

MKA
ECOLOGY

Preliminary Ecological Appraisal

Land East of Walnut Tree Road, Pirton

Site	Land East of Walnut Tree Road, Pirton, Hertfordshire
Project number	163024
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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development". The information which we have 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.



MKA Ecology Ltd is a CIEEM Registered Practice. This means that MKA Ecology Ltd are formally recognised for high professional standards, working at the forefront of our profession.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

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1. EXECUTIVE SUMMARY

In August 2024, MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal and Biodiversity Net Gain baseline assessment of Land East of Walnut Tree Road, Pirton. The appraisal included a habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 17th September 2024.

The Site is comprised of two fields of modified grassland mostly mown to a short sward, with longer patches of grassland around the edges of the northern field, and tall ruderal vegetation to the west of the southern field. There was some encroaching bramble scrub, and a number of rubble piles, piles of pallets and log piles and a handful of scattered trees within the northern field. Native species-rich hedgerows with trees and a line of trees border the fields. There is a metal barn and a derelict shed within the northern field and derelict field shelters present within the southern field. Using the Biodiversity Net Gain Statutory Metric, a biodiversity baseline of 11.71 habitat units and 10.13 hedgerow units has been calculated. The surrounding habitats are comprised of agricultural fields, residential properties and a large field of modified grassland at Pirton recreation ground adjacent to the south.

The proposed development is for the construction of up to 50 residential dwellings with associated access and landscaping. This will involve the loss of the buildings, scrub and grassland within the fields and the hedgerow between the two fields.

The following ecological constraints were identified at the Site with recommendations made as follows;

- **Habitats:** The species-rich native hedgerows around the boundaries of the two fields are a Habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (NERC) (2006). These should be retained where possible and protected from harm during construction. Details for their protection should be detailed within a Construction Ecological Management Plan (CEcMP).
- **Amphibians:** The hedgerows, bramble scrub, tall grassland and piles of rubble, logs and pallets all provide suitable terrestrial habitat for great crested newts, and there are four ponds within a 500m radius which are well connected to the Site. eDNA surveys should be undertaken on the ponds within 500m to ascertain whether great crested newts are present/likely absent. Alternatively, a district level licence for great crested newts should be acquired for the duration of works.
- **Reptiles:** The hedgerows, bramble scrub, long grassland and piles of rubble, logs and pallets provide a matrix suitable habitat for foraging, basking and hibernation. A seven-visit presence/absence survey should be undertaken to ascertain whether the site is utilised by reptiles.

- **Roosting bats:** The barn and the derelict shed within the northern field have features that could potentially support roosting bats. It is recommended that a Preliminary Roost Assessment of these two buildings is undertaken to confirm the potential of these buildings to support roosting bats. A Preliminary Roost Assessment can be undertaken at any time of year.
- **Commuting and foraging bats:** The hedgerows and line of trees surrounding the two fields provide suitable linear features that could be utilised by foraging and commuting habitat for bats. It is recommended that nighttime bat walkover surveys and static detector surveys are undertaken, to determine how foraging and commuting bat species utilise the Site.
- **Breeding birds:** The field shelters, scrub, hedgerows, trees and shed all provide suitable habitat for breeding bird species. All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). It is recommended that vegetation and building clearance is undertaken outside of the breeding bird season (March-August inclusive), if this is not feasible then vegetation and building clearance must be preceded by a nesting bird check undertaken by a suitably qualified ornithologist.
- **Badgers:** No evidence of badgers was found during the survey; however, the scrub, hedgerows and long grassland provide suitable foraging and commuting habitat for this species and there is abundant suitable sett-building habitat in close proximity to the site. It is recommended that precautionary working measures for badgers are adopted throughout construction, including a pre-commencement check, these will be outlined within a CEcMP.
- **Other mammals:** There is suitable habitat for hedgehog and brown hare onsite and it is recommended that any vegetation clearance is conducted in a sensitive manner in order to avoid any negative impacts, this should be detailed within a CEcMP.

In order to fully assess the impacts of the development on protected species, habitats and the wider landscape and detail all necessary mitigation, an Ecological Impact Assessment (EclA) should be undertaken for the Site following the recommended surveys.

In line with the National Planning Policy Framework, and Local Planning Policy the biodiversity at the Site should be enhanced. The biodiversity baseline at Land East of Walnut Tree Road, Pirton is largely generated through a dominance of low distinctiveness habitats. The Statutory Biodiversity Metric shows that biodiversity can be increased through the enhancement of existing habitats or the uplift of low distinctiveness habitats to higher distinctiveness habitats. There is an opportunity to increase the biodiversity onsite through the enhancement of any retained modified grassland to other neutral grassland which is a habitat with a higher distinctiveness, and through the creation of other habitats with a higher distinctiveness including a pond, native tree and scrub planting. The habitat creation and enhancements should be supported by a Biodiversity Net Gain assessment in order to comply with the requirements of the Environment Act 2021, National Planning Policy Framework, and Local Planning Policy, a 10% net gain in biodiversity post-development will be required. Bird, bat and hedgehog boxes should be included post-development as well as deadwood features for invertebrates. To amalgamate these recommendations and ensure long-term security of these habitats a Habitat Management and Monitoring Plan (HMMP) should be created for the Site.

2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In August 2024, MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal and Biodiversity Net Gain baseline assessment at Land East of Walnut Tree Road in Pirton by Blakeney Estates in order to support a planning application for the development of up to 50 residential dwellings.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of the Site;
- Prepare a habitat map for the Site;
- Identify evidence of protected species/species of conservation concern at the Site;
- Assess the potential impacts of the proposed development, using existing plans;
- Outline recommendations for further survey effort where required; and
- Outline recommendations for biodiversity enhancements.

The aims of the Biodiversity Net Gain baseline assessment were to:

- Assess the condition of the habitats onsite identified within the Preliminary Ecological Appraisal;
- Identify whether any priority habitats or irreplaceable habitats are present onsite;
- Evaluate the pre-development biodiversity baseline;
- Outline recommendations for habitat creation and enhancement post-development

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or Land East of Walnut Tree Road. The Site is located in Pirton, Hertfordshire (centred on TL 15110 31550) and measures approximately 3.11ha. The Site has two modified grassland fields with bramble scrub, rubble piles, and derelict structures, bordered by native species-rich hedgerows and trees. Surrounding areas include agricultural fields, residences, and a recreation ground.

2.3. Proposed development

The proposed development involves the construction of up to 50 residential units, with associated access and landscaping.

Due to the likely scale and type of project the anticipated zone of influence will be the site itself, and the immediate surroundings.

2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy.

Relevant legislation considered within the scope of this document includes the following:

- The Environment Act 2021;
- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CROW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3.

In addition to obligations under wildlife legislation, the revised National Planning Policy Framework (NPPF) updated on 12 December 2024 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

North Herts Council has produced an adopted Local Plan which covers a number of policies relating to biodiversity and habitat conservation, including:

Policy SP1: Sustainable development in North Hertfordshire

Grant planning permission for proposals that, individually or cumulatively: (iv) protect key elements of North Hertfordshire's environment including biodiversity, important landscapes, heritage assets and green infrastructure (including the water environment); and (v) secure any necessary mitigation measures that reduce the impact of development, including on climate change.

Policy SP9: Design and Sustainability

Require Strategic Masterplans and planning applications for Strategic Housing Sites and significant development to (as applicable):

(vi) create and accessible multi-functional green infrastructure network that provides: a high-quality integrated network to support ecological connectivity, biodiversity net gain, climate adaptation and mitigation linking into the wider Ecological Network.

Policy SP12: Green infrastructure, landscape and biodiversity

States that it will accommodate significant growth during the plan period whilst ensuring the natural environment is protected and enhanced and 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
- d) 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;
- e) Protect other open spaces and support provision of new and improved open space.

Where relevant these are discussed in further detail in Section 5.

3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM, 2017).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km. Data was retrieved from the sources listed in Table 1.

Table 1: Sources of data for desktop study

Organisation	Data collected	Date collected
Multi-agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk	Information on local, national and international statutory protected areas.	03/09/2024
Herts Environmental Records Centre (HERC)	Information on protected and notable sites and species within 2km of the Site (TL 15110 31550).	03/09/2024
Bedfordshire and Luton Biodiversity Recording and Monitoring Centre (BRMC)	Information on protected and notable species and sites of nature conservation interest within 2km of the Site.	03/09/2024
Ordnance Survey maps and aerial photography	Information on habitats and connectivity between the Site and the surrounding landscape	01/11/2024
Plantlife Important Plant Areas Buglife Important Invertebrate Areas	Information on areas designated as holding important assemblages of plants and of invertebrates.	01/11/2024

3.2. UK Habitat Classification

Habitats were surveyed using the standardised UK Habitat classification and mapping methodology (UKHab Ltd, 2023). Data were recorded onto a Samsung Tablet in a Geographic Information System (GIS), in this instance QField, following a modified UK Habs colour mapping palette. Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2019).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative

abundance within the Site and is not a description of its abundance within the wider landscape. Therefore, a species with a rare relative abundance within the Site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.3. Protected and notable species scoping survey

As part of the Preliminary Ecological Appraisal, an assessment of the potential for the habitats onsite, or within the zone of influence of the proposed development, to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1. This includes Species of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Stanbury *et al.*, 2021 (see Appendix 1).

Protected and notable species considered within the protected species scoping survey for the Land East of Walnut Tree Road include the following:

- Plants and fungi: including species listed on schedule 8 of the Wildlife and Countryside Act 1981 such as: bluebell *Hyacinthoides non-scripta* and Species listed on section 41 of the NERC act 2006 including pasqueflower *Pulsatilla vulgaris*.
- Invertebrates: including species listed on schedule 5 of the Wildlife and Countryside Act 1981, schedule 5 such as marsh fritillary butterfly *Euphydryas aurinia* and Species listed on section 41 of the NERC act 2006 including beaded chestnut moth *Agrochola lychnidis*.
- Fish: European eel *Anguilla anguilla*, river lamprey *Lampetra fluviatilis*, brown trout *Salmo trutta subsp. fario*.
- Amphibians: Natterjack toad *Epidalea calamita*, great crested newt *Triturus cristatus* and common toad *Bufo bufo*.
- Reptiles: Adder *Vipera berus*, common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica helvetica*.

- Birds: With special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended) and Species of Principal Importance.
- Mammals: Badger *Meles meles*, bats (all species), water vole *Arvicola amphibius*, otter *Lutra lutra*, hazel dormouse *Muscardinus avellanarius*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, harvest mouse *Micromys minutus*, polecat *Mustela putorius* and European beaver *Castor fiber*.

In each case the likelihood of presence of these protected species in the zone of influence of the proposed development was classified as being either confirmed, high, moderate, low or negligible.

- **Confirmed:** The species is confirmed during the Preliminary Ecological Appraisal, previous survey effort or recent records.
- **High:** Habitats are available which are highly suitable for this species and there are records within the desktop study. The surrounding areas also provide widespread opportunities for the species which are well connected to the Site.
- **Moderate:** Some suitable habitat available for the species although not of optimum quality. Species is present with the desktop study.
- **Low:** Some suitable habitat available for the species but this is low value and possibly of small scale or with poor connectivity. No, or very few, records returned in the desktop study.
- **Negligible:** No suitable habitat available for the species, or very little poor-quality habitat.

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Biodiversity Net Gain baseline assessment

Condition assessments of the current habitats onsite were undertaken during the Preliminary Ecological Appraisal in order to establish the current biodiversity value of the Site. The biodiversity baseline was undertaken in order to evaluate the current biodiversity present onsite, and to inform recommendations for habitats to be created and enhanced post-development to achieve the net gain in biodiversity required by the Environment Act (2021).

To establish the baseline biodiversity value of the Site we use the Defra Statutory Biodiversity Metric (Defra, 2024). This method uses habitat as a proxy for biodiversity and its primary application is to provide planners and developers with a method of establishing how much and what type of habitats should be created or enhanced in order to ensure that a project results in a net gain for biodiversity.

Habitats are assigned the following scores:

- Distinctiveness: A measure of the type and importance of a habitat.
- Condition: A measure of the present or predicted condition of a habitat type.

- Strategic significance: How a habitat is regarded within Local Planning Policy.

For proposed habitats, where there is an attempt to predict the habitat type following establishment additional handicaps or risk scores are imposed representing the following factors:

- Difficulty: More difficult habitats incur a greater risk.
- Time to condition: In general, it takes longer for habitats to reach a better condition, plus certain habitats by their very nature take longer to create or restore.
- If the creation or enhancement of habitats is delayed, an additional risk score is applied.
- If habitats are created off-site, an additional risk score is applied.

The multipliers used in habitat assignment in the Biodiversity Net Gain Metric are detailed further in Table 3 below.

Table 3: Multipliers used in the calculation of Biodiversity Net Gain

Multiplier	When applied	Description
Distinctiveness	Before and after	A measure of the type of habitat, automatically assigned within the Metric. Habitats with greater value are assigned a higher score.
Condition	Before and after	The condition of the habitat. Uses the Technical Supplement (Defra, 2024) which defines condition based on a series of criteria measured in the field; Higher levels of condition give rise to greater values. In some cases, no condition assessment is required and these habitats are automatically allocated a score.
Strategic significance	Before and after	Whether a habitat is important within its local context.
Time to target condition	After	Used to account for the fact that habitat creation as part of a development is rarely instant. A 'handicap' is applied, with habitats that take longer to establish resulting in a greater reduction.
Difficulty of creation/restoration	After	Habitats that are more difficult to create/restore cause a reduction in the biodiversity unit as they are associated with a greater risk of failure.
Spatial risk	After	Habitat that is created at a greater distance away from the development site carries a greater risk of removing other natural habitats.
Advanced and delayed habitat creation	After	Used to account for situations where there is a mismatch between a negative impact on biodiversity and work to create or enhance the 'post-intervention habitats'. This can either be in the form of habitat creation occurring in advance or being delayed beyond the point of baseline losses.

The Defra Statutory Biodiversity Metric includes a trading summary which must be satisfied to achieve a positive outcome in the Net Gain assessment. The trading rules ensures that habitat losses are compensated for on a "like for like" or "like for better" basis. Newly created or enhanced habitats should achieve a higher distinctiveness and/or condition than those lost.

Hedgerows, given their unique linear characteristic and their position as 'edge habitats' are treated as linear features in the Statutory Biodiversity Metric calculator and are calculated as 'biodiversity metres'.

The metrics calculated for hedgerows have therefore been calculated and presented separately. Current hedgerows were mapped, and their lengths calculated, using QGIS.

Rivers and streams, given their linear form and important role in habitat connectivity, are treated separately in the biodiversity metric. There are no rivers or streams onsite or within 10m of the Site and so this process is not discussed further.

For the purposes of this assessment, it has been assumed that Land East of Walnut Tree Road, Pirton does not fall within an area of strategic significance. Whilst a Local Nature Recovery Strategy has not been developed it would appear highly likely that the village of Pirton will not be included as a Local Nature Recovery Network area.

3.5. Surveyor, author and reviewer

The survey was undertaken by Eleanor Richards, Ecologist at MKA Ecology Ltd and Madelaine Grove, Graduate Ecologist at MKA Ecology Ltd. Eleanor has two years' experience in ecological consultancy and Madelaine is in her first year of ecological consultancy. This report was written, by Madelaine. The report has been reviewed by Andy Symes ACIEEM, Senior Ecologist at MKA Ecology Ltd. Andy has over six years' experience as a consultant ecologist. The report has been authorised by Marielle James MCIEEM, Principal Ecologist at MKA Ecology Ltd. Marielle has over 10 years' experience as a consultant ecologist.

3.6. Date, time and weather conditions

See Table 4 below for details of the date, time and prevailing weather conditions recorded during the site visit for the Preliminary Ecological Appraisal.

Table 4: Date, time and weather conditions of survey visit

Date	Time of survey	Weather conditions*
17/09/2024	10:00am	Wind: 1 Cloud: 4 Temp: 16°C Rain: None

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.7. Constraints

A single visit cannot always ascertain the presence or absence of a protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics

and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

Data on species records obtained from local biological records centres are sometimes only available at low spatial resolutions and are constrained by the voluntary nature of the contributions and what has been chosen to be submitted as records. While these records provide a useful indication of species recorded in the local area, in particular protected or notable species, the data is not necessarily an accurate reflection of species assemblages or abundance in the vicinity.

4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the Site and the surrounding 2km. Data provided by HERC and BRMC identified numerous UK and European protected species, Species and Habitats of Principal Importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the Site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section below).

There are no internationally designated sites within 10km of the Land East of Walnut Tree Road, Pirton. Details of statutorily designated sites identified as part of the desktop study are displayed in Table 5 below. This includes one Local Nature Reserve.

Table 5: Statutorily designated sites within 2km of Land East of Walnut Tree Road, Pirton.

Site name	Area (ha)	Distance and direction	Reasons for selection
Oughtonhead Common LNR/LWS	17.35 ha	1.95km SE	Local Nature Reserve and Local Wildlife Site with woodland fen & other habitats harbouring native wildlife & birds. The reserve has a mature alder and willow woodland running adjacent to the River Oughton.

Details of non-statutorily designated sites identified as part of the desktop study are displayed in Table 6 below. These consist of two County Wildlife Sites and ten Local Wildlife Sites.

Table 6: Non-statutorily designated sites within 2km of Land East of Walnut Tree Road

Site name	Area (ha)	Distance and direction	Reasons for selection
Kettledean Farm Grassland CWS	1.50 ha	1.94km W	Kettledean Farm Grassland CWS consists of an area of species rich calcareous grassland on a moderately sloping hillside facing west with scattered trees, scrub and a hedge.

Site name	Area (ha)	Distance and direction	Reasons for selection
Toot Hill Main LWS	4.45ha	240m W	Meadow with semi-improved neutral/calcareous grassland with several dry banks. The remaining ponds are somewhat degraded but have some aquatic flora remaining including brooklime <i>Veronica beccabunga</i> and water figwort <i>Scrophularia auriculata</i> . The meadow is grass dominant and generally species poor with the exception of the bank and ditch. Species recorded in the sward include bird's-foot-trefoil <i>Lotus corniculatus</i> , salad burnet <i>Sanguisorba minor</i> , smooth hawk's-beard <i>Crepis capillaris</i> , meadow barley <i>Hordeum secalinum</i> , meadow buttercup <i>Ranunculus acris</i> , jointed rush <i>Juncus articulatus</i> and marsh foxtail <i>Alopecurus geniculatus</i> .
St Mary's Churchyard, Pirton LWS	0.64 ha	350m W	Churchyard supporting moderately species-diverse, neutral to somewhat calcareous grassland with species such as common knapweed <i>Centaurea nigra</i> , ox-eye daisy <i>Leucanthemum vulgare</i> , lady's bedstraw <i>Galium verum</i> , common sorrel <i>Rumex acetosa</i> , hoary plantain <i>Plantago media</i> and burnet saxifrage <i>Pimpinella saxifraga</i> . Broadleaved hedges are present on the west and north boundaries.
Hitchin Road Verge LWS	1.28ha	480m S	Important calcareous road verges supporting a moderately diverse flora. The verges are backed by ditches and mixed species hedgerows. Species present include greater knapweed <i>Centaurea scabiosa</i> , rest-harrow <i>Ononis repens</i> , ox-eye daisy and harebell <i>Campanula rotundifolia</i> plus the uncommon species field mouse-ear <i>Cerastium arvense</i> , and the uncommon cornflower <i>Centaurea cyanus</i> has also been recorded.

Site name	Area (ha)	Distance and direction	Reasons for selection
Wood Lane LWS	0.31ha	620m SW	An old green lane and public bridleway supporting a variety of habitats ranging from species-rich calcareous grassland to scrub and beech <i>Fagus sylvatica</i> trees. The grassland includes species such as greater knapweed, salad burnet, fairy flax <i>Linum catharticum</i> , quaking grass <i>Briza media</i> , lady's bedstraw, common rock-rose <i>Helianthemum nummularium</i> , rest-harrow, burnet saxifrage and kidney vetch <i>Anthyllis vulneraria</i> .
Hill Farm Field Margin LWS	0.19 ha	830m SW	Arable field baulk/border which is important for arable weeds, including records for the UK Endangered species spreading hedge-parsley <i>Torilis arvensis</i> and field gromwell <i>Lithospermum arvense</i> .
High Down, The Close LWS	5.97ha	1.26km SW	Somewhat calcareous grassland with areas of relatively species-rich grass to the north and east but with disturbed secondary grass in the west. Species recorded in the sward include common bent <i>Agrostis capillaris</i> , sweet vernal-grass <i>Anthoxanthum odoratum</i> , quaking grass, dwarf thistle <i>Cirsium acaule</i> , common knapweed, bird's-foot trefoil and common sorrel.
Tingley Wood Northern Arable field LWS	9.97ha	1.33km SW	Arable field margin with diverse flora including plants uncommon to the County and national notable species (UK Endangered) such as round and sharp-leaved fluellens <i>Kickxia spuria</i> and <i>K. elatine</i> , parsley piert <i>Aphanes arvensis</i> , Venus' looking glass <i>Legousia hybrida</i> , field gromwell and narrow-fruited cornsalad <i>Valerianella dentata</i> .

Site name	Area (ha)	Distance and direction	Reasons for selection
Tingley Wood North Down LWS	2.41 ha	1.38 km SW	Chalk grassland and scrub on a north-facing slope supporting a rich calcareous flora including scarce species. Species recorded including quaking grass, common milkwort <i>Polygala vulgaris</i> , common rest-harrow, yellow rattle <i>Rhinanthus minor</i> , common centaury <i>Centaureum erythraea</i> , common eyebright <i>Euphrasia nemorosa</i> , squinancywort <i>Asperula cynanchica</i> and wild liquorice <i>Astragalus glycyphyllos</i> a Herts rare species.
Tingley Wood LWS	19.81 ha	1.42km SW	Ancient semi-natural woodland of pedunculate oak <i>Quercus robur</i> , ash <i>Fraxinus excelsior</i> and elm <i>Ulmus sp.</i> standards with hazel <i>Corylus avellana</i> and field maple <i>Acer campestre</i> coppice. Woodland indicator species recorded in the ground flora include bluebell, bugle <i>Ajuga reptans</i> , enchanter's nightshade <i>Circaea lutetiana</i> , giant fescue <i>Festuca gigantea</i> and common dog violet <i>Viola riviniana</i> . Rides and clearings and habitat diversity.
Knocking Hoe CWS	21.4 ha	1.92km SW	A County Wildlife Site containing chalk downland and neutral grassland, as well as several nationally rare plants. Several species of orchids are known from this site, amongst which is pyramidal orchid <i>Anacamptis pyramidalis</i> , a typical chalk grassland plant. It adjoins the Knocking Hoe Site of Special Scientific Interest and National Nature Reserve, which falls just outside the 2km radius of the Site.

Site name	Area (ha)	Distance and direction	Reasons for selection
Tingley Wood West Down & South Field Margin LWS	1.54 ha	1.62km SW	West down is a herb rich unimproved chalk grassland with some ranker areas and encroaching scrub. The sward includes grasses such as red fescue <i>Festuca rubra</i> , wood false-brome <i>Brachypodium sylvaticum</i> , crested hair-grass <i>Koeleria cristata</i> , upright brome <i>Bromopsis erecta</i> and sheep's fescue <i>Festuca ovina</i> . The herb community is diverse and includes uncommon plants. Species recorded include wild marjoram <i>Origanum vulgare</i> , greater knapweed, fairy flax, common eyebright, harebell, spiny rest-harrow <i>Ononis spinosa</i> , small scabious <i>Scabiosa columbaria</i> and autumn gentian <i>Gentianella amarella</i> . The site is good for butterflies. Hedgerows and broadleaved woodland border the site.

The Site falls within two Natural England SSSI impact risk zones (Natural England, 2019), however the development does not meet the criteria to require LPA consultation with Natural England.

The Land East of Walnut Tree Road in Pirton is surrounded on the eastern side by arable fields, and residential properties of Pirton village to the west. On the southern boundary of the Site there is Pirton Sports and Recreation ground. Beyond the residential properties to the east and north there are more agricultural fields. A small number of parcels of woodland are present within a 2km radius this includes Tingley Wood LWS an ancient woodland inventory site located 1.42km southwest. The species-rich native hedgerows bordering the property provide connectivity between the Site and the wider landscape connecting with hedgerows to the east and south.

The Site is not located within or adjacent to any Important Invertebrate Areas (IIA) or Important Plant Areas (IPA).

4.2. UK Habitat Classification and biodiversity baseline

The Site was found to comprise of two modified grassland fields, with encroaching bramble scrub within the southern field, and the northern field contains rubble, pallets, log piles, a metal barn, and a derelict shed, while the southern field has derelict field shelters. The fields are bordered by species-rich native hedgerows with trees. and a line of trees. More detailed species lists, along with their relative abundance, can be found in Appendix 2. The UK habitat classification survey map is provided in Figure

1, and a condition assessment map of the habitats is shown in Figure 2 at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

Modified grassland (g4)

Modified grassland covers most of the Site which was mostly mown to a short sward with longer grass present around the edge of the northern field and some ruderal vegetation dominated by spear thistle *Cirsium vulgare* with frequent prickly sow-thistle *Sonchus asper*, ragwort *Senecio jacobaea* and teasel *Dipsacus fullonum* along the western boundary of the southern field (Photograph 1 and Photograph 2, Appendix 3). Perennial ryegrass *Lolium perenne* and red fescue are the dominant grass species present with herbaceous species including black medick *Medicago lupulina* and creeping cinquefoil *Potentilla reptans*. This does not qualify as neutral grassland due to the lower forb density and diversity, and the dominant presence of perennial ryegrass. The longer grass within the northern field contained a number of piles of logs, pallets and rubble as well as farm equipment (Photograph 3 and Photograph 4, Appendix 3).

The grassland in the southern field (G1) is in good condition as it passed six out of the seven criteria for modified grassland including essential criterion one requiring 6-8 plant species per m² (G1 has 6 species per m²). The grassland in the northern field (G2) is in poor condition as this grassland failed essential criterion one (G2 has 5 species per m²). Both grasslands also fail the criteria for varied sward height. The grassland condition assessments are shown in Table 7 below.

Secondary codes relevant to this habitat include:

33 Line of trees

A line of trees runs along the western boundary, this was dominated by horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus* with a young elm *Ulmus sp.* The line of trees did not have a continuous canopy which was quite gappy.

The line of trees is in poor condition only passing two out of a possible five criteria for this habitat type. The line of trees failed the continuous canopy cover criteria as the canopy is gappy as well as the criteria for veteran features, as no trees had any veteran features, and the 6m vegetated strip on each side as it bordered the road on the western side. The line of trees condition assessment is shown in Table 8 below.

32 Scattered trees

A small number of scattered trees are present onsite, this includes one young horse chestnut tree adjacent to the barn within the northern field and four young and early mature ash, elm and oak *Quercus robur* trees along the northeastern boundary.

The scattered trees are in moderate condition each passing four out of a possible five criteria for this habitat type. These trees failed the criteria for mature trees as none of the trees are mature, and the criteria for veteran features as none of these trees contained veteran features. The individual trees condition assessment is shown in Table 9 below.

Developed Land: sealed surface (u1b).

There is a small area of hardstanding at the north west of the Site which comprises of a tarmac track leading up to the barn. There is no condition assessment for hardstanding.

Buildings (u1b5)

Two buildings are present: a large metal barn on the west of the northern field (Photograph 5 and Photograph 6, Appendix 3), and a small shed on the Western boundary along the line of trees of the northern field (Photograph 7, Appendix 3). There were two derelict open field shelters within the southern field these were comprised of timber and metal with corrugated metal roofs and have been overrun with bramble scrub (Photograph 8 and Photograph 9, Appendix 3). There is no condition assessment for buildings.

Bramble scrub (h3d)

A large area of bramble scrub is present in the southern field, which has overgrown the two derelict field shelters (Photograph 8 and Photograph 9, Appendix 3). There is no condition assessment for bramble scrub as this habitat condition is preassigned in the metric.

Species-rich native hedgerow with trees (h2a511)

Four species-rich native hedgerows border the fields at the north, south and east (Photograph 10 and Photograph 11, Appendix 3). These hedgerows contain a minimum of five species and have mature trees scattered throughout the hedgerows. These are dominated by hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* with abundant hornbeam *Carpinus betulus* and bramble *Rubus fruticosus* agg. The dominant tree species within the hedgerows is ash *Fraxinus excelsior*.

The hedgerow that separates the two fields (H1) is in poor condition as it fails four attributes and fails both attributes in more than one functional group. This hedgerow fails both attributes in functional group B as this hedgerow has gaps within the canopy that make up more than 10% of the hedgerow and has gaps of 0.5m or greater at the base of the hedgerow for more than 10% of the hedgerow. It also fails both attributes in functional group C as there is not 1m of undisturbed vegetation on 1m of either side of this hedgerow as the grass on the southern side is mown short and the grass on the northern side although is longer is used to store old farm equipment and contains a number of piles of logs, and palettes. There is also a large amount of common nettle *Urtica dioica* within the grassland at the base of the hedgerow on the southern side of the hedgerow.

The hedgerow at the northern boundary of the northern field (H4) is in moderate condition this is because it fails three attributes. This hedgerow fails both attributes in functional group B as this is fairly gappy with gaps in the canopy making up more than 10% of the hedgerow with gaps of 0.5m or greater at the base of the hedgerow for more than 10% of the hedgerow. The hedgerow also fails attribute C1 as there is not 1m of undisturbed vegetation on either side of this hedgerow.

The hedgerow along the eastern boundary (H2) and the hedgerow along the southern boundary of the southern field (H3) are in good condition. This is because the hedgerows fail no more than two attributes and does not fail both attributes in the same functional group. Both hedgerows fail attribute C1 as there is not 1m of undisturbed vegetation on either side of this hedgerow. Hedgerow H2 also fails attribute E1 which is the criteria for tree class as all of the trees within this hedgerow fall within the same age class.

The hedgerow condition assessment is shown in Table 10 below.

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Table 7: Grassland condition assessments

Grassland reference		G1	G2
Condition Assessment Criteria		Criterion passed (Yes or No)	
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	Pass	Fail
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Fail	Fail
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Pass	Pass
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Pass	Pass
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Pass	Fail
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Pass	Pass
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Pass	Pass
Essential criterion achieved (Yes or no)		Yes	No
Number of criteria passed		6	4
Condition Assessment Result (out of 7 criteria)		Score Achieved x/√	
Passes 6 or 7 criteria including passing essential criterion A		Good (3)	√
Passes 4 or 5 criteria including passing essential criterion A		Moderate (2)	
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)		Poor (1)	√

Table 8: Line of trees condition assessments

Line of trees reference		L1
Condition Assessment Criteria		
A	At least 70% of trees are native species.	Pass
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Fail
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Fail
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² .	Fail
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Pass
Number of criteria passed		2
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	✓

Table 9: Individual trees condition assessments

Condition assessment criteria		Tree number				
		1	2	3	4	5
A	The tree is a native species (or at least 70% within the block are native species).	Pass	Pass	Pass	Pass	Pass
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Pass	Pass	Pass	Pass	Pass
C	The tree is mature (or more than 50% within the block are mature) ¹ .	Fail	Fail	Fail	Fail	Fail
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Pass	Pass	Pass	Pass	Pass
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Fail	Fail	Pass	Fail	Fail
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Pass	Pass	Pass	Pass	Pass
Criteria passed		4	4	4	4	4

Condition assessment criteria		Tree number				
		1	2	3	4	5
Passes 5 or 6 criteria	Good (3)					
Passes 3 or 4 criteria	Moderate (2)	✓	✓	✓	✓	✓
Passes 2 or fewer criteria	Poor (1)					

Table 10: Hedgerow condition assessments

Condition assessment criteria				Hedgerow			
				H1	H2	H3	H4
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Pass	Pass	Pass	Pass
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Pass	Pass	Pass	Pass

Condition assessment criteria				Hedgerow			
				H1	H2	H3	H4
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Fail	Pass	Pass	Fail
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Fail	Pass	Pass	Fail
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	Fail	Fail	Fail	Fail
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Fail	Pass	Pass	Pass
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Pass	Pass	Pass	Pass

Condition assessment criteria				Hedgerow			
				H1	H2	H3	H4
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	Pass	Pass	Pass	Pass
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁶), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	Pass	Fail	Pass	Pass
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	Pass	Pass	Pass	Pass
Condition							
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.				✓	✓	
Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).						✓

Condition assessment criteria		Hedgerow			
		H1	H2	H3	H4
Poor	Fails a total of more than 4 attributes; OR Fails <u>both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	✓			

Figure 1: UK Habitat Classification map of Land East of Walnut Tree Road



Figure 2: Condition assessment map of habitats at Land East of Walnut Tree Road, Pirton



Target notes for Figure 1:

Target note	Description
1	Broken window in shed (Photograph 7, Appendix 3)
2	Gap above door (Photograph 7, Appendix 3)
3	Rubble pile (Photograph 3, Appendix 3)
4	Pile of metal roofing panels
5	Pile of pallets (Photograph 4, Appendix 3)
6	Log pile
7	Standing deadwood within hedgerow (Photograph 12, Appendix 3)

4.3. Biodiversity metric

The biodiversity baseline assessment shows that there are 11.71 habitat biodiversity units and 10.13 hedgerow biodiversity units at Land East of Walnut Tree Road, Pirton. The metric can be viewed as a separate attachment in Appendix 6. Table 11 provides a summary of how these units are distributed for habitat biodiversity units. This shows that the modified grassland makes the largest contribution to the biodiversity value of the Site, based on the statutory biodiversity metric. This is expected due to this habitat's dominance at the Site.

Table 11: Distribution of habitat biodiversity units between habitat types

Habitat	Area (ha)	Biodiversity units
Modified grassland	3.02	10.80
Bramble scrub	0.012	0.05
Individual trees	0.0326	0.26
Urban	0.021	0.00

The species rich native hedgerows with trees make the largest contribution to the biodiversity value of the hedgerows of the Site, contributing 10.01 of the hedgerow biodiversity units. These hedgerows are also a Habitat of Principal Importance as listed on the Natural Environment and Rural Communities Act (2006).

4.4. Protected species scoping survey

Plants and fungi

Several species of notable plant and fungus species were returned on the data search within a 2km radius of the Land East of Walnut Tree Road, Pirton. These included bluebell, which is listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and pasqueflower which is listed on Schedule 41 of the NERC Act (2006) as a species of Principal Importance.

No protected or notable plant species were identified onsite during the survey and the management of the short-mown grassland would limit notable or protected plant species ability to colonise. Therefore, the likelihood of protected or notable plant species being present is considered to be **negligible**.

No records of invasive non-native plant species were returned within the data search, and no invasive non-native plant species were recorded onsite during the survey. Therefore, the likelihood of the Site or within the zone of influence of the proposed development supporting invasive non-native plant species is **negligible**.

Invertebrates

A number of records of notable protected invertebrates were returned on the data search including the marsh fritillary butterfly, which is listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), and beaded chestnut moth, which is listed on Schedule 41 of the NERC Act (2006) as a species of Principal Importance.

The scrub and trees would provide some habitat for common invertebrates, and the modified grassland supported several forb species including selfheal *Prunella vulgaris*, creeping cinquefoil and white clover *Trifolium repens* which would provide some nectar and pollen for invertebrate species. However, this is limited and the Site does not have the structure and diversity to support significant invertebrate species or assemblages. Therefore, the likelihood of protected or notable invertebrate species being present onsite or within the zone of influence of the proposed development is determined to be **negligible** and this species group is not considered further within this report.

Fish

There is no suitable aquatic habitat present onsite or adjacent to the site, and so the likelihood of fish species within the zone of influence is **negligible**, and they are not considered further in this report.

Amphibians

Over 20 records of both common toad and great crested newt were returned for within 2km. A search of Defra's MAGIC website returned no granted European Protected Species Licences for great crested newt within 2km. The Site also falls within an amber Natural England risk zone for great crested newt. There is no suitable aquatic habitat for amphibians present onsite, however there are four ponds within

a 500m radius the closest pond is 25m north of the Site. The locations of these ponds can be seen in Figure 3 below.

The Site contains some suitable terrestrial habitat for great crested newts including hedgerows, rubble piles and long grassland on the Northern Field. The likelihood of amphibian species being present onsite or within the zone of influence of the proposed development is determined to be **moderate**.

Reptiles

The data search returned four records of adder, two of common lizard, two of grass snake and three of slow-worm within 2km. The tall grass, hedgerows and rubble piles provide suitable refuge for reptiles. There is connectivity with the wider landscape through the gate at the eastern boundary and there are strong linear features with the line of trees and hedgerows onsite which connect to a network of hedgerows and lines of trees within the wider landscape which could allow reptiles to disperse onto the Site. The likelihood of reptiles being present onsite and within the zone of influence of the proposed development is considered to be **moderate**.

Birds

5 species were recorded during the site visit. These species are shown in Table 12 together with their conservation status. It is important to note that this is not a full inventory of species for the Site.

Table 12: Bird species recorded during site visit at Land East of Walnut Tree Road, Pirton.

Common name	Systematic name	S1 W&CA ¹	BoCC ² Status	S41 SPI ³	Local PrSp ⁴
Red kite	<i>Milvus milvus</i>	Yes	Green	No	No
Robin	<i>Erithacus rubecula</i>	No	Green	No	No
Green woodpecker	<i>Picus viridis</i>	No	Green	No	No
Woodpigeon	<i>Columba palumbus</i>	No	Amber	No	No
House sparrow	<i>Passer domesticus</i>	No	Red	Yes	No

¹ Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)

² Birds of Conservation Concern (see Appendix 1)

³ Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)

⁴ Local Priority Species

The data search returned numerous records of protected and notable bird species listed on Section 41 of the NERC Act (2006), Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), and red listed species on the Birds of Conservation Concern list including barn owl *Tyto alba*, house sparrow and kingfisher *Alcedo atthis*. House sparrow was recorded onsite during the survey.

The field shelters, scrub, hedgerows, trees and shed all provide suitable habitat for breeding bird species. All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). The mature trees present within the hedgerows and line of trees onsite provide limited features to be utilised by protected species or notable assemblages of bird species in comparison to the stands of woodland within the wider landscape, and the grassland is too short to be utilised by ground nesting birds. Although one species listed on Schedule 1 and one Species of Principal Importance were recorded onsite during the survey it is considered that there is **negligible** potential to support notable assemblages of protected species. The habitats onsite provide suitable habitat for common nesting bird species, therefore the likelihood of the Site hosting small numbers of common breeding birds is **high**.

Bats

The data search returned a number of bat records within 2km of the Site; these consisted of nine bat species; barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, common pipistrelle *Pipistrellus pipistrellus* and brown long-eared bat *Plecotus auritus*, as well as a number of records of unidentified bat species, pipistrelle species and *Myotis* species.

A search of Defra's MAGIC website returned 3 European Protected Species Licences granted for destruction of a common pipistrelle non-breeding roost, licence period June 2015-May 2020). These licenses were granted within 1km east and northeast of the Site. Overall, the data search shows that a good diversity of bat species has been recorded in the local area, including species that are known to roost in buildings such as pipistrelle species and brown long-eared bat, and species that are known to roost in trees including pipistrelle species and noctule.

There are several trees present within the hedgerow on the northern boundary of the Site, and a visual assessment was carried out on each of these trees to assess their potential of supporting roosting bats. No potential roosting features were identified in the trees present within this hedgerow and they were deemed to hold negligible bat roosting potential. A full Preliminary Roost Assessment of the buildings was not undertaken however a visual assessment of , the barn and the derelict shed within the northern field was undertaken during the survey and were found to have limited features that could potentially support roosting bats including gaps above the door of the shed and a broken window (Photograph 7, Appