Impacts

- 3.5.28 An increase in recreational access to the riverbanks may result in an increase in disturbance should otters be present within / adjacent to the watercourse.
- 3.5.29 Killing, injuring or disturbing otters and their holts would result in offences under the Wildlife and Countryside Act (1981) and the Conservation of Habitats and Species Regulations 2010 and as such mitigation is essential to minimise adverse impacts and ensure the scheme is compliant with legislation.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.30 Soft landscaping plans will include the creation of a network of ponds, and new native woodland and shrub planting. It is strongly recommended that a sensitive lighting strategy be implemented during occupation. These measures will ensure that areas of the Site remain accessible to otter.
- 3.5.31 Should any works to the river be proposed, creating direct impacts on the watercourse as a result of construction activities be identified, a pre-construction inspection for otter holts will be completed by an experienced ecologist within 10 weeks prior to the commencement of works to confirm that no holts or resting places that may have become occupied since the baseline surveys, are present. If an otter holt is found, then it is recommended that works do not commence until a mitigation strategy has been produced and if unavoidable, a licence sought from Natural England.

Residual Effects

- 3.5.32 Provided the above mitigation measures are implemented, the proposals will not result in any significant adverse effects on otters.

Great Crested Newts and Widespread Amphibians

- 3.5.33 No ponds are present within the Site, however four ponds were identified within 250m of the site boundary. Of these two were subject to further survey for GCN using eDNA sampling: Pond 1 was indeterminate (likely due to low water levels at the time of survey), although was generally considered to be unsuitable for breeding GCN, and GCN were confirmed as absent from Pond 3. The Site lies within a Green Risk Zone under the Naturespace administered District Licensing Scheme, which indicates that GCN may be present in the locality. However, this is considered to be a low likelihood in the context of the Site due to a lack of recent evidence and nearby records. GCN are therefore considered highly unlikely to be present within the Site, although cannot be completely ruled out.
- 3.5.34 Widespread amphibian species, such as common toad, are known to be present in the wider landscape, and tadpoles were recorded in an ephemeral pool within the woodland immediately south of the Site.
- 3.5.35 The proposals will result in the loss of suitable terrestrial habitat for amphibian species, primarily in the form of grassland through the centre of the Site. Areas of suitable habitat are being retained and protected during construction around the periphery of the Site, i.e. hedgerows, woodland and scattered scrub habitat.

Potential Impacts

- 3.5.36 No ponds or waterbodies will be lost as a result of the proposed development.
- 3.5.37 If present, the removal of suitable habitat could cause physical harm to amphibians, including GCN (although the latter is highly unlikely).
- 3.5.38 Widespread amphibian species receive protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill or injure these animals.
- 3.5.39 The housing development is likely to result in an increase in disturbance resulting from domestic pets, i.e. cats and dogs, and footfall within the Site.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.40 All measures to prevent impacts to widespread amphibians will be detailed within a non-licensed Reasonable Avoidance Method Statement (RAMS), as part of the CEMP: Biodiversity. The hedgerow and woodland network will be safeguarded through implementation of a no-works buffer of at least 8m and 10m (for the majority of the site) (respectively) during construction. No vehicle movements, works by heavy machinery or material storage, will be permitted without consent from the ECoW.



- 3.5.41 As part of the RAMS, an update GCN eDNA survey will be undertaken for Pond 1 to confirm the non-breeding status of the waterbody during the next survey season in 2026.
- 3.5.42 Providing dropped curbs where access roads intersect grassland corridors and hedgerows will minimise physical barriers to amphibian and reptile movement within the Site. It is also recommended that traffic calming measures are implemented within the Site reduce the likelihood of road traffic collisions.
- 3.5.43 A precautionary approach to clearance of suitable habitats within the Site will be taken and carried out under guidance from an appointed ECoW, details of which will be provided within the RAMS for the Site. In the unlikely event that a GCN is encountered during works, the developer will seek to register the Site with the Natural England-led DLL Scheme for Hertfordshire.
- 3.5.44 The DLL scheme will provide sufficient off-site habitat within the Hertfordshire area to offset the proposed loss of terrestrial habitat for newts which are known to be present within 250m of the Site. The DLL will fully compensate for impacts to GCN which will result from the proposals and ensure the development is in line with legislation and local planning policy with regard to the conservation of this European protected species.
- 3.5.45 Habitats within the POS will provide suitable terrestrial habitat, namely species-rich grassland and scrub, with connectivity to retained hedgerow and woodlands on Site. Ensuring suitable ecological corridors are maintained within the Site, and between waterbodies, will enable GCN (if present) to move within and onto the Site from adjacent land. Establishment of diverse grassland will also provide improved foraging opportunities for GCN in their terrestrial phase.
- 3.5.46 New proposed SuDS have the potential to provide additional breeding grounds for GCN and widespread amphibians when wet.
- 3.5.47 Providing dropped kerbs where access roads intersect grassland corridors and hedgerows will minimise physical barriers to amphibian and reptile movement within the Site and it is strongly recommended that these are incorporated into the designs. It is also recommended that traffic calming measures are implemented within the Site reduce the likelihood of road traffic collisions with wildlife.
- 3.5.48 As a further enhancement, it is recommended that two hibernacula, comprising partially buried logs and rubble, will be provided within the Site. These features will provide additional sheltering and hibernation opportunities for GCN and other amphibians, the location of which will be provided within the LEMP and CEMP: Biodiversity for the Site.

Residual Effects

- 3.5.49 Implementation of suitable mitigation, and through entry into Natural England's DLL Scheme (if required), will ensure no significant negative residual effects on GCN result from the development and the favourable conservation status of the local GCN population will be maintained. The provision of suitable terrestrial habitat and hibernation features within the Site will ensure that the residual impacts resulting from the development are Neutral and Not Significant.

Reptiles

- 3.5.50 No reptiles were recorded during the seven refugia surveys. However, the presence of more mobile species e.g. common lizard and grass snake cannot be completely ruled out due to the suitability of habitat features. Onsite manure heaps also offer egg-laying sites for grass snake.

