



Preliminary Ecological Appraisal
**Land North of Camp Road, Upper
Heyford**

For

David Wilson Homes Ltd

Report Ref.: DWH001-029-003/001/002

April 2024

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1. Summary

- 1.1.1** David Wilson Homes Ltd is preparing a planning application for a development of 123 residential dwellings at a site in Upper Heyford, Oxfordshire. The site location is shown on Figure 1.
- 1.1.2** Thomson Environmental Consultants was commissioned to undertake a Preliminary Ecological Appraisal of the site, including an ecological desk study and habitat survey. This appraisal informs the assessment of potential effects of the project on biodiversity and ecological features including protected species, species of conservation concern, designated sites, and priority habitats for nature conservation.
- 1.1.3** Records for statutory designated sites and priority habitats were collated for a 2km study area from online data sets and desk study records for non-statutory designated sites, protected species and species of conservation concern were requested from the local environmental records centre for a 1km study area. A search was also undertaken for the presence of waterbodies within a 250m study area. Study areas are shown on Figures 1 and 2.
- 1.1.4** The main findings of the desk study were that the site is within 2km of two statutory designated sites of national importance, both of which are Sites of Special Scientific Interest. The closest designated site with a statutory designation is Ardley Trackways which is 1.81km from the site. Furthermore, one non-statutory designated sites is present within the study area; Upper Heyford Airfield Local Wildlife Site is located 0.60km from the site. The location of designated sites within the study area is shown on Figure 1.
- 1.1.5** The desk study found records of priority habitats for nature conservation within the 2km study area. These comprised deciduous woodland, lowland calcareous grassland and traditional orchard. The closest priority habitat to the site is lowland mixed deciduous woodland, located 0.22km from the site. Records of ancient woodland were also recorded within the study area, the closest being 1.43km from the site. Locations of priority habitats, including ancient woodland, are shown on Figure 1.
- 1.1.6** Several waterbodies are also present within 250m of the site. Standing waterbodies may have the potential to support breeding populations of great crested newt and other amphibian species. The location of waterbodies is shown on Figure 2.
- 1.1.7** Records of 36 protected species and species of conservation concern were identified within the 1km study area, comprising two terrestrial invertebrate species, one amphibian species, two reptile species, 25 bird species and six mammal species.
- 1.1.8** During the habitat survey the dominant habitats on site were found to be ploughed arable land, other neutral grassland, species-rich native hedgerow, other native hedgerow, and artificial unvegetated land with an unsealed surface. The habitat survey results are shown on Figure 3 and photographs are provided on Figure 4.
- 1.1.9** The site was found to contain suitable habitat for great crested newt, reptiles, breeding birds and roosting, commuting and foraging bats. Mitigation measures will be in place to ensure that the development of the site will not result in an adverse effect on biodiversity, including offences under legislation and a contravention of planning policy regarding protected species and species of conservation concern.

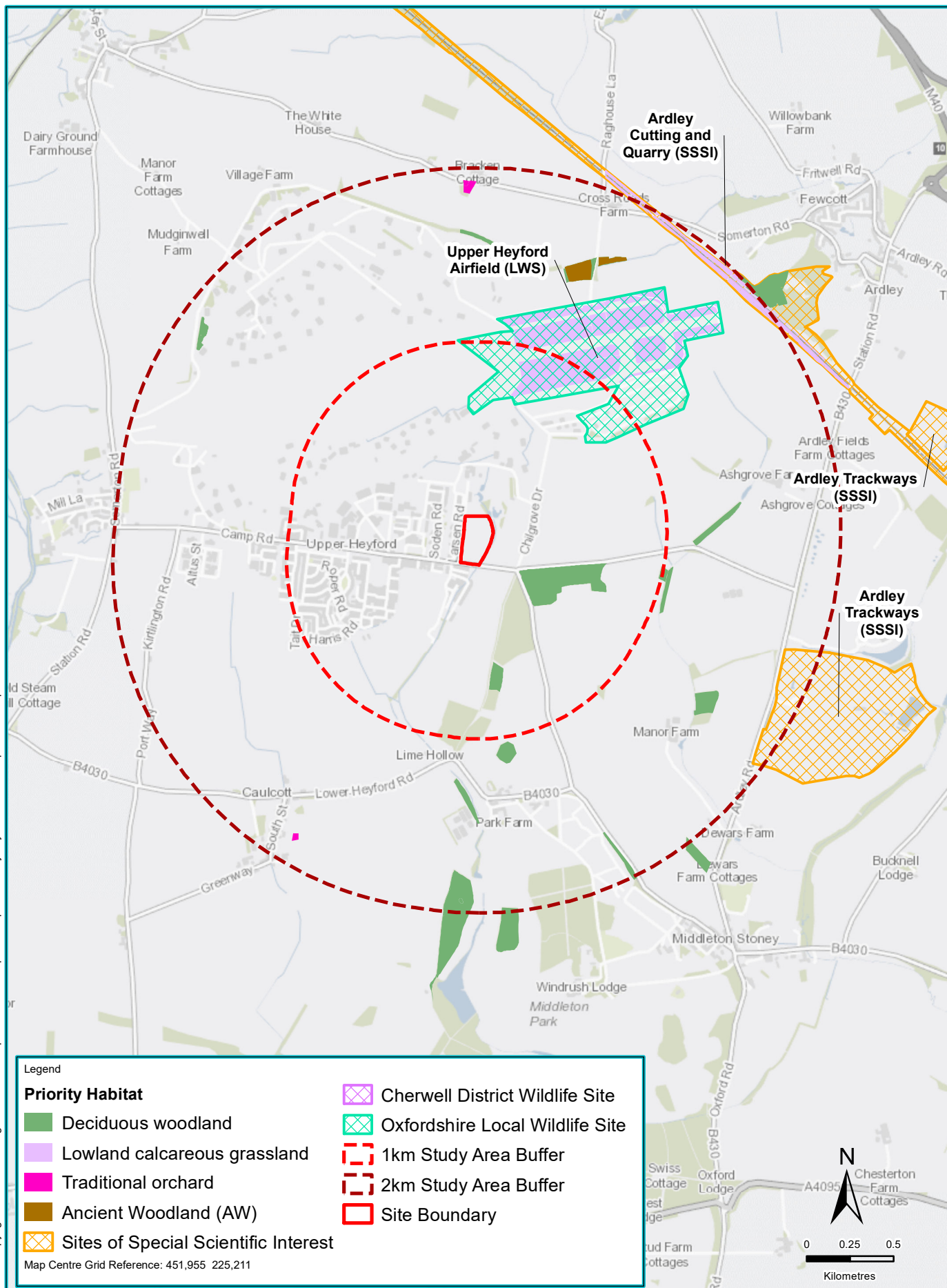
1.1.10 Recommendations designed to enable compliance of the project with legislation and planning policy in relation to ecological features and biodiversity are summarised in Table 1.1. Further avoidance, mitigation or compensation measures may be required following any further site surveys.

Table 1.1: Summary of results and recommendations

Ecological Feature	Desk and Field Study Summary	Recommendation
Statutory designated sites	The nearest statutory designated site is Ardley Trackways Site of Special Scientific Interest, located 1.81km from the site.	Control of off-site emissions of sediment, dust and chemicals.
Non-statutory designated sites	The nearest non-statutory designated site is Upper Heyford Airfield Local Wildlife Site, located 0.60km from the site.	Control of off-site emissions of sediment, dust and chemicals.
Priority habitats and ancient woodland	The nearest parcel of priority habitat/ancient woodland is lowland mixed deciduous woodland, located 0.22km from the site	Control of off-site emissions of sediment, dust and chemicals.
Waterbodies within 250m	There are several waterbodies within 250m of the site.	Control of off-site emissions of sediment, dust and chemicals. See recommendations for great crested newt.
Badger	No records of badger in the desk study, however the site contains suitable foraging and commuting habitat.	Precautionary measures during construction to prevent harm to badger.
Birds	Records of breeding bird species were returned in the desk study and there is suitable nesting habitat on site.	Clearance of suitable nesting habitat outside of the bird breeding season or nesting bird checks prior to removal of nesting birds habitat in nesting season.
Bats	Records of bat species returned in the desk study and there is suitable habitat for roosting, commuting and foraging bats on site.	Further survey to assess the potential of trees on the site to support roosting bats. As of April 2024, this has been completed.
Great crested newt	Records of great crested newt were identified in the desk study, including records in the ponds immediately adjacent to the site, and the site contains suitable resting habitat for this species. Four ponds/lakes and six ditches are present within 250m.	Registration of the site under the NatureSpace District Level Licensing Scheme.

Ecological Feature	Desk and Field Study Summary	Recommendation
Hedgehog and common amphibians	The site contains suitable habitat for hedgehog and common amphibians.	Check of suitable habitat in advance of works and relocation if required
Reptiles	Records of reptiles on site and small areas of suitable habitat are present on site which could be impacted.	Precautionary measures during construction to prevent harm to reptiles.

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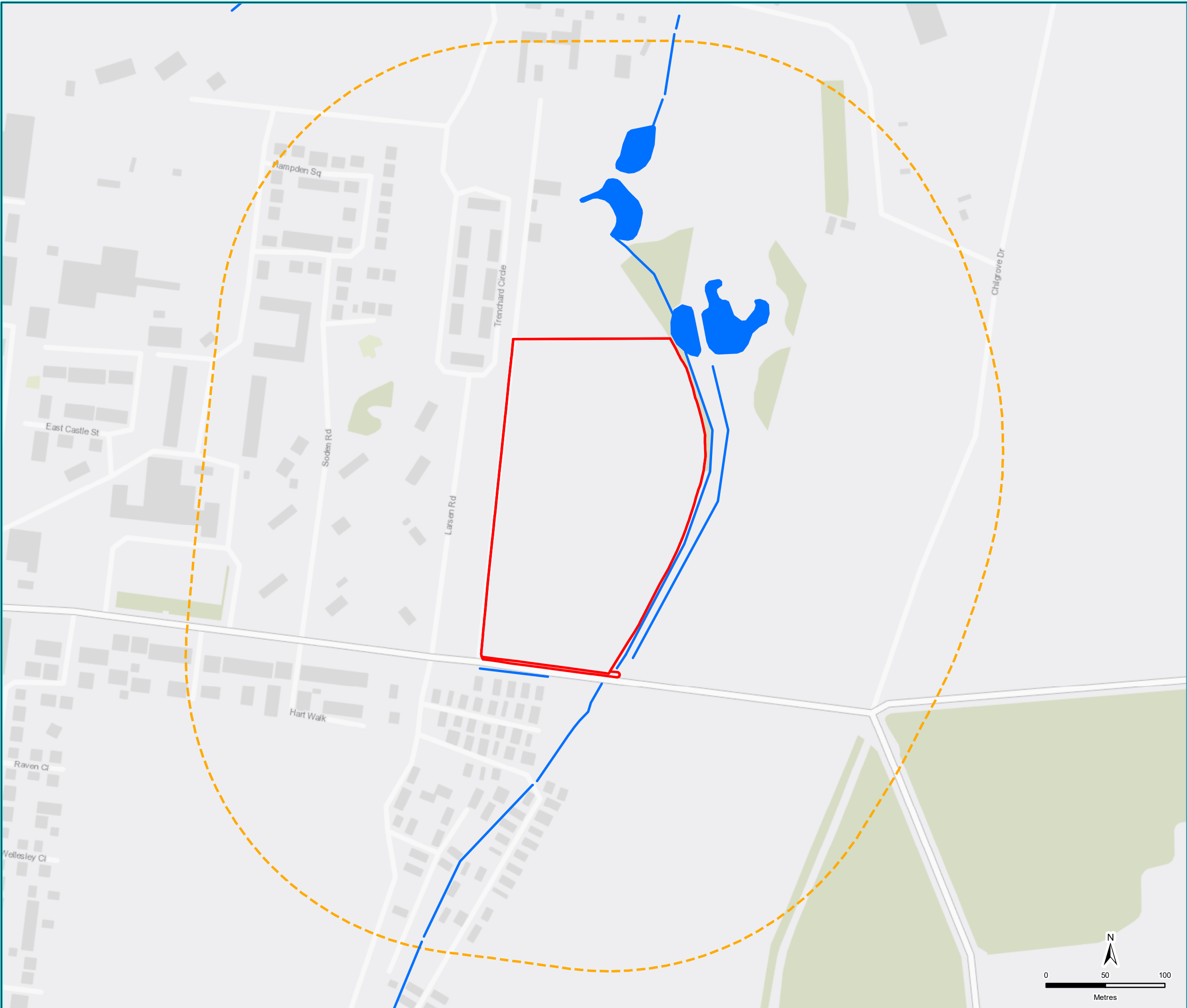
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Figure Number	1	Scale at A4	1:30,000	
Figure Title	Site Location, Study Area and Desk Study Results	Drawn	AS	Checked
		Date	23/10/2023	Date
			23/10/2023	

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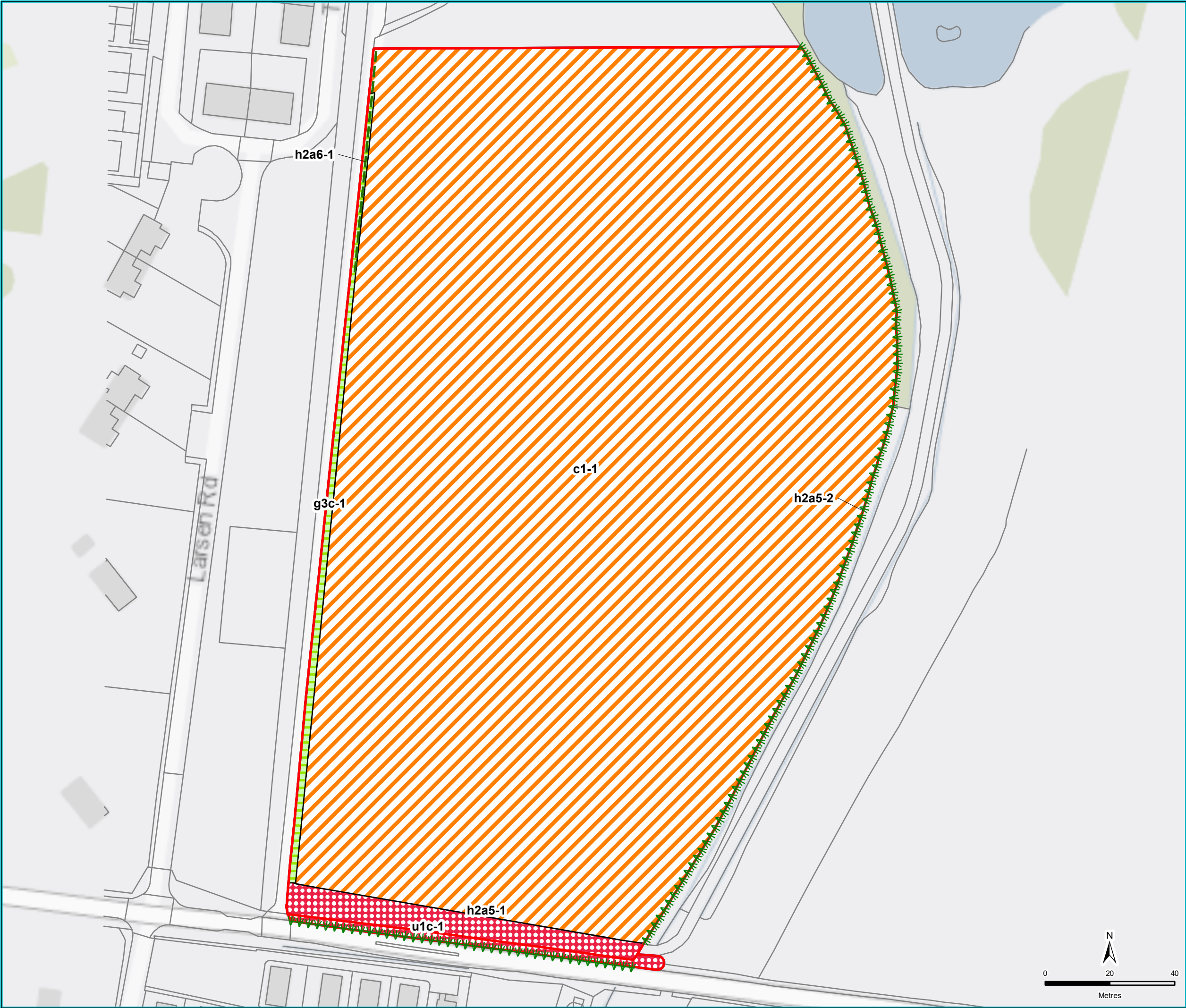


- Legend
- Waterbodies
 - 250m Study Area Buffer
 - Site Boundary

Site Grid Reference: 451,945 225,849
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Figure Title Waterbodies with 250m	

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- Legend
- h2a5 - Species-Rich Native Hedgerow
 - h2a6 - Other Native Hedgerow
 - c1 - Arable and Horticulture
 - g3c - Other Neutral Grassland
 - u1c - Artificial Unvegetated Unsealed Surface
 - Survey Extent
 - Site Boundary

Site Grid Reference: 451,945 225,849

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This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a UK Habitat Classification survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

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Client
David Wilson Homes

Figure Number
3

Figure Title
**UK Habitat
Classification Survey Results**



Photograph 1:
c1-1 facing north west



Photograph 2:
g3c-1 facing north



Photograph 3:
h2a5-1 and u1c-1 facing east



Photograph 4:
h2a5-2 and c1-1 facing north



Photograph 5:
h2a6-1 facing south

Client	David Wilson Homes Southern		Drawing Ref	DWH001-029-003	
Figure Number	Figure 4		Drawn	SM	Checked
Figure Title	Photographs of the Site				AS
			Date	27/10/2023	

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2. Introduction

2.1 Context

- 2.1.1** This report presents the findings of an updated Preliminary Ecological Appraisal (PEA) undertaken to identify potential ecological constraints relating to the project proposal for the construction of 123 residential dwellings and associated hard and soft landscaping of the land north of Camp Road, Upper Heyford, Bicester, OX25 5BP (central grid reference: SP 51944 25847).
- 2.1.2** During the ecological desk study, designated sites and priority habitats¹ for nature conservation are identified within a defined study area of the proposed works and the potential of the project to affect those sites and habitats is discussed. Records for protected species and species of conservation concern² are collated to identify potential effects of the project and inform requirements for further surveys if necessary. During the habitat survey undertaken by a suitably qualified ecologist, the habitats present on the site are identified and mapped to determine the baseline biodiversity metric value for the site, and the suitability of the site to support protected species and species of conservation concern is assessed.
- 2.1.3** The report has been prepared by Thomson Environmental Consultants on behalf of David Wilson Homes Ltd.

2.2 Project Description

- 2.2.1** David Wilson Homes Ltd is preparing a planning application for the construction of 123 residential dwellings and associated hard and soft landscaping, including the planting of native shrub and wildflower meadows, and the creation of swales. The site currently consists of a greenfield divided by fences and surrounded by hedgerows. The project will require the clearance of the existing field habitats and the removal of the southern and western hedgerows, however, the eastern hedgerow will be retained. These proposals are hereafter referred to as “the development”.
- 2.2.2** The project will require planning consent from Cherwell District Council.

2.3 Site Description

- 2.3.1** The area of land upon which the development will be undertaken is 4.2ha and currently consists of a ploughed field and surrounding hedgerows. This area of land is hereafter referred to as “the site”. The site location is shown on Figure 1.

¹ Priority habitats are habitats listed on the Section 41 list of the Natural Environment and Rural Communities Act 2006 (the NERC Act) as Habitats of Principal Importance in England or listed in local Biodiversity Action Plans.

² Species of conservation concern are species identified on published lists as being rare, vulnerable or declining. This includes priority species which are species which are listed on the Section 41 list of the NERC Act as Species of Principal Importance in England or species which are listed in local biodiversity action plans. Protected species are species protected under legislation.

2.4 Development Background

- 2.4.1 A previous planning permission for the site, submitted in two phases (15/01357/F and 21/03523/OUT), which included PEAs and Biodiversity Net Gain (BNG) calculations, was submitted for a total of 120 units, and DWH proposes to increase this by three units to 123 units.
- 2.4.2 This PEA report considers the outcome for biodiversity of the proposed development of 123 units.

2.5 Ecology Background

- 2.5.1 Aspect Ecology produced a series of reports for the previous planning application on behalf of Pye Homes. A PEA was carried out on the site in 2021 (Aspect Ecology, 2021a; 2021b) and concluded with recommendations such as hedgerow and tree protection, district level licensing for great crested newts (*Triturus cristatus*) and pollution prevention.
- 2.5.2 Ecological enhancements were also suggested (Aspect Ecology 2021a; 2021b) including new planting, wildflower grassland, bat boxes, hedgehog (*Erinaceus europaeus*) nest domes, bird boxes, insect boxes and habitat piles.
- 2.5.3 A BNG assessment report based on the Natural England Biodiversity Metric 3.1 (Panks *et al.*, 2022) was carried out for the site in 2022 (Aspect Ecology, 2022a; 2022b). A net loss in area-based habitat units was calculated for the site, while a net gain was calculated for linear-based habitat units (hedgerows).
- 2.5.4 An updated BNG assessment report has been commissioned and prepared by Thomson Environmental Consultants in 2023 for the 126 unit development. This is available as a separate report, and BNG is not considered any further in this report.

2.6 The Brief and Objectives

- 2.6.1 David Wilson Homes Ltd commissioned Thomson Environmental Consultants on 6th October 2023 to undertake an updated PEA of the site, comprising:
- An evaluation of the potential of the habitats on site to support important species, using data collected during the site visit undertaken in September 2023 by Thomson Environmental Consultants;
 - An ecological desk study including identification of statutory and non-statutory designated sites within 2km of the study area and records of important species within 1km of the study area, using data purchased from the local biological record centre; and
 - A report, supported by appropriate digitised mapping, that details the methods and results of the desk study and habitat survey. The report will include consideration of any relevant legislation and planning policies, with recommendations for necessary compliance measures and for any further surveys that are required.
- 2.6.2 The objective of the appraisal was to identify constraints and opportunities related to ecology and biodiversity with respect to the proposed development of the site as detailed in the project description.

2.7 Limitations

- 2.7.1** The survey was carried out on 25th September 2023 which could be considered a sub-optimal time of year for habitat surveying. This is not considered to be a significant limitation, however, as the species recorded at this time were a suitable representation of the habitats present on site and the habitats could still be classified and assessed according to the UK Habitat (UKHab) Classification System methodology.
- 2.7.2** Following a site visit in March 2024, h2a5-1 was reclassified as h2a5 species-rich native hedgerow, instead of the h2a5 (11) species-rich native hedgerow (hedgerow with trees), due to an error in the original baseline assessment. No trees were present in the hedgerow, and there were no signs that there ever had been.
- 2.7.3** The species data collated during the desk study is mainly derived from records submitted by members of the public and *ad hoc* surveys undertaken by volunteers. Therefore, it should not be taken as a definitive list of the protected species and other species of conservation concern that occur in the local area.
- 2.7.4** This report is based on the development boundary and layout shown on 'General Arrangement' (ref: 2099.16 / 01J). Subsequent changes may result in a requirement to reassess the potential impacts of the development and the requirements for avoidance, mitigation and enhancement.

3. Planning Policy and Legislation

3.1.1 National legislation and planning policy relating to ecology and biodiversity, relevant to the proposed works, is summarised below and further detail is given in Appendix 1. Local policies relevant to the project are described below.

3.1.2 This report refers to 'ecological features' which include:

- statutory designated sites for nature conservation;
- non-statutory designated sites for nature conservation;
- priority habitats for nature conservation, including ancient woodland;
- protected species;
- species of conservation concern; and
- invasive non-native species.

Designated Sites

3.1.3 Designated sites for nature conservation are protected under UK legislation and have different levels of conservation importance.

3.1.4 Statutory designated sites of international importance include **Special Areas of Conservation** (SACs), **Special Protection Areas** (SPAs) and **Ramsar** sites which receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended).

3.1.5 Statutory designated sites of national importance include **Sites of Special Scientific Interest** (SSSIs) which are protected under the Wildlife and Countryside Act 1981 (as amended) (WCA), Countryside and Rights of Way Act 2000 (CRoW Act) and Natural Environment and Rural Communities Act 2006 (NERC Act). **National Nature Reserves** (NNRs) are a selection of the very best parts of England's SSSI's, protected under the WCA and CRoW Act.

3.1.6 Under the WCA it is an offence to damage, disturb or destroy land within a SSSI or disturb wildlife in a SSSI. SSSIs are also protected through the National Planning Policy Framework (NPPF) (2021), which states in Paragraph 108b *"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."*

3.1.7 SSSI's have Impact Risk Zones (IRZ) that exist to help protect SSSI's from physical damage and external pressures caused by development. Development proposals situated within IRZs may require consultation between the Local Planning Authority (LPA) and Natural England (NE) to discuss the potential impacts of a proposal upon the designated site.

3.1.8 **Local Nature Reserves** (LNRs) are statutory designated sites of local importance that receive protection under the National Parks and Access to the Countryside Act 1949. They are protected through local planning policy, which protects LNRs from adverse effects of development.

- 3.1.9 Non-statutory designated sites, such as **Sites of Nature Conservation Interest (SNCI)**, **Sites of Interest to Nature Conservation (SINC)** and **Local Wildlife Sites (LWSs)** are of local importance. These sites are not protected under legislation. However, local authorities take account of local sites when formulating local plans and when considering planning applications.
- 3.1.10 The importance of sites of biodiversity value is also recognised in Paragraph 174 (a) of the National Planning Policy Framework 2023 (NPPF) which states that *“Planning policies and decisions should contribute to and enhance the natural and local environment by: 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).”*
- 3.1.11 Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 states that:
- *“Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated.”*
 - *“Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity.”*
 - *“Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity.”*
- 3.1.12 In addition, paragraph B.236 of Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 states that:
- *“(…) Areas adjacent to designated sites can be of value as they can form part of the overall ecological unit and may provide important linkages. (…) It is important that any features of value are identified early in the planning process so that adequate measures can be taken to secure their protection. Developers will be expected to incorporate and enhance such features within a site wherever possible and adequate measures should be taken to protect them from damage during construction. Networks of habitats will be protected from development and where possible strengthened by it.”*

Priority Habitats

- 3.1.13 In this report priority habitats for nature conservation include:
- Habitats of Principal Importance listed under Section 41 of the NERC Act;
 - Habitats listed under Local Biodiversity Action Plans (LBAPs); and
 - Ancient woodland.
- 3.1.14 Habitats of Principal Importance are listed under the NERC Act as types of habitat that are of principal importance for the purpose of conserving biodiversity and should therefore be

considered during proposals. Section 179 of the NPPF (2023) states that to protect and enhance biodiversity and geodiversity, plans should *“promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”* Therefore, priority habitats are a material consideration during the planning stage of the development.

3.1.15 Ancient woodland is any area that’s been wooded continuously since at least 1600AD. Ancient woodland, as well as ancient and veteran trees, are regarded as an ‘irreplaceable habitat’³. Paragraph 180(c) of the NPPF states that *“When determining planning applications, local planning authorities should apply the following principles: 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 reasons and a suitable compensation strategy exists...”*

3.1.16 Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 states that

- *“Development which would result in damage to or loss of a site (...) including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity.”*
- *Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity”*

3.1.17 In paragraph B.235 of the Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 it is noted that Sites of regional/local importance comprise (among others):

- *“(...) ancient woodland, aged or veteran trees, and UK Biodiversity Action Plan (BAP) Priority Habitats (habitats of principal importance for the conservation of biodiversity under Section 41 of the NERC Act).”*

Protected Species

3.1.18 Rare and declining plant and animal species in the UK are generally protected under national legislation. Species protected under the Conservation of Habitats and Species Regulations 2017 (as amended) are often referred to as European Protected Species (EPS) because the requirement to protect them under national legislation originally derives from the fact that these species are listed under the European Habitats Directive. These species can be considered to be of international importance because they are rare or declining in Europe as well as the UK. These species are not only protected from killing and injury, but their breeding sites and resting places are also protected. These species include:

³ <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions>

- great crested newt, natterjack toad (*Epidalea calamita*) and pool frog (*Pelophylax lessonae*);
- sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*);
- all bat species;
- dormouse (*Muscardinus avellanarius*); and
- otter.

3.1.19 The WCA also offers protections. In addition to the species listed above, which also receive some protection under the WCA, protection under this legislation is given to prevent killing and injury of:

- common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix helvetica*);
- all wild birds; and
- water vole (*Arvicola amphibius*).

3.1.20 In the case of birds, as well as birds being protected from killing or injury, it is also an offence to take, damage or destroy a nest that's in use or being built, and to take or destroy eggs. Additional protection applies to specific birds listed in Schedule 1 of the WCA, meaning it is also an offence to disturb these species when building a nest or when the nest is active.

3.1.21 Badger (*Meles meles*) receive protection under the Protection of Badgers Act 1992. Whereby it would be an offence to injure or kill a badger, interfere with a badger sett or treat a badger cruelly.

3.1.22 Other mammal species including rabbit (*Oryctolagus cuniculus*), fox (*Vulpes vulpes*) and hedgehog are protected under the Wild Mammals (Protection) Act 1996, which makes it an offence to inflict any unnecessary suffering, including crushing or asphyxiation of a wild mammal.

3.1.23 In paragraph B.235 of the Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 it is noted that:

- “(...) Sites of regional/local importance also include the habitats of those species of principal importance for biodiversity (as identified in Section 41 of the NERC Act).”

3.1.24 Policy ESD 10 also states that:

- “Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value.”;
- “Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably.”; and
- “A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.”

Species of Conservation Concern

3.1.25 Other rare or declining species may not receive strict legal protection but may be recognised on published lists as species of conservation concern that should be protected as a matter of best

practice. Under Section 41 of the NERC Act, the Secretary of State must publish a list of the living organisms which in the Secretary of State's opinion are species of principal importance for the purpose of conserving biodiversity. Planning authorities are required to have particular regard to these species and treat them as a material consideration in the planning process. Most protected species are also listed as species of principal importance. Species of principal importance or species listed on LBAPs are often referred to as 'priority species'.

- 3.1.26** Rare or declining bird species are listed as red or amber in Birds of Conservation Concern (BOCC) (Stanbury *et al.*, 2021) a list that is periodically updated. Species considered of local nature conservation importance may also be listed in LBAPs.
- 3.1.27** Consideration of species of conservation concern during development projects is a requirement of the NERC Act which states that any *"public authority must, in exercising its functions, have regard ... to the purpose of conserving biodiversity"* and *"conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat."*
- 3.1.28** In paragraph B.237 of the Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 it is noted that:
- *"(...) A biodiversity survey and report will also be required where it is likely that previously unrecorded biodiversity interest may be present which could be affected by the development (...) Surveys should include consideration of the site's value as a wildlife corridor and the contribution it makes to ecological networks."*

Invasive Non-Native Species

- 3.1.29** There are 36 species of invasive alien plants that are listed as species of special concern because they cause severe problems for native UK plants and the environment.
- 3.1.30** In the UK it is an offence under the WCA to *"plant or otherwise cause to grow in the wild"* any plant species listed in Schedule 9 of the Act.
- 3.1.31** The Invasive Alien Species (Enforcement and Permitting) Order 2019 gives effect to EU regulations on the prevention and management of the spread of invasive alien species. It lists 66 species which are of special concern.

4. Desk Study

4.1 Methods

- 4.1.1** A study area was defined to cover the site and all land within a 2km buffer area. Records for statutory designated sites and priority habitats were sought for the full 2km study area. Records for non-statutory designated sites, protected species, species of conservation concern and invasive non-native species were sought for a 1km study area. An additional study area with a 250m buffer area was used for the identification of waterbodies. The site location and study areas are shown on Figure 1.
- 4.1.2** The search areas for biological records were deemed to be suitable based on the zone of influence for the works. The zone of influence for a project is defined as the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2017).
- 4.1.3** Publicly available data sets were referenced to identify the location of statutory designated sites and priority habitats, including ancient woodland. Biological records were requested from the Local Environmental Records Centre (LERC) for records relating to species and non-statutory designated sites. The Natural England MAGIC website (<https://magic.defra.gov.uk>) was also consulted for biological records.
- 4.1.4** In addition to the records request, OS mapping was used to identify the presence of running (rivers and streams) and standing (lakes, ponds and ditches) water bodies within the 250m study area.
- 4.1.5** Sources of information were as follows:

Table 4.1: Sources of desk study data

Source	Summary of Information Provided
Thames Valley Environmental Records Centre (TVERC)	Non-statutory designated sites and species records
The Multi-Agency Geographical Information for the Countryside (MAGIC)	Locations of waterbodies, designated sites, protected species licence returns and priority habitats

- 4.1.6** Requests for information were sent to the Thames Valley Environmental Records Centre (TVERC) and the results were received on 9th October 2023.

4.1.7 Where multiple species have been identified, the record with the most recent date has been included. Species records returned by the desk study that have been excluded from this report include:

- Species records whereby the most recent record is older than 10 years;
 - Bird species that are listed in the green or amber list only of Birds of Conservation Concern 5 (Stanbury *et al.*, 2021), with no other protection afforded to them; and
- Fauna protected from sale only under Schedule 5 of the WCA, with no other protection afforded to it.

4.1.8 Potential ecological constraints identified as a result of the desk study are presented in Section 7.

4.2 Results

Designated Sites

4.2.1 There are two statutory designated sites within the study area. The closest of which is Ardley Trackways SSSI. There is one non-statutory designated site, Upper Heyford Airfield LWS, within the study area. Details of statutory and non-statutory designated sites are given in Table 4.2.

4.2.2 Ardley and Heyford Conservation Target Areas (CTA) were identified within the study area, 0.19km East and 0.50km North. CTAs are identified by TVERC in consultation with local authorities, to focus work to restore biodiversity at a landscape scale. The Ardley and Heyford CTA includes but is not limited to the two SSSIs and the LWS included in Table 4.2.

Table 4.2: Designated sites within the study area

Site Name	Designation	Central Grid Reference	Description	Distance and Orientation to Site
National Sites (SSSIs)				
Ardley Trackways	SSSI	SP540248	Designated due to the presence of fossilised trackways formed by the passage of a herd of sauropod and theropod dinosaurs during the Middle Jurassic.	1.81km south-east
Ardley Cutting and Quarry	SSSI	SP538271	It has biological interest associated with limestone grassland, scrub, ancient woodland and wetland habitats. The invertebrate fauna is particularly rich along the railway cutting and it supports a large	1.92km north-east

Site Name	Designation	Central Grid Reference	Description	Distance and Orientation to Site
			population of the internationally protected great crested newt (<i>Triturus cristatus</i>).	
County and Local Sites (LWS)				
Upper Heyford Airfield	LWS	SP519269	The old airbase at Upper Heyford includes a very large area of diverse grassland and includes some species-rich areas which are strongly calcareous in character. In addition to the botanical interest a large number of skylark (<i>Alauda arvensis</i>) appear to be breeding in the grassland and curlew (<i>Numenius arquata</i>), grey partridge (<i>Perdix perdix</i>) and corn bunting (<i>Emberiza calandra</i>) were also noted.	0.60km north

Ancient Woodland

- 4.2.3** Two parcels of ancient woodland were recorded within the study area, which are summarised in Table 4.3 and locations are shown on Figure 1.

Table 4.3: Ancient woodland within the study area

Site Name	Grid Reference	Distance to Site	Description
Kennel Copse	SP52532739	1.43km north-east	Ancient semi-natural woodland
N/A	SP52672747	1.57km north-east	Ancient semi-natural woodland

Other Priority Habitats

- 4.2.4** Three types of priority habitat were identified within the study area, with a total of 39 parcels comprising lowland mixed deciduous woodland, lowland calcareous grassland, and traditional orchard. The habitats are summarised in Table 4.4 and the locations are shown on Figure 1.

Table 4.4: Priority habitats within the study area

Priority Habitat Type	Grid Reference of Nearest Parcel	Distance to Site of Nearest Parcel	Description
Lowland mixed deciduous woodland	SP52282564	0.22km	There are 18 parcels of lowland mixed deciduous woodland within 2km of the site.
Lowland calcareous grassland	SP52332680	0.69km	There are 18 parcels of lowland calcareous grassland within 2km of the site.
Traditional orchard	SP50902413	1.83km	There are 18 parcels of traditional orchard within 2km of the site.

Waterbodies

- 4.2.5** Ten waterbodies were recorded within 250m of site, comprising four ponds or lakes and six ditches (see Figure 2).

Protected Species and Species of Conservation Concern

- 4.2.6** Records of 36 protected species and species of conservation concern were identified within the study area. Details of the species are given in Table 4.5. Records of protected species include great crested newt and brown long-eared bat (*Plecotus auritus*), as well as 25 bird species, including barn owl (*Tyto alba*) and peregrine (*Falco peregrinus*).
- 4.2.7** Records for other species of conservation concern include invertebrate species such as small heath (*Coenonympha pamphilus*) and rugged oil-beetle (*Meloe rugosus*).
- 4.2.8** Grass snake presence was confirmed onsite during previous surveys conducted for the site (Aspect Ecology, 2021a) with a small population recorded.

Invasive Non-Native Species

- 4.2.9** No records for invasive non-native species (INNS) were returned within the study area.

Table 4.5: Species records derived from the desk study

Common Name	Scientific Name	Habitats Regulations ⁴	WCA ⁵	SPI ⁶	BOCC ⁷	Grid Reference	Distance from Site (km)
Amphibian							
Great crested newt	<i>Triturus cristatus</i>	Schedule 2	Schedule 5	✓		SP52022599	0.01
Birds							
Barn owl	<i>Tyto alba</i>		Schedule 1			SP511261	0.68
Bullfinch	<i>Pyrrhula pyrrhula</i>			✓	Amber	SP515264	0.5
Corn bunting	<i>Emberiza calandra</i>			✓	Red	SP515264	0.5
Cuckoo	<i>Cuculus canorus</i>			✓	Red	SP515267	0.76
Curlew	<i>Numenius arquata</i>			✓	Red	SP515267	0.76
Dunnock	<i>Prunella modularis</i>			✓	Amber	SP515264	0.5
Fieldfare	<i>Turdus pilaris</i>		Schedule 1		Red	SP511261	0.68
Greenfinch	<i>Chloris chloris</i>				Red	SP515264	0.5
Grey partridge	<i>Perdix perdix</i>			✓	Red	SP514265	0.64
Hawfinch	<i>Coccothraustes coccothraustes</i>			✓	Red	SP514265	0.64
House martin	<i>Delichon urbicum</i>				Red	SP515264	0.5
House sparrow	<i>Passer domesticus</i>			✓	Red	SP515264	0.5
Lapwing	<i>Vanellus vanellus</i>			✓	Red	SP514265	0.64
Linnet	<i>Linaria cannabina</i>			✓	Red	SP515264	0.5

⁴ The Wildlife and Countryside Act 1981, as amended⁵ The Conservation of Habitats and Species Regulations 2017, as amended⁶ Species of Principal Importance listed under Section 41 of the Natural Environment and Rural Communities Act 2006⁷ The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man (Stanbury *et al.*, 2021)

Common Name	Scientific Name	Habitats Regulations ⁴	WCA ⁵	SPI ⁶	BOCC ⁷	Grid Reference	Distance from Site (km)
Mistle thrush	<i>Turdus viscivorus</i>				Red	SP514265	0.64
Peregrine	<i>Falco peregrinus</i>		Schedule 1			SP514265	0.64
Quail	<i>Coturnix coturnix</i>		Schedule 1		Amber	SP514265	0.64
Red kite	<i>Milvus milvus</i>		Schedule 1			SP515264	0.5
Reed bunting	<i>Emberiza schoeniclus</i>			✓	Amber	SP514265	0.64
Skylark	<i>Alauda arvensis</i>			✓	Red	SP515264	0.5
Spotted flycatcher	<i>Muscicapa striata</i>			✓	Red	SP514265	0.64
Starling	<i>Sturnus vulgaris</i>			✓	Red	SP515264	0.5
Swift	<i>Apus apus</i>				Red	SP515264	0.5
Yellow wagtail	<i>Motacilla flava</i>			✓	Red	SP515267	0.76
Yellowhammer	<i>Emberiza citrinella</i>			✓	Red	SP515264	0.5
Invertebrates							
Rugged oil-beetle	<i>Meloe rugosus</i>			✓		SP52162569	0.18
Small heath	<i>Coenonympha pamphilus</i>			✓		SP5026	0.88
Mammals							
Brown long-eared bat	<i>Plecotus auritus</i>	Schedule 2	Schedule 5	✓		SP514257	0.35
Common pipistrelle bat	<i>Pipistrellus pipistrellus</i>	Schedule 2	Schedule 5			SP514257	0.35
Leisler's bat	<i>Nyctalus leisleri</i>	Schedule 2	Schedule 5			SP514257	0.35
Myotis species	<i>Myotis</i> sp.	Schedule 2	Schedule 5			SP514257	0.35
Noctule bat	<i>Nyctalus noctula</i>	Schedule 2	Schedule 5	✓		SP514257	0.35
Soprano pipistrelle bat	<i>Pipistrellus pygmaeus</i>	Schedule 2	Schedule 5	✓		SP514257	0.35
Reptiles							

Common Name	Scientific Name	Habitats Regulations ⁴	WCA ⁵	SPI ⁶	BOCC ⁷	Grid Reference	Distance from Site (km)
Grass snake	<i>Natrix helvetica</i>		Schedule 5 ⁸	✓		SP520259	0.00
Common lizard	<i>Zootoca vivipara</i>		Schedule 5 ⁸	✓		SP514257	0.35

⁸ Protected from killing, injury, sale, trade and associated activities only

5. Habitat Survey

5.1 Methods

- 5.1.1** A survey area was defined as an area of land of approximately 4.3ha that encompassed the land north of Camp Road that will be directly impacted by the development. The survey area is shown on Figure 2.
- 5.1.2** A survey using the UKHab Classification system (Butcher *et al.*, 2023) was conducted. This is a nationally recognised habitat classification system that is compatible with the DEFRA Biodiversity Metric for calculating biodiversity net gain values (Panks *et al.*, 2023b).
- 5.1.3** The UKHab has five hierarchical levels and includes the identification of priority habitats (Habitats of Principal Importance listed under the Natural Environment and Rural Communities Act 2006) and Annex I habitats as listed under the European Habitats Directive. The five levels are:
- Level 1 - Biomes/major ecosystems (terrestrial, freshwater and coastal);
 - Level 2 - Ecosystem types (i.e. woodland, grassland, heathland and scrub);
 - Level 3 - Broad Habitats, based on those of the UK Biodiversity Action Plan (UKBAP);
 - Level 4 - Habitats, including 47 priority habitats; and
 - Level 5 - Habitats, including Annex I habitats.
- 5.1.4** In addition, non-hierarchical secondary codes were used to provide supplementary information. These included mandatory codes for habitat mosaics/complexes, priority and Annex I habitats that occur in multiple primary habitats and habitat origins (codes 10 - 41), plus any additional relevant secondary codes.
- 5.1.5** During the field survey, the habitats in the survey area were mapped to the highest level possible
- 5.1.6** Table 5.1 below shows the meta-data used for this survey.

Table 5.1: Habitat survey meta-data

Scope and purpose of the survey	Preliminary Ecological Appraisal (PEA)
Area surveyed	See Figure 3
Edition of UKHab used	UKHab v2.0 Professional
Minimum Mapping Unit (MMU)	25m ² for areas, 5m for linear features
Level of UKHab Primary Hierarchy used	Level 5, where possible
List of Secondary Code groups recorded	All secondary codes
Additional attributes recorded	Habitat condition assessment
Map projection and units	See Figure 3
Date of survey	25 th September 2023
Organisation and individual undertaking the survey	Thomson Environmental Consultants, Charlotte Scrivens
References for any existing datasets that have been used	www.magic.gov.uk TVERC

5.1.7 The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

- D Dominant;
- A Abundant;
- F Frequent;
- O Occasional; and
- R Rare.

5.1.8 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2019).

5.1.9 Target notes were made for any features which were too small to map or are of particular ecological interest.

5.1.10 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. However, no specific faunal surveys were undertaken.

5.2 Results

Habitats and Flora

5.2.1 The following UKHab habitat types were identified, with secondary codes given in brackets:

- c1 (10, 517, 600, 612) - Arable and horticulture (scattered scrub, recent management, ploughed, fence);
- g3c (801) - Other neutral grassland (road verge or island);
- h2a5 (11, 50) - Species-rich native hedgerow (hedgerow with trees, ditch);
- h2a5 - Species-rich native hedgerow;
- h2a6 (516) - Other native hedgerow (active management)
- u1c (839) - Artificial unvegetated, unsealed surface (track)

5.2.2 These habitats are described below and their distribution is given on Figure 3. A full species list for each habitat is provided in Appendix 2.

c1 (10, 517, 600, 612) Arable and Horticulture (Scattered Scrub, Recent Management, Ploughed, Fence)

5.2.3 This parcel comprises an arable field that has been recently ploughed (c1-1 on Figure 3 and Photograph 1 on Figure 4). Wooden fences divide the field into sections with scattered scrub in the form of bramble (*Rubus fruticosus* agg.) and young sycamore trees (*Acer pseudoplatanus*) growing on these fences.

5.2.4 This habitat does not require a condition assessment and is classified as Condition Assessment N/A.

g3c (801) Other Neutral Grassland (Road Verge or Island)

5.2.5 A grass verge is present along a road adjacent to site and the arable field (g3c-1 on Figure 3, and Photograph 2 on Figure 4). The species recorded include occasional false oat grass (*Arrhenatherum elatius*) and cock's foot (*Dactylus glomerata*). Forbs include abundant dandelion (*Taraxacum officinale* agg.), white clover (*Trifolium repens*), occasional thistle (*Cirsium* sp.), common ragwort (*Jacobaea vulgaris*), and rare common nettle (*Urtica dioica*).

5.2.6 The condition of the habitat was assessed as Poor, as the habitat passes three of six criteria for this habitat type, and fails criterion A.

h2a5 Species-Rich Native Hedgerow

5.2.7 A hedgerow runs along the southern boundary (h2a5-1 on Figure 3 and Photograph 3 on Figure 4) of the site and includes dominant hawthorn (*Crataegus monogyna*), frequent elm (*Ulmus* sp.), occasional ash, sycamore, hazel (*Corylus avellana*) and dog rose (*Rosa canina*). Other species include abundant bramble, and common ivy (*Hedera helix*), with ground flora including abundant cock's foot, and common nettle, frequent cow parsley (*Anthriscus sylvestris*), and rare mugwort (*Artemisa vulgaris*), herb Robert (*Geranium robertianum*) and dock species (*Rumex* sp.).

- 5.2.8** The condition of the habitat was assessed as Good, as the habitat passes eight out of 10 criteria for this habitat type, failing criteria C2 (nutrient enriched perennial vegetation) and D2 (current damage).

h2a5 (11, 50) Species-Rich Native Hedgerow (Hedgerow with Trees, Ditch)

- 5.2.9** A well-established hedgerow with trees is present at the east of the site (h2a5-2 on Figure 3 and Photograph 4 on Figure 4). Woody species included abundant hawthorn and blackthorn (*Prunus spinosa*), rare oak (*Quercus robur*), and occasional spindle (*Euonymus europaeus*), wild privet (*Ligustrum vulgaris*), willow (*Salix* sp.), ash (*Fraxinus excelsior*), sycamore and dog rose. Other species included abundant bramble and common ivy, with ground flora including frequent cock's foot, and common nettle, occasional willowherb (*Epilobium* sp.), false oat grass, and cow parsley (*Anthriscus sylvestris*). A wet ditch runs at the base of the hedgerow, but lies outside the red line boundary.

- 5.2.10** The condition of the habitat was assessed as Good, as the habitat passes eight out of 10 criteria for this habitat type, failing criteria C2 (nutrient enriched perennial vegetation) and D2 (current damage).

h2a6 (516) Other Native Hedgerow (Active Management)

- 5.2.11** A species poor hedgerow is located in the north west of the site (h2a6-1 on Figure 3 and Photograph 5 on Figure 4). The hedgerow contains willow, hawthorn, beech (*Fagus sylvatica*) and blackthorn.
- 5.2.12** The condition of the habitat was assessed as Moderate, as the habitat passes four out of eight criteria for this habitat type. The hedgerow fails criteria A1 (height), A2 (width), C1 (undisturbed ground and perennial vegetation), and D2 (current damage), which includes two attributes in one functional group.

u1c (839) Artificial Unvegetated Unsealed Surface (Track)

- 5.2.13** An access track containing vegetation such as ribwort plantain (*Plantago lanceolata*) and dandelion is present in the south of the site (u1c-1 on Figure 3 and Photograph 5 on Figure 4).
- 5.2.14** This habitat does not require a condition assessment and is classified as Condition Assessment N/A.

Fauna

- 5.2.15** No incidental records of fauna on site were recorded.

Target Notes

- 5.2.16** No target notes were recorded.

5.3 Potential of Site to Support any Protected Species or Species of Conservation Concern

- 5.3.1** The hedgerows, scattered scrub along the fences and grassland on site have the potential to support amphibians as they can provide commuting, foraging and refugia opportunities.
- 5.3.2** The grassland, scattered scrub along the fences, hedgerows and unsealed surfaces on site have the potential to support reptiles as they provide basking, foraging and refugia opportunities, particularly along the base of the hedgerows.
- 5.3.3** Hedgerows and scattered scrub present onsite have the potential to support nesting birds.
- 5.3.4** The mature and semi-mature trees within the hedgerows could provide roosting opportunities for bats if suitable potential roosting features (PRFs) are present. Suitable commuting and foraging opportunities exist for bats along the hedgerows present on site.

6. Constraints, Opportunities and Recommendations

6.1 Designated Sites

- 6.1.1 It is unlikely that the proposed works will have a direct effect on any of the designated sites identified during the desk study. This is because of their distance from the site and the absence of direct connectivity via habitat corridors or potential pollution pathways.
- 6.1.2 Although the site does fall within the impact risk zone for the two SSSIs identified during the desk study, residential developments are not listed as planning applications that are likely to impact the SSSI and the development does not meet the criteria at which Natural England must be consulted. As such, no risk is anticipated.

6.2 Priority Habitats

- 6.2.1 In the absence of best practice controls to prevent spills or emissions to air, the development could have a negative impact on priority habitats beyond the site boundary. Best practice measures should be implemented to prevent any contamination of soil or air. This includes prevention of emissions of sediment, dust and chemicals.

6.3 Ancient Woodland

- 6.3.1 It is unlikely that the development will have an effect on any of the ancient woodland identified during the desk study. This is because of the distance from the site and the absence of direct connectivity via habitat corridors or potential pollution pathways.

6.4 Waterbodies

- 6.4.1 It is recommended that control measures are put in place to prevent sediment or chemical spillage and run-off from works sites into the waterbodies adjacent from site.
- 6.4.2 Constraints and recommendations relating to amphibians using these waterbodies is provided in Section 6.5.

6.5 Protected Species and Species of Conservation Concern

Amphibians

- 6.5.1 The desk study returned records for great crested newt (in 2014, 2016 and 2017) within the 1km study area. It also identified the presence of waterbodies within the 250m search area that could provide suitable breeding sites for amphibians. The habitat survey found suitable terrestrial resting habitat for amphibians on the site (hedgerow and scattered scrub).
- 6.5.2 Additionally, the desk study also returned a record for a granted European Protected Species Licence for GCN (2019-43543-EPS-MIT-1) for a development approximately 70m west of the site. Records for positive great crested newt class survey licence returns in 2014 and 2016 were also found by the desk study, including for the ponds immediately adjacent to the site.

- 6.5.3** Great crested newt are protected under the Habitats Regulations as described in Section 3 and Appendix 1, which means it would be an offence to kill or injure individual newts or to damage or destroy breeding sites or resting sites.
- 6.5.4** As suitable habitat (resting places) for GCN in the terrestrial part of their life cycle is present on site, a District Level Licence should be sought from NatureSpace. Discussions with NatureSpace were had by Pye Homes, and Stage 1 reports and plans were produced by NatureSpace for the site in 2021. However, the District Level Licence was not progressed any further.
- 6.5.5** It is therefore recommended that David Wilson Homes contact NatureSpace to enquire about a new District Level Licence for the site, making clear the changes in habitat that have occurred since they were first contacted.
- 6.5.6** Suitable sheltering habitat for common toad (*Bufo bufo*) or other common amphibians should be dismantled cautiously by hand. Should common amphibians be discovered on site at any time during their active period (March to October inclusive), they should be allowed to move away on their own volition or if in danger moved carefully with gloved hands to a sheltered area of dense vegetation. Should common amphibians be discovered on site outside of the active period, an ecologist should be contacted for advice on how to proceed.

Badger

- 6.5.7** The desk study returned no records for badger. In addition the site has very limited suitable habitat for sett building, but the site does contain suitable foraging and commuting habitat. No badger setts were recorded during the habitat survey, however a detailed badger survey of the site was not undertaken. Badger and their setts are protected under legislation as set out in Section 3 and Appendix 1.
- 6.5.8** To prevent harm to badgers or other mammal species visiting the site during the construction phase the following precautions are recommended:
- An ecologist should be consulted should any new mammal burrows be recorded on the site;
 - Secure storage of materials and chemicals within a designated area;
 - Deep excavations should be covered at night or a suitable escape ramp should be provided to prevent animals becoming trapped; and
 - Task lighting should be purposefully directed away from retained habitats and focussed on the work area to reduce potential impacts or disturbance to badger.

Reptiles

- 6.5.9** The desk study returned records of reptile species within the 1km study area. Additionally, a small population of grass snake was confirmed on site during previous surveys (Aspect Ecology, 2021a). Since the Aspect Ecology surveys, much of the site has been made unsuitable for reptiles, however discrete areas of suitable habitat (grassland, scattered scrub along the fences, and hedgerows) remain on the site. The legal protection afforded to reptiles is summarised in Section 3 and Appendix 1.

- 6.5.10** The removal of habitat suitable for supporting reptiles could result in the killing or injury of reptiles, which would be an offence in the absence of appropriate mitigation. As such, habitats suitable for reptiles (grassland, scattered scrub along the fences, and hedgerows) should be retained where possible and should be fenced for the duration of construction activities at the site to prevent damage or destruction.
- 6.5.11** If this is not possible, the following options are available:
- If amphibian fencing and pitfall trapping is required as part of the District Level Licence, then reptile mats should be deployed alongside, and any reptiles caught should be translocated to a suitable receptor site.
 - For small and discrete areas of habitat clearance, suitable habitat can be manipulated under ecological supervision via a two stage cut during the reptile active season to encourage reptiles to disperse into suitable areas of retained/nearby habitats. A method statement should be produced to detail the Precautionary Method of Working that must be followed in this scenario. This method is reliant on suitable habitat being present adjacent to site, that would be able to support reptiles.
- 6.5.12** Should reptiles be discovered on site at any time during their active period, they should be allowed to move away on their own volition or if in danger moved carefully to a sheltered area of dense vegetation. Should reptiles be discovered on site outside of the active season an ecologist should be contacted for advice on how to proceed.

Birds

- 6.5.13** Records of breeding bird species were returned in the desk study, and there is suitable habitat (scattered scrub and hedgerows with trees) present for nesting birds. As summarised in Section 3 and Appendix 1 all bird species are protected, including active nests.
- 6.5.14** Suitable habitat for nesting birds should be retained where possible, or removed outside of the breeding bird season (i.e. removed between September and February, inclusive). If this is not possible and suitable nesting habitat must be removed during the bird breeding season (i.e. between the months of March and August, inclusive) it should be checked for the presence of nesting birds by an ecologist prior to removal and, if nesting birds are found to be present, a suitable buffer must be implemented within which no clearance can be undertaken until the nest is no longer active.

Bats

- 6.5.15** Records of bat species were found within the 1km study area. The mature and semi-mature trees within the hedgerows could provide roosting opportunities for bats if suitable PRFs are present. The legal protection afforded to bats is summarised in Section 3 and Appendix 1. Killing or injury of bats would be an offence, as well as damage or destruction of a roosting site. Disturbance of roosting bats is also an offence.
- 6.5.16** No trees are to be removed under current plans. One low potential tree was recorded on site during surveys by Aspect Ecology for Pye Homes in 2021 (Aspect Ecology, 2021a). This tree is within habitat h2a5-2, and is to be retained.

- 6.5.17** As two years have passed since the preliminary ground level roost assessments of the trees on site were conducted, it is recommended that these surveys are repeated to assess the potential of trees on the site to support roosting bats and to record the location of potential roosting features. Where PRFs are recorded to be present and an impact cannot be avoided, further survey is likely to be required to determine presence or absence of roosting bats. Mitigation is likely to be required if bat roosts will be directly impacted or indirectly impacted by disturbance.
- 6.5.18** The aforementioned surveys were completed in January 2024, and as no trees are to be removed, no further surveys were recommended (Thomson, 2024a).
- 6.5.19** If works at night are necessary, any lighting used to facilitate the works should be implemented using a sensitive lighting regime. This should include the focus of lighting to be on the works area only and directed away from suitable habitat for commuting and foraging bats (h2d5-1 and h2d5-2). Any light spill in the surrounding habitats should be minimised to prevent disturbance to any foraging or commuting bats that may be present.
- 6.5.20** It is recommended that any lighting plan produced for the development should be reviewed by an ecologist to ensure that the impacts of lighting on bats are considered.

Hedgehog

- 6.5.21** No records of hedgehog were returned within the desk study. Although hedgehog is not a protected species, it is a species of conservation concern. Suitable habitat for hedgehog was recorded on the site (scattered scrub and hedgerows on Figure 3).
- 6.5.22** It is recommended that any habitat suitable for sheltering hedgehog should be checked prior to works. Should hedgehogs be discovered on site at any time during their active period (April to October, inclusive), they should be allowed to move away on their own volition or if in danger moved carefully with gloved hands to a sheltered area (e.g. dense scrub). Should hedgehogs be discovered on site outside of the active season, an ecologist should be contacted for advice on how to proceed.

Otter and Water Vole

- 6.5.23** No records of otter (*Lutra lutra*) or water vole were returned in the desk study. The site is considered unlikely to support otters due to the lack of suitable commuting or foraging habitat. The ditch within h2a5-2 is heavily shaded, with little emergent vegetation, and as such is considered unsuitable for water vole. Otter and water vole are therefore not considered a constraint to the development and will not be considered further in this report.

Invertebrates

- 6.5.24** Two species of invertebrate, the rugged oil-beetle (*Meloe rugosus*) and the small heath butterfly (*Coenonympha pamphilus*), were identified during the desk study. These species are Species of Principal Importance in England under the NERC Act. Although the site contains a parcel of other neutral grassland which could provide suitable habitat for these species, the grassland is small and as such there is not expected to be a negative impact on the local conservation status of these terrestrial invertebrate species as a result of the development. Terrestrial invertebrates are therefore not discussed further in this report.

6.6 Biodiversity Net Gain

- 6.6.1** A separate BNG assessment report has been provided by Thomson Environmental Consultants (2024b).

6.7 Ecological Enhancement

- 6.7.1** A separate Faunal Enhancement Plan has been produced by Thomson Environmental Consultants (2024c).

7. Conclusion

- 7.1.1** An ecological desk study and an extended UKHab survey was conducted to assess the ecological constraints of the development of an area of land north of Camp Road in Upper Heyford. Provided the development follows good practice guidance in relation to air and water pollution, it is unlikely that the works would result in any impact on ecological features identified outside of the site boundary, such as designated sites, priority habitats and waterbodies.
- 7.1.2** The site was found to contain suitable habitat for great crested newt, reptiles, breeding birds and roosting, commuting and foraging bats. Recommendations for further survey and/or mitigation have been made to ensure that the development is compliant with legislation and policy relating to these protected species/species groups, including to register the site under NatureSpace's District Level Licensing scheme for great crested newt and to complete updated surveys of the trees on site to assess their potential to support roosting bats. As of April 2024, these recommendations have been followed, the development can proceed lawfully.

8. References

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- Aspect Ecology Ltd (2022a) Land off Larsen Road, Upper Heyford Biodiversity Net Gain Assessment. December 2022.
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- Thomson Environmental Consultants (2024c) Faunal Enhancement Plan Land North of Camp Road, Upper Heyford. Report Reference: DWH001-029-003/002/002

Appendix 1: National Legislation and Planning Policy

Table 8.1: Summary of national legislation and policy relating to ecology and biodiversity

Feature	Summary of Legislation/Policy
Designated Sites for Nature Conservation	
General	Paragraph 174 (a) of the National Planning Policy Framework, 2021 (NPPF) states that <i>'Planning policies and decisions should contribute to and enhance the natural and local environment by: 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)'.</i>
Special Areas of Conservation ⁹ (SACs) (international importance)	<p>Special Areas of Conservation (SACs) are protected areas in the UK designated under the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters).</p> <p>Paragraph 181 of the NPPF states that <i>'The following should be given the same protection as habitats sites:</i></p> <ul style="list-style-type: none"> <i>a) potential Special Protection Areas and possible Special Areas of Conservation;</i> <i>b) listed or proposed Ramsar sites¹⁰ ; and</i> <i>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.'</i>
Special Protection Areas (SPAs) (international importance)	Special Protection Areas (SPAs) are protected areas for birds in the UK classified under the Wildlife & Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, & c.) Regulations 2017 (as amended) in England, Scotland and Wales.
Sites of Special Scientific Interest (SSSIs)	SSSIs are protected under the Wildlife and Countryside Act 1981 (WCA), Countryside and Rights of Way Act 2000 (CROW Act) and Natural Environment and Rural Communities Act 2006 (NERC Act).

⁹ SACs and SPAs were formally known as European sites forming part of the Natura 2000 site network. Following the UK's exit from the EU they are now referred to as National Sites and are part of the National Site Network. However, these sites can still be considered to be of international importance for nature conservation. Developments affecting these sites must be considered according to the requirements of the Habitats Regulations.

¹⁰ Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site

Feature	Summary of Legislation/Policy
(national importance)	<p>SSSIs are protected by law and planning guidance. Local Planning Authorities (LPAs) in England must consult Natural England on planning applications that might affect SSSIs. Operations that could damage special interests require consent by Natural England.</p> <p>Paragraph 180(b) of the NPPF states that '<i>When determining planning applications, local planning authorities should apply the following principles: (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</i>'.</p> <p>Natural England's Impact Risk Zones for Sites of Special Scientific Interest (Natural England, 2021) is a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The Impact Risk Zones (IRZs) also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on European /Ramsar sites.</p>
National Nature Reserves (NNRs) (national importance)	<p>NNRs are a selection of the very best parts of England's SSSI's, protected under the WCA and CRow Act.</p>
Local Nature Reserves (LNRs) (local importance)	<p>Local Nature Reserves (LNRs) protected under the National Parks and Access to the Countryside Act 1949. LPAs are required to consult Natural England about all new proposals. An LNR can be given protection against damaging operations. It also has protection against development on and around it. This protection is usually given via the Local Plan, (produced by the planning authority), and often supplemented by local by-laws. Unlike national designations, the level and type of protection afforded an LNR is decided locally and varies from site to site.</p>
Non-statutory designated sites (local importance)	<p>These sites are not protected under legislation. However, LPAs take account of local sites when formulating local plans and when considering planning applications.</p>
Habitats of Principal Importance	<p>Under Section 41 of the NERC Act, the Secretary of State must, as respects England, publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity.</p>

Feature	Summary of Legislation/Policy
	Section 40 of The NERC Act 2006 places a duty on all public bodies, including planning authorities, to have regard for biodiversity in exercising their functions. Planning authorities should have particular regard to the Habitats of Principal Importance (priority habitats) listed under Section 41 of the act which should be treated as a material consideration in the planning process.
Ancient woodland	Ancient woodland is any area that's been wooded continuously since at least 1600 AD. Ancient woodland as well as ancient and veteran trees, are regarded as an 'irreplaceable habitat'. Paragraph 180(c) of the NPPF states that ' <i>When determining planning applications, local planning authorities should apply the following principles: 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 reasons and a suitable compensation strategy exists</i> '
Biodiversity in general	Natural Environment and Rural Communities (NERC) Act 2006 states that any " <i>public authority must, in exercising its functions, have regard ... to the purpose of conserving biodiversity</i> " and " <i>conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat</i> ".
Invasive non-native species (INNS)	In the UK it is an offence under the Wildlife and Countryside Act 1981 (as amended) to " <i>plant or otherwise cause to grow in the wild</i> " any plant species listed in Schedule 9 of the Act.
Species of Principal Importance	Under Section 41 of the NERC Act, the Secretary of State must, as respects England, publish a list of the living organisms which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. Section 40 of The NERC Act 2006 places a duty on all public bodies, including planning authorities, to have regard for biodiversity in exercising their functions. Planning authorities should have particular regard to the Species of Principal Importance (priority species) listed under Section 41 of the act which should be treated as a material consideration in the planning process.
Fish	Special areas of conservation (SACs), sites of special scientific interest (SSSIs) or Ramsar sites have features of special interest for freshwater or migratory fish, such as: <ul style="list-style-type: none"> • Atlantic salmon (<i>Salmo salar</i>) • bullhead (<i>Cottus gobio</i>) • lamprey (brook, river and sea) (Petromyzontiformes) • spined loach (<i>Cobitis taenia</i>) • European eel (<i>Anguilla anguilla</i>) Developers must comply with the legal protection of freshwater and migratory fish and their habitats under the Wildlife and Countryside Act 1981, Salmon and Freshwater Fisheries Act 1975 and Eels (England and Wales) Regulations 2009.

Feature	Summary of Legislation/Policy
	Many species of fish are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Amphibians (common)	<p>Common amphibians are protected under the Wildlife and Countryside Act 1981 (as amended) from activities related to their sale and it is considered best practice to avoid harming or killing them.</p> <p>Common toad is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Amphibians (rare)	<p>Rare amphibian species include natterjack toad (<i>Epidalea calamita</i>), great crested newt (<i>Triturus cristatus</i>) and pool frog (<i>Pelophylax lessonae</i>). These are listed under The Conservation of Habitats and Species Regulations, 2017 (as amended) makes it an offence to;</p> <ul style="list-style-type: none"> • deliberately kill, injure, disturb or capture them • deliberately take or destroy their eggs • damage or destroy their breeding sites and resting places - even if GCN are not present • possess, control or transport them (alive or dead) <p>It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> • disturb GCN while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection <p>These species are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Reptiles (common)	<p>Common reptile species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:</p> <ul style="list-style-type: none"> • Intentional (or reckless in Scotland) killing and injury (Section 9(1); • Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species (Section 9(5). <p>These are species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>

Feature	Summary of Legislation/Policy
Reptiles (rare)	<p>Rare reptile species include sand lizard and smooth snake. These are listed under The Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to:</p> <ul style="list-style-type: none"> • deliberately kill, injure, disturb or capture them • deliberately take or destroy their eggs • damage or destroy their breeding sites and resting places • possess, control or transport them (alive or dead) <p>it is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> • disturb them while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection <p>These are species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Birds	<p>All wild birds are protected under the Wildlife and Countryside Act 1981. It is an offence to:</p> <ul style="list-style-type: none"> • kill, injure or take wild birds • take, damage or destroy the nests of species that reuse them, such as osprey • take, damage or destroy a nest that's in use or being built • take or destroy the egg of any wild bird • possess or control any wild bird (alive or dead) • possess or control an egg or any part of an egg of a wild bird <p>Additional protection applies to birds listed in schedule 1 of the Wildlife and Countryside Act 1981. It is an offence to intentionally or recklessly disturb a schedule 1 bird:</p> <ul style="list-style-type: none"> • on or near a nest containing eggs or young • when it's building a nest • or its dependent young <p>Some wild birds are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Bats	<p>All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended).</p> <p>It is an offence to:</p>

Feature	Summary of Legislation/Policy
	<ul style="list-style-type: none"> deliberately kill, injure, disturb or capture them damage or destroy their breeding sites and resting places (even when bats are not present) possess, control or transport them (alive or dead) <p>It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> disturb bats while they occupy a structure or place used for shelter or protection obstruct access to a place of shelter or protection <p>Several species of bats are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Badger	<p>Badgers and their setts (tunnels and chambers where they live) are protected by the Protection of Badgers Act 1992. It is an offence to:</p> <ul style="list-style-type: none"> take, injure or kill a badger - or attempt these actions treat a badger cruelly interfere with a badger sett possess or control a live badger mark or ring a badger
Hazel dormouse	<p>Hazel dormouse is protected under the Conservation of Habitats and Species Regulations 2017 (as amended).</p> <p>It is an offence to:</p> <ul style="list-style-type: none"> deliberately kill, injure, disturb or capture them damage or destroy their breeding sites and resting places possess, control, transport (alive or dead) <p>It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> disturb hazel dormice while they occupy a structure or place used for shelter or protection obstruct access to a place of shelter or protection <p>Hazel dormouse is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>

Feature	Summary of Legislation/Policy
Otter	<p>Otters are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to:</p> <ul style="list-style-type: none"> deliberately kill, injure, disturb or capture them damage or destroy their breeding sites and resting places - even if otters are not present possess, control or transport them (alive or dead) <p>It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> disturb otters while they occupy a structure or place used for shelter or protection obstruct access to a place of shelter or protection <p>Otter is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p> <p>They are also listed as "Species of Principal Importance" under Section 7 of the Environment (Wales) Act 2016.</p>
Water vole	<p>Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally:</p> <ul style="list-style-type: none"> kill, injure or take them possess or control them (alive or dead) <p>It is also an offence to intentionally or recklessly:</p> <ul style="list-style-type: none"> damage or destroy a structure or place used for shelter or protection disturb them in a place used for shelter or protection obstruct access to a place used for shelter or protection <p>Water vole is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Other mammals (e.g. rabbit, fox, hedgehog)	<p>Protection under the Wild Mammals (Protection) Act 1996, makes it an offence to inflict any unnecessary suffering, including crushing or asphyxiation of a wild mammal.</p>
White-clawed crayfish	<p>White-clawed crayfish are partly protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to capture this species without a licence and also prohibits trade in this species.</p>

Feature	Summary of Legislation/Policy
	<p>This species is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>
Freshwater pearl mussel	<p>Freshwater pearl mussels are protected by the Wildlife and Countryside Act 1981 (as amended).</p> <p>It is an offence to intentionally:</p> <ul style="list-style-type: none"> • kill, injure or take them • possess or control them (alive or dead) <p>It is also an offence to intentionally or recklessly:</p> <ul style="list-style-type: none"> • damage or destroy a structure or place used for shelter or protection • disturb them in a place used for shelter or protection • obstruct access to a place used for shelter or protection
Invertebrates	<p>Some invertebrates are protected as European protected species (EPS) under The Conservation of Habitats and Species Regulations 2017 (as amended), these are:</p> <ul style="list-style-type: none"> • large blue butterflies (eggs, caterpillars, chrysalises and adults) • Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults) • little ramshorn whirlpool snails <p>For these species It is an offence to:</p> <ul style="list-style-type: none"> • deliberately kill, injure, disturb or capture them • deliberately destroy their eggs • damage or destroy their breeding sites and resting places (even when invertebrates are not present) • possess, control or transport them (alive or dead) <p>For these three species, it is also an offence under the Wildlife and Countryside Act (WCA) 1981 to intentionally or recklessly:</p> <ul style="list-style-type: none"> • disturb them while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection <p>Many other invertebrate species are protected under schedule 5 of the Wildlife and Countryside Act 1981. For those listed in schedule 5, it is an offence to intentionally:</p> <ul style="list-style-type: none"> • kill, injure or take them • possess or control them (alive or dead) <p>It is also an offence to intentionally or recklessly:</p>

Feature	Summary of Legislation/Policy
	<ul style="list-style-type: none"> • damage or destroy a structure or place used for shelter or protection • disturb them in a place used for shelter or protection • obstruct access to a place used for shelter or protection <p>Many invertebrates are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision under the 'biodiversity duty'.</p>
Plant species	<p>Under the Wildlife and Countryside Act 1981, it is an offence to intentionally uproot any wild plant without the landowner's consent. For plants, fungi and lichens listed on schedule 8 of the Wildlife and Countryside Act 1981 it is an offence to intentionally pick, uproot or destroy them, unless it could not be reasonably avoided. That means it was an incidental result of a lawful action.</p> <p>Some plants are listed on schedule 5 of the Conservation of Habitats and Species Regulations 2017. For these species it is an offence to:</p> <ul style="list-style-type: none"> • deliberately pick, collect, cut, uproot or destroy them • possess, control or transport them (alive or dead) <p>Many plants, fungi and lichens are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.</p>

Appendix 2: Plant Species and Abundance

c1-1 (10, 517, 600, 612) - Arable and horticulture (scattered scrub, recent management, ploughed, fence)

Common Name	Scientific Name	Abundance
Bramble	<i>Rubus fruticosus</i> agg.	O
Sycamore	<i>Acer pseudoplatanus</i>	O

g3c-1 (801) - Other neutral grassland (road verge or island)

Common Name	Scientific Name	Abundance
Dandelion species	<i>Taraxacum officinale</i> agg.	A
White clover	<i>Trifolium repens</i>	A
Cock's foot	<i>Dactylis glomerata</i>	O
Common ragwort	<i>Jacobaea vulgaris</i>	O
False oat grass	<i>Arrhenatherum elatius</i>	O
Thistle species	<i>Cirsium</i> sp.	O
Common nettle	<i>Urtica dioica</i>	R

h2a5-1 - Species-rich native hedgerow

Common Name	Scientific Name	Abundance
Hawthorn	<i>Crataegus monogyna</i>	D
Bramble	<i>Rubus fruticosus</i> agg.	A
Cock's foot	<i>Dactylis glomerata</i>	A
Common ivy	<i>Hedera helix</i>	A
Common nettle	<i>Urtica dioica</i>	A
Cow parsley	<i>Anthriscus sylvestris</i>	F
Elm species	<i>Ulmus</i> sp.	F
Ash	<i>Fraxinus excelsior</i>	O
Dog rose	<i>Rosa canina</i>	O
Hazel	<i>Corylus avellana</i>	O
Sycamore	<i>Acer pseudoplatanus</i>	O
Dock species	<i>Rumex</i> sp.	R
Herb-robert	<i>Geranium robertianum</i>	R
Mugwort	<i>Artemisa vulgaris</i>	R

h2a5-2 (11, 50) - Species-rich native hedgerow (Hedgerow with trees, Ditch)

Common Name	Scientific Name	Abundance
Blackthorn	<i>Prunus spinosa</i>	A
Bramble	<i>Rubus fruticosus</i> agg.	A
Common ivy	<i>Hedera helix</i>	A

Common Name	Scientific Name	Abundance
Hawthorn	<i>Crataegus monogyna</i>	A
Cock's foot	<i>Dactylis glomerata</i>	F
Common nettle	<i>Urtica dioica</i>	F
Ash	<i>Fraxinus excelsior</i>	O
Cow parsley	<i>Anthriscus sylvestris</i>	O
Dog rose	<i>Rosa canina</i>	O
False oat grass	<i>Arrhenatherum elatius</i>	O
Spindle	<i>Euonymus europaeus</i>	O
Sycamore	<i>Acer pseudoplatanus</i>	O
Wild privet	<i>Ligustrum vulgaris</i>	O
Willowherb species	<i>Epilobium</i> sp.	O
Willow species	<i>Salix</i> sp.	O
Oak	<i>Quercus robur</i>	R

h2a6-1 (516) - Other native hedgerow (active management)

Common Name	Scientific Name	Abundance
Beech	<i>Fagus sylvatica</i>	A
Blackthorn	<i>Prunus spinosa</i>	A
Hawthorn	<i>Crataegus monogyna</i>	A
Willow species	<i>Salix</i> sp.	A

u1c-1 (839) - Artificial unvegetated, unsealed surface (track)

Common Name	Scientific Name	Abundance
Dandelion species	<i>Taraxacum officinale</i> agg.	O
Ribwort plantain	<i>Plantago lanceolata</i>	O