Potential Impacts

- 3.5.51 The removal of manure heaps has the potential to damage and destroy grass snake eggs.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.52 Prior to the removal of manure heaps, a toolbox talk will be delivered by the ECoW to key contractors which will detail the potential for protected species to be present and actions to take should they be discovered (i.e. halt works and contact the ECoW for advice), which will be detailed in the CEMP: Biodiversity.
- 3.5.53 Providing dropped curbs where access roads intersect grassland corridors and hedgerows will minimise physical barriers to amphibian and reptile movement within the Site. It is also recommended that traffic calming measures are implemented within the Site reduce the likelihood of road traffic collisions.



Residual Effects

- 3.5.54 Provided the above mitigation measures are implemented, due to the removal of horse grazing from the Site and inclusion of soft landscaping, the development proposal would result in overall neutral effects for reptiles, if present.

Birds

- 3.5.55 The Site was assessed as suitable to support bird species typical of urban and agricultural habitats within the boundary vegetation, whilst several schedule 1, SPI and red and amber listed species were recorded.

Potential Impacts

- 3.5.56 There is potential for accidental injury/killing of nesting birds, their eggs or young during Site clearance.
- 3.5.57 The removal of scrub habitat will result in the reduction in the extent of available nesting habitat, and the removal of grassland on Site will also result in a loss of foraging habitat for certain bird species.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.58 It is recommended that, wherever possible, all vegetation removal and removal of stables be time to avoid the key bird nesting season (March to August inclusive). If this is not possible, a check to confirm the absence of nesting birds should be carried out by a suitably experienced ecologist no more than 48 hours prior to the demolition taking place. This approach will be further detailed within the CEMP: Biodiversity.
- 3.5.59 Measures will be implemented to ensure the protection of retained hedgerow, woodlands, and trees therein, during construction are outlined in Section 3.5 above.
- 3.5.60 The creation and management of diverse grassland habitat, new scrub, tree and hedgerow planting within the proposals will provide additional nesting and foraging opportunities for birds, including song-thrush which is a local BAP targeted species. Sympathetic management of these habitats to benefit wildlife will be detailed within the LEMP.
- 3.5.61 In line with BS 42021:2022, one integrated nest box will be installed for each new dwelling. As per the standard, this may result in more than one box being installed on a single unit. Integrated boxes should target species such as swifts and house sparrows. Details of the installation and maintenance of these features will be provided in the CEMP: Biodiversity and LEMP.

Residual Effects

- 3.5.62 Overall, no residual negative effects on birds are anticipated as a result of the proposals, provided the above mitigation measures are implemented.

Invertebrates

- 3.5.63 No notable invertebrates were recorded, however the range of different habitat types within the Site, including hedgerows, scrub and grassland, provide suitable habitat.

Potential Impacts

- 3.5.64 The proposals will result in the loss of suitable habitat for a range of invertebrate species, particularly species associated with grassland habitats.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.65 The creation of habitats, including diverse grassland, mixed scrub, woodland, hedgerows, ponds and SuDS, will provide ecologically valuable habitat for a range of invertebrate species, including aquatic species when SuDS is wet.
- 3.5.66 Provision of log/brush piles, also suitable for amphibians and hedgehogs, will deliver further enhancement for all invertebrates.

Residual Effects

- 3.5.67 No residual negative effects on invertebrates are anticipated as a result of the development.



SoCC – Hedgehog and Polecat

- 3.5.68 The Site boundary habitats represent suitable habitat for commuting and foraging hedgehogs, which are known to be present in the wider area.
- 3.5.69 The variety of habitats on Site provides commuting and foraging opportunities for polecat.

Potential Impacts

- 3.5.70 If present, hedgehogs and polecats could be disturbed, killed or injured during tussocky grassland and scrub removal. Both species could also be at risk of injury or death by falling into excavations within the construction Site. The removal of grassland habitat will decrease foraging opportunities for both species in the short-term.
- 3.5.71 Increased traffic within the Site presents a risk to hedgehogs and polecats from vehicular collision, potentially resulting in injury or mortality. However, given the slow vehicle speeds expected this is unlikely to be a significant risk.
- 3.5.72 Creation of new waterbodies i.e. SuDS within the Site may, when wet, increase the risk of drowning, in the absence of mitigation.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.73 The CEMP: Biodiversity will outline sensitive working measures for clearance of any habitats of value to hedgehogs and polecats. This will be in line with mitigation measures for other protected species.
- 3.5.74 Provision of undeveloped wildlife corridors around the Site will ensure that hedgehogs and polecats can continue to commute around the Site. Providing dropped curbs where access roads intersect grassland corridors and hedgerows will minimise physical barriers to hedgehog movement within the Site. It is also recommended that traffic calming measures are implemented within the Site reduce the likelihood of road traffic collisions.
- 3.5.75 During removal of tall grassland and scrub, the ECoW will first inspect the habitats to ensure no hedgehogs and polecats are present. If any of these species is found, it will be relocated into retained habitat outside the construction zone.
- 3.5.76 Any new open waterbodies will be designed with wildlife in mind with shallow sloping margins where possible, allowing egress for any species which enter them.
- 3.5.77 Proposed species-rich grassland, residential gardens, scrub and hedgerows will provide additional foraging opportunities for hedgehogs.
- 3.5.78 Additional woodland and mixed scrub planting around woodland edges will provide additional foraging and habitat connectivity for polecats, if present.
- 3.5.79 The creation of 13 cm x 13 cm access holes (or custom-made gravel boards) will be provided within new fences bounding residential gardens will allow hedgehogs to access the new gardens and move around the operational Site.
- 3.5.80 It is recommended that log/brush piles are created within the public open spaces, which will provide additional sheltering opportunities for hedgehog.

Residual Effects

- 3.5.81 Provided the above mitigation measures are implemented, no significant residual, negative effects on hedgehog and polecat are anticipated as a result of the development.

Cherry Laurel

- 3.5.82 Cherry laurel, a non-native invasive species was noted within W6.

Mitigation, Compensation, Enhancement and Monitoring

- 3.5.83 It is recommended that this invasive species is removed from the woodland during landscaping works and replaced with native woody species of local provenance. The specimen should be carefully removed and disposed of securely; methodology for this work will be provided within the CEMP: Biodiversity for the Site.

Residual Effects

- 3.5.84 The removal of this species will result in a minor positive effect for the woodland at a Site level.



3.6 Recommended Further Survey to Establish Baseline

- 3.6.1 Table 23 summarises further work which is underway and will be completed during the determination period with the findings presented to the LPA in the form of an addendum to this ecological impact assessment.

Table 23: Summary of Recommended Further Work

Habitats/Species	Scope of Work	Timescale
Bats (Activity)	Ongoing bat activity surveys	Monthly (through to October)
GCN	Pond 1, previously returned as indeterminate for GCN, will be resurveyed at the earliest opportunity in 2026 to inform licensing	Mid-April to May 2026
Otter and Water Vole	Second survey to confirm likely absence	Single survey between July to September

3.7 Summary of Assessment of Effects

- 3.7.1 The assessment of effects is summarised in Table 24 overleaf, which also outlines the proposed method to secure any relevant mitigation associated with reducing impacts.



Table 24: Summary of Assessment of Effects

Feature	Importance	Mitigation/Compensation Proposed	Residual Effect and Significance	Proposed Mechanism to Secure	Monitoring Required?
Habitats					
Oughtonhead SSSI & LNR	National / Local	Soft landscaping proposed within POS to reduce potential for recreational pressure elsewhere	None	CEMP LEMP	No
Habitats					
Other Neutral Grassland	Local	Restoration measures to improve to chalk grassland and mitigate recreational pressure	Neutral	LEMP	No
Lowland Mixed Deciduous Woodland and Other Woodland; Broadleaved	Local – District	Protection of retained woodlands Additional planting with species of local provenance to mitigate for habitat loss and recreational pressure	Minor Negative at Site Level	CEMP: Biodiversity LEMP Sensitive Lighting Strategy	No
Hedgerow	Local	Retention and protection of existing hedgerow Planting of new hedgerows and maintained outside of private ownership	Positive	CEMP: Biodiversity LEMP	No
River	Local	Pollution control measures during construction Manage recreational pressure during operation	None	CEMP: Biodiversity LEMP	Yes
Species					
Badger	Local	Precautionary construction-phase mitigation measures Planting of new boundary vegetation and positive management of grassland	Minor Negative at Site Level	CEMP: Biodiversity LEMP	Yes, if licence required



Feature	Importance	Mitigation/Compensation Proposed	Residual Effect and Significance	Proposed Mechanism to Secure	Monitoring Required?
Bats – Roosting	Site	Provision of integrated bat boxes and bat boxes on retained trees Sensitive lighting strategy	Neutral, not significant	CEMP: Biodiversity Sensitive Lighting Strategy LEMP	Yes, if licence required
Bats – Foraging	Local – District	Protection of retained boundary vegetation New hedgerow / boundary vegetation planting			
Otter	Site, if present	Sensitive lighting strategy New hedgerow / boundary vegetation planting	Neutral, not significant	LEMP	No
GCN and Widespread Amphibians	Site	Implementation of RAMS, including precautionary habitat clearance during construction phase New hedgerow / boundary vegetation planting Creation of wildlife ponds, log piles and/or hibernacula	Neutral, not significant	CEMP: Biodiversity (including RAMS) LEMP	No
Reptiles	Site	Precautionary habitat clearance Creation of log piles and/or hibernacula	Neutral, not significant	CEMP: Biodiversity LEMP	None
Birds	Site	Precautionary habitat clearance Provision of integrated bird boxes and bird boxes on retained trees New hedgerow / boundary vegetation planting, and wildflower seeded grassland	Neutral, not significant	CEMP: Biodiversity LEMP	None
Invertebrates	Site	New hedgerow / boundary vegetation planting, and wildflower seeded grassland Retention and protection of mature boundary vegetation Creation of log piles	Neutral, not significant	LEMP	None



Feature	Importance	Mitigation/Compensation Proposed	Residual Effect and Significance	Proposed Mechanism to Secure	Monitoring Required?
SoCC – Hedgehog and Polecat	Site, if present	Precautionary habitat clearance New hedgerow / boundary vegetation planting and hedgehog access holes on fencing Creation of log piles	Neutral, not significant	CEMP: Biodiversity (including RAMS) LEMP	None
Cherry Laurel	Site	Precautionary removal from woodlands	Minor Positive at Site Level	LEMP	Yes, under LEMP



4 CONCLUSIONS

- 4.1.1 The proposed development has the potential to cause adverse impacts upon a number of ecological features ranging from District to Site importance. However, avoidance and mitigation measures have been proposed to ensure that these adverse impacts are reduced as far as possible.
- 4.1.2 These measures include:
- A CEMP: Biodiversity will be prepared to detail all construction-phase habitat protection, supervision and impact avoidance measures to be adopted, including:
 - Sensitive working methods during Site clearance and construction to avoid impacts to protected species; and
 - Installation and maintenance of BPZs during construction to protect retained habitats;
 - A LEMP will be produced which will detail operation phase mitigation, compensation, enhancement, management and monitoring measures;
 - Maintenance of undeveloped buffer zones at Site boundaries and along retained hedgerow and woodlands during construction and operational phases;
 - Ensure retained and newly created hedgerows remain outside of private ownership and are managed sympathetically for wildlife;
 - Creation of attenuation features and residential gardens, new hedgerow and tree planting, enhancement and infill planting of existing hedgerow providing a range of habitats for different species;
 - [REDACTED] and
 - A sensitive lighting strategy which preserves dark corridors and protects sensitive habitats.
- 4.1.3 The results of the remaining bat and riparian surveys will be provided in an addendum report to this EcIA to inform the planning application. However, it is anticipated that the results of these survey will have minimal changes to the proposed mitigation, compensation, enhancement measures for these species.
- 4.1.4 Habitat creation and enhancement measures are proposed, and a separate Biodiversity Net Gain Assessment report has been prepared to identify whether the proposed development delivers a net gain for biodiversity, or whether additional off-site habitat creation/enhancement is required.
- 4.1.5 Additional ecological enhancement measures include:
- Provision of a range of bat and bird boxes, and log piles;
 - Provision of hedgehog access gaps in fences; and
 - Enhancement and in-fill planting of the boundary hedgerow and woodlands.
- 4.1.6 Assuming the successful implementation of the measures, the proposed development can be considered in line with North Hertfordshire Local Plan 2011-2031, as the scheme includes measures to retain and protect important ecological features and ensure their favourable management in the long-term. The proposals also include detailed measures to avoid potential impacts on protected species during the construction and operational phases of the development, as well as providing enhancements to both habitats and species on Site.



APPENDIX A: WILDLIFE LEGISLATION & SPECIES INFORMATION

BADGER

Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended) against damage or destruction of a sett, or disturbance, death or injury to the badgers. The Act defines a sett as "any structure or place which displays signs indicating current use by a badger". The definition of current use is subject to considerable debate. Natural England have produced guidance on the definition of current use. (*Badgers and Development – A guide to best practice and development* . Natural England 2011). Given the ambiguity surrounding the definition in all circumstances we would recommend an assessment of current use is always undertaken by a qualified ecologist. Natural Resources Wales (NRW) have a slightly different definition of current use. Please see the NRW website for further information. Penalties for offences against badgers or their setts include fines of up to £5,000 and/or up to six months in prison.

Disturbance of badgers could be caused by any digging activity or scrub clearance within 30 metres of an occupied sett and therefore every case needs to be assessed individually. Felling of trees close to a badger sett may also cause disturbance in some situations. Some activities such as pile driving may cause disturbance at even greater distances, and should be discussed with Natural England or NRW.

Licences are issued by Natural England (or NRW in Wales) to allow the disturbance of badgers, and the destruction of their setts in certain circumstances, in relation to development. Full planning permission must be obtained before a licence application will be considered. Although licences can be applied for at any time of year, disturbance of badgers or exclusion of badgers from a sett can only take place between 1 July and 30 November, to avoid the breeding season when dependant young may be underground. This restriction may be relaxed in some cases where a sett is seasonal and badgers can be shown to be absent from a sett at that time of year.

This report contains information of a confidential nature relating to the location of badger setts. Public access to this data should be restricted to those who have a legitimate need to assess the information and to know the exact situation of the setts rather than simply that badgers are present.

BATS

All 17 species of bat known to breed in England and Wales, and their roost sites, are protected under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure a bat, or to deliberately disturb a bat such that its ability to hibernate, breed or rear young, or such that the species' distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place. Intentional or reckless disturbance of bats in their resting places, and damage to or obstruction of resting places are also offences under the Wildlife and Countryside Act 1981 (as amended). Under UK law a bat roost is "any structure or place which any wild [bat]...uses for shelter or protection". As bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time. Penalties for offences against bats or their roosts include fines of up to £5,000 and/or up to six months in prison.

As a result, development works which are likely to involve the loss of or alteration to roost sites, or which could result in killing of or injury to bats, need to take place under licence. Works which could disturb bats may also be licensable, though this needs to be assessed on a case by case basis, as bats' sensitivity to disturbance varies depending on normal background levels, and the definition of disturbance offences under the Habitats Regulations is complex. In practice this means that works involving modification or loss of roosts (typically in buildings, trees or underground sites) or significant disturbance to bats in roosts are likely to be licensable.

Licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of bats in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

AMPHIBIANS

Great Britain supports seven native amphibian species. The four most widespread species; smooth and palmate newts, common frog, and common toad, receive partial protection under the Wildlife and Countryside Act 1981 (as amended) which prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy. The great crested newt, pool frog and natterjack toad are also fully protected in England and Wales under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Penalties for offences against amphibian species include fines of up to £5,000 and/or up to six months in prison.

Four amphibian species (great crested newt, pool frog, common toad, natterjack toad) are listed as priority species under the UK Biodiversity Action Plan, and are therefore considered to be Species of Principal Importance in England and Wales (excluding the pool frog, which does not occur in Wales) under the Natural Environment and Rural Communities (NERC) Act 2006. All public bodies including local and regional authorities have a duty under this legislation to have regard for the conservation of biodiversity.



GREAT CRESTED NEWT

Great crested newts are protected in England and Wales under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure a great crested newt, or to deliberately disturb a great crested newt such that its ability to hibernate, breed or rear young, or such that the species' distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place for great crested newts. Intentional or reckless disturbance of great crested newts in places of shelter (ponds or terrestrial refuges), and damage to or obstruction of places of shelter are also offences under the Wildlife and Countryside Act 1981 (as amended). Penalties for offences against great crested newts include fines of up to £5,000 and/or up to six months in prison.

As a result, development works which are likely to involve the loss of ponds or terrestrial habitat, or which could result in killing or injury to great crested newts, need to take place under licence. Works which could disturb great crested newts may also be licensable, though this is rarely the case unless loss of great crested newt habitat is also proposed, and should be assessed on a case by case basis. In practice this means that works involving any removal of or significant modification to ponds or terrestrial habitats (typically rough grassland, scrub, hedgerow bases and woodland) supporting great crested newts are likely to be licensable.

Licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of great crested newts in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

REPTILES

All six native reptile species receive protection under the Wildlife and Countryside Act 1981 (as amended). The four more common species (common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix*) receive partial protection which makes it an offence to intentionally kill or injure a reptile. The two other reptile species (smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*), both of which are rare with very restricted UK ranges receive full protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Penalties for offences against reptile species include fines of up to £5,000 and/or up to six months in prison.

Works such as site clearance or topsoil stripping which could result in killing or injury of reptiles could be considered result in an offence unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on common reptile species despite these mitigation measures being in place would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence. Works which could affect smooth snakes or sand lizards, or their habitats, would need to take place under licence from Natural England or Natural Resources Wales. However sites supporting smooth snakes or sand lizards are very rarely affected by development proposals.

In practice, mitigation for impacts of development on common reptiles generally comprise one or more of the following techniques: displacement, in which reptiles are encouraged to move to suitable retained habitat by changing the management of areas affected by development; exclusion, where reptile-resistant fencing is provided between a development site and suitable retained habitat allowing reptiles to be trapped from the development footprint and released elsewhere on the site; and translocation, where animals are trapped from a development site and released on another suitable site nearby. Reptile mitigation proposals, particularly those involving translocation of animals, should be agreed in advance with the local planning authority.

BIRDS

All British birds, their nests and eggs (with certain exceptions) are protected under the Wildlife & Countryside Act 1981 (as amended) which makes it an offence to: intentionally kill, injure or take a wild bird; intentionally take, damage or destroy nests which are in use or being built; intentionally take or destroy birds' eggs; or possess live or dead wild birds or eggs. A number of species receive additional protection through inclusion on Schedule 1 of the Wildlife and Countryside Act; for these it is also an offence to intentionally or recklessly disturb birds while nest building, or at a nest containing eggs or young, or to disturb the dependant young of such a bird. Penalties for offences against bird species include fines of up to £5,000 and/or up to six months in prison.

General licences for control of some bird species are issued by Natural England and Natural Resources Wales in order to prevent damage or disease, or to preserve public health or public safety, but it is not possible to obtain a licence for control of birds or removal of eggs/nests for development purposes. Consequently if nesting birds are present on a development site when works are programmed to start it is usually necessary to delay works, at least in the areas supporting nests, until any chicks have fledged and left the nest. It is usually possible, once chicks have hatched, for an experienced ecologist to predict approximately when they are likely to fledge, in order to inform programming of works on site.

OTTER

Otters and their holts are protected in England and Wales under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure an otter, or to deliberately disturb an otter such that its ability to breed or rear young, or such that the species' distribution, were significantly affected. It is also



an offence to damage or destroy any breeding site or resting place. Intentional or reckless disturbance of otters in their holts, and damage to or obstruction of holts are also offences under the Wildlife and Countryside Act 1981 (as amended). Penalties for offences against otters or their holts include fines of up to £5,000 and/or up to six months in prison.

Any development works which are likely to involve the loss of holts, or which could result in killing of or injury to otters (which are only likely to occur extremely rarely), need to take place under licence. Works which could disturb otters may also be licensable, though this is also rarely the case as the majority of developments on watercourses and coastal areas where otters are present can be carried out in a way which avoids significant disturbance.

Where it is necessary, licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of otters in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

WATER VOLE

Water voles *Arvicola amphibius* receive protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to: intentionally kill, injure, or take a water vole; intentionally or recklessly disturb a water vole whilst in its place of shelter; intentionally or recklessly damage, obstruct or destroy a water vole's place of shelter; or intentionally or recklessly obstruct access to a place of shelter. Penalties for offences against water voles include fines of up to £5,000 and/or up to six months in prison.

Works such as watercourse re-profiling, installing culverts, or topsoil stripping close to watercourses and ponds which could result in destruction or obstruction of burrows could be considered reckless, and/or could be considered intentional if water voles are killed or injured, unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on water voles despite these mitigation measures being in place would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence.

In practice, mitigation for impacts of development on water voles generally comprise one or more of the following techniques: displacement, in which water voles are encouraged to move to suitable retained habitat by changing the management of areas affected by development; exclusion, where water vole-resistant fencing is provided between a development site and suitable retained habitat allowing animals to be trapped from the development footprint and released elsewhere on the site; and translocation, where animals are trapped from a development site and released on another suitable site nearby. Water vole mitigation proposals, particularly those involving translocation of animals, should be agreed in advance with Natural England or Natural Resources Wales.

PLANNING POLICY IN RELATION TO BIODIVERSITY - ENGLAND

The National Planning Policy Framework (NPPF), was published in March 2012 and revised in July 2021. Additional guidance can be found online at <http://planningguidance.planningportal.gov.uk/blog/guidance/>. The NPPF simplifies and collates a number of previous planning documents and outlines the government's objective towards biodiversity.

The NPPF identifies ways in which the planning system should contribute to and enhance the natural and local environment (Paragraph 174), including:

- (a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- (e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- (f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate, protecting and enhancing valued landscapes, geological conservation interests and soils;

It also emphasises the importance of conserving biodiversity and areas covered by landscape designations (Paragraph 176):

Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty. The conservation of wildlife and cultural heritage are important considerations in all these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

When determining planning applications, the NPPF states that local planning authorities should aim to conserve and enhance biodiversity (Paragraph 175) by applying principles including:



- (a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- (b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- (c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶ and a suitable compensation strategy exists; and
- (d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate..

The following should be given the same protection as habitats sites:

- (a) potential Special Protection Areas and possible Special Areas of Conservation;
- (b) listed or proposed Ramsar sites⁷; and
- (c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

There is a general presumption in favour of sustainable development within the NPPF. It is noted in Paragraph 182 that this presumption does not apply where the plan or project is likely to have a significant effect on a habitat site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them".

The Environment Act (2021) was passed into law in November 2021. This Act is comprised of 8 Parts and sets out targets for conservation and environmental betterment along with a system for their implementation, including the creation of a new Office for Environmental Protection (OEP). Of particular pertinence to Ecology is Part 6 – Nature and biodiversity, which includes a mandatory requirement for developments to deliver a minimum 10% biodiversity net gain (as quantified through an approved metric such as the Defra 3.0 metric). Such gains must be secured for a minimum of 30 years post-completion of development.

For most schemes, Net Gain shall be secured through an amendment to the Town and Country Planning Act, which is likely to be passed into law in 2023. Nationally Significant Infrastructure Projects (NSIPs) will also be subject to this requirement, but this will be secured through the Planning Act 2008, which means that for NSIPs the mandatory net gain requirement will not be in place until 2025. Certain small schemes are exempt from the requirement for delivering net gain.

It is important to note that in the meantime, Local Planning Authorities across the country have already adopted their own, differing policies regarding net gain. Several stipulate no net loss as a minimum, whilst others have 10% or even 20% requirements.

ECOLOGICAL ENHANCEMENTS

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity can include restoring or enhancing a population or habitat".

In England, the National Planning Policy Framework (NPPF), issued in July 2021, states that the planning system should contribute to "minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;. It also states that "opportunities to incorporate biodiversity in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity".

UK BIODIVERSITY ACTION PLANS

The UK Biodiversity Action Plan (UK BAP) 2011 is a policy first published in 1994 to protect biodiversity and stems from the 1992 Rio Biodiversity Earth Summit. The policy is continuously revised to combine new and existing conservation initiatives to conserve and enhance species and habitats, promote public awareness and contribute to international conservation efforts. Each plan details the status, threats and unique conservation strategies for the species or habitat concerned, to encourage spread and promote population numbers.



Species or habitats identified as priorities under the UK Biodiversity Action Plan receive some status in the planning process through their identification as Species/Habitats of Principal Importance in England and Wales, under the Natural Environment and Rural Communities (NERC) Act 2006 (as amended).

Current planning guidance in England, the National Planning Policy Framework, does not specifically refer to Species or Habitats of Principal Importance, though it includes guidance for conservation of biodiversity in general. Supplementary guidance is available online at <http://planningguidance.planningportal.gov.uk/blog/guidance/> and this guidance indicates that it is 'useful to consider' the potential effects of a development on the habitats or species on the Natural Environment and Rural Communities Act 2006 section 41 list.

PROTECTED PLANTS

All wild plants receive some protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence for any unauthorised person to intentionally uproot any wild plant. Additionally, certain rare species of plants listed on Schedule 8 of the Act are given greater protection. For these species, it is an offence to intentionally pick, uproot or destroy them, or to possess or sell them (live or dead), or anything derived from them. Penalties for offences under this legislation include fines of up to £5,000 and/or up to six months in prison.

Schedule 8 of the Act is reviewed every 5 years, but currently it includes 185 species or sub-species of vascular plants, bryophytes (mosses, liverworts and hornworts), lichens and stoneworts (see www.jncc.gov.uk for current list), all protected due to their rarity and/or restricted distributions.

Works which could result in uprooting or destruction of plants listed on Schedule 8 of the Act could result in an offence being committed, unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on Schedule 8 plants despite these mitigation measures being in place, and impacts on other plant species during development works, would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence.

In practice, the mitigation measures required on the very rare occasions when Schedule 8 plants are affected by development proposals will be determined by the ecological requirements of the species concerned, and any mitigation strategy should be agreed in advance with Natural England or Natural Resources Wales.

THE HEDGEROWS REGULATIONS

In England and Wales the Hedgerows Regulations (1997) as amended confer a level of protection on hedgerows (though hedgerows within or bordering domestic gardens are excluded), particularly those hedgerows classified as 'Important' under the legislation. The Regulations require those wishing to remove hedgerows to submit a Hedgerow Removal Notice to the Local Planning Authority (LPA), which will then determine whether the hedgerow affected is classified as 'Important' under the Regulations. If it is, the LPA will either approve the proposed hedgerow removal, or issue a retention notice. It is an offence to remove or destroy a hedgerow which is subject to a retention notice, or to remove one without a removal notice.

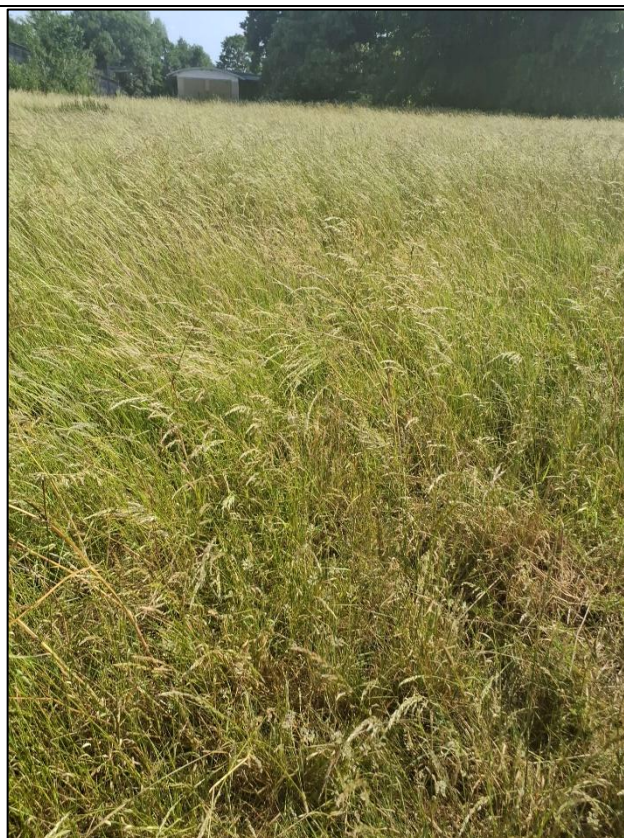
Routine management of hedgerows, removal of hedgerows for development which has been granted planning consent, and certain other situations are allowed under the Regulations, which also specifically exclude hedgerows within or bordering domestic gardens. Determination of whether a hedgerow should be classified as 'Important' is based on a number of criteria including assessment of its likely historic value (e.g. old parish boundary or part of an ancient monument), ecological value (e.g. presence of protected species, and/or diversity of tree/shrub species in the hedgerow), and landscape value (e.g. associated with a public footpath, or being associated with hedgebanks, ditches, hedgerow trees etc).

Ancient and species-rich hedgerows are listed as a priority habitat in the UK Biodiversity Action Plan (2011)

APPENDIX B: PHOTOGRAPHS OF SITE FEATURES



Photograph B1: Indicative view of short-grazed ONG (G2 and G5)



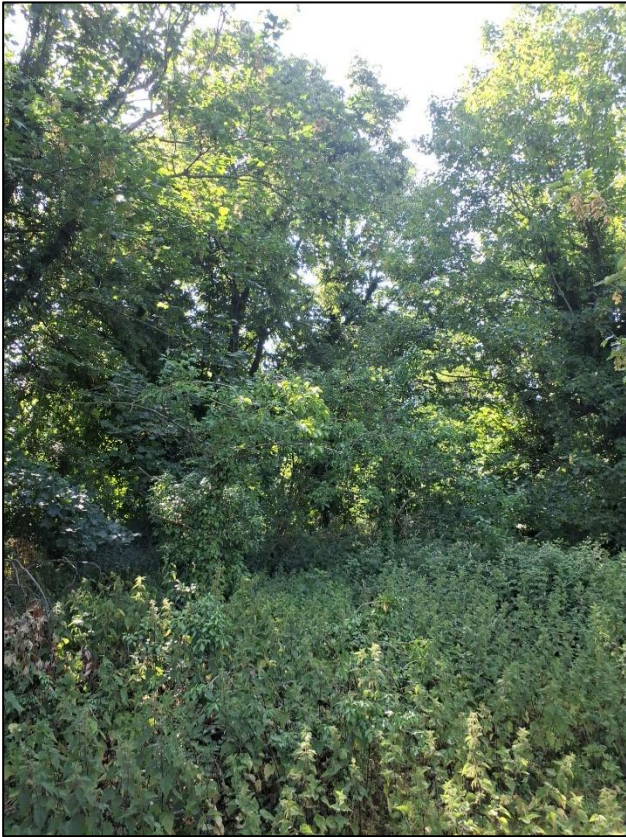
Photograph B2: Indicative view of tussocky ONG (G3 and G6)



Photograph B3: Other Woodland; Broadleaved habitat (W1 and W3)



Photograph B4: Southern woodland parcel (W5 and W6)



Photograph B5: Northern woodland parcel (W4)



Photograph B6: Mixed scrub (S4)



Photograph B7: Indicative view of bramble scrub (S1, S2, S3, S5)



Photograph B8: Indicative view of tall forbs (O1-O3)



Photograph B9: Area of 52 small trees (at G6; TN1)



Photograph B10: River Oughton



Photograph B11: Nearest main sett entrance to the field (SE1)



Photograph B12: Partially-used main sett entrances (SE1)



APPENDIX C: LNRS MAPPING





In order to do this, the LNRS sets strategic priorities for nature. These are targets for all of us to work towards that will have the greatest positive impact on helping nature. Each of these priorities can be supported through a number of actions. These actions are mapped to areas where they can have the greatest impact on nature. This map shows all mapped actions across the country.

Within the strategy there are 10 different habitat groups. Each habitat group has priorities and actions mapped.

Grassland 3



🔍 Zoom to

Action	Create more good quality neutral grassland
Action Identification	Grassland 3

For Further Information [View in Strategy Document](#)





In order to do this, the LNRS sets strategic priorities for nature. These are targets for all of us to work towards that will have the greatest positive impact on helping nature. Each of these priorities can be supported through a number of actions. These actions are mapped to areas where they can have the greatest impact on nature. This map shows all mapped actions across the country.

Within the strategy there are 10 different habitat groups. Each habitat group has priorities and actions mapped.

Broadleaved Woodland 4



Zoom to

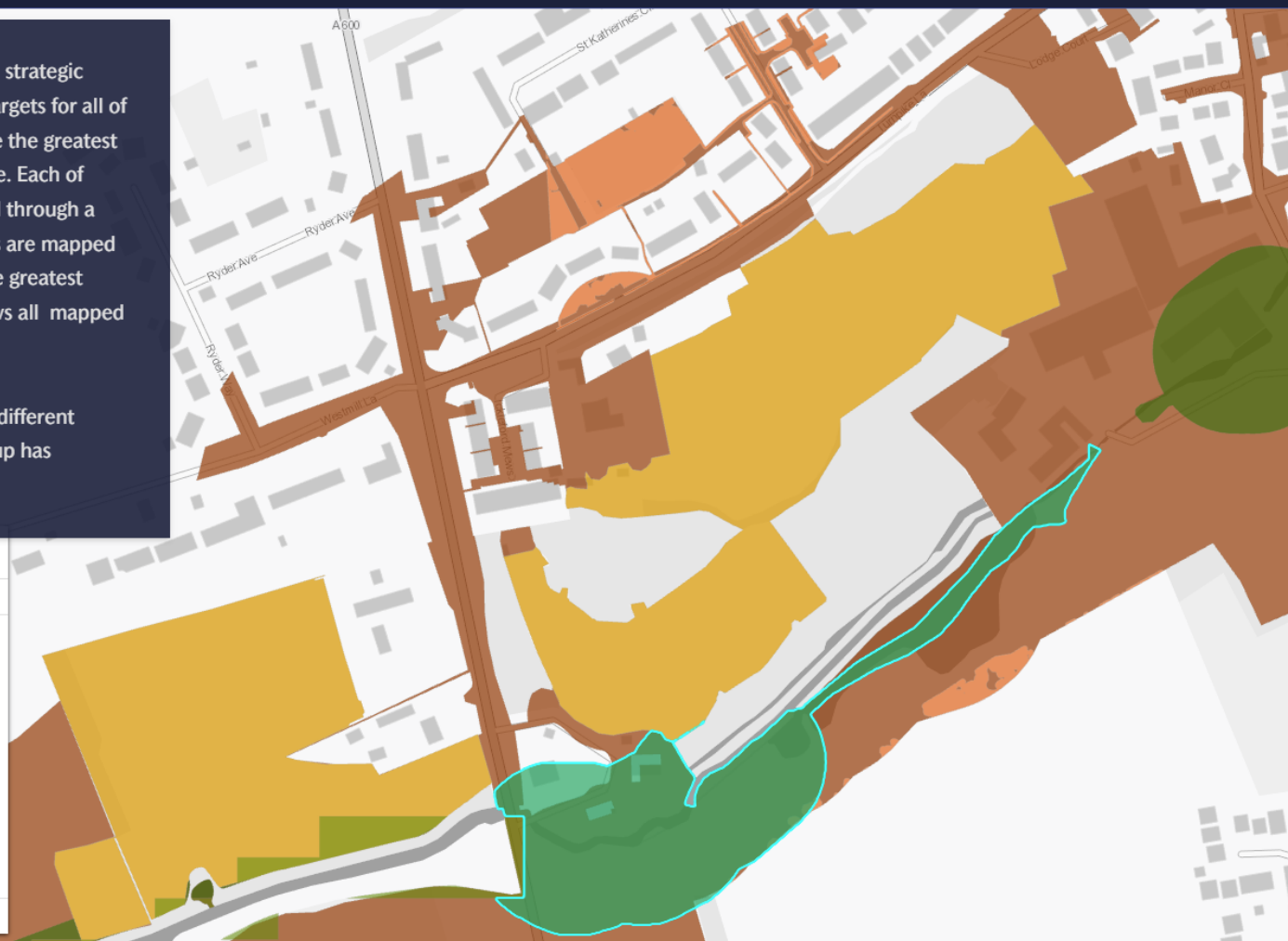
Action
Create and restore wet woodlands and riparian corridor woodlands to contribute to habitat connectivity and improve water temperature and quality and help control flooding, nutrient run-off and silt deposition.

Action Identification
Broadleaved Woodland 4

For Further Information [View in Strategy Document](#)

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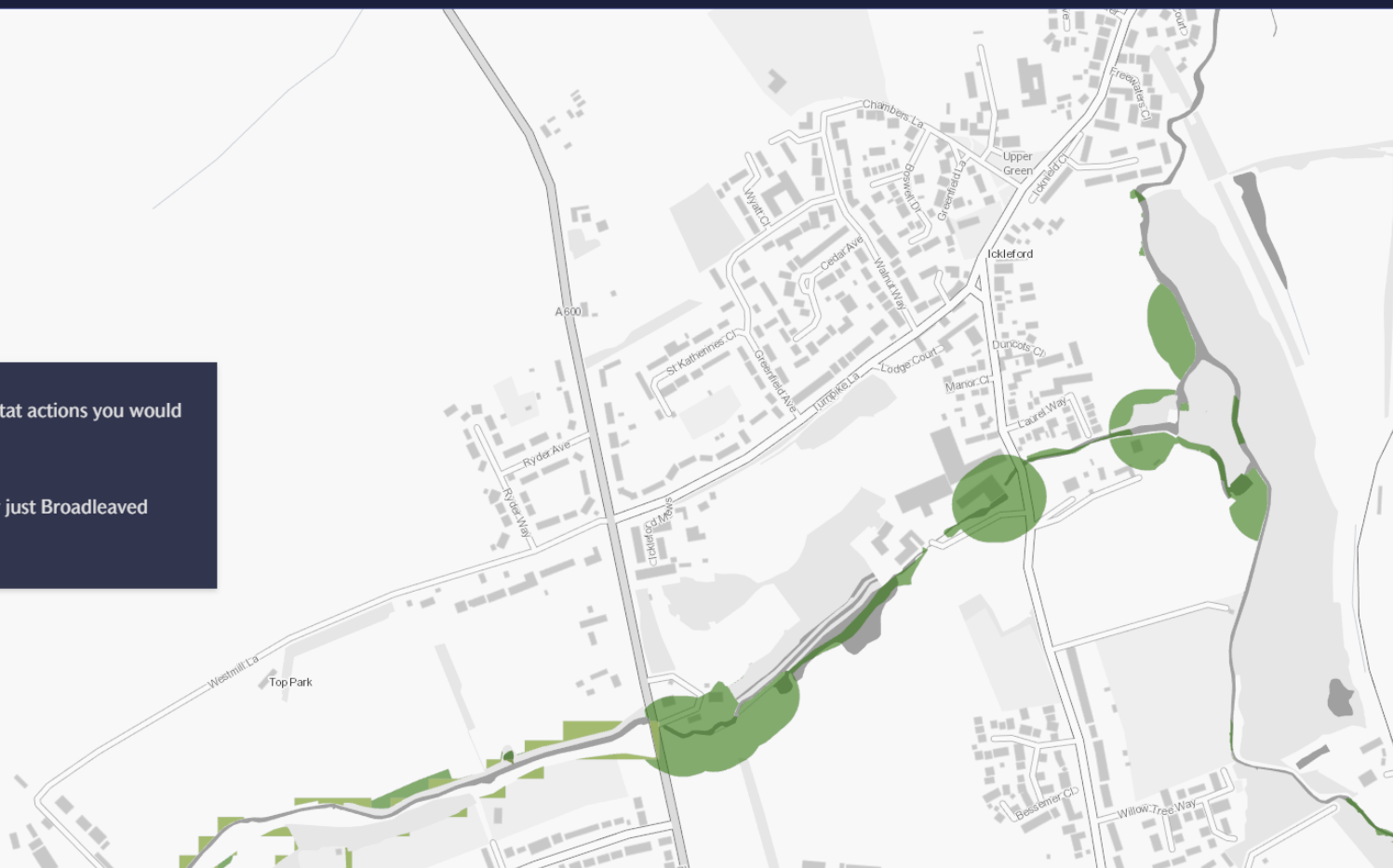
1 of 2





You can select which habitat actions you would like to see

For example you can view just Broadleaved Woodland Actions.



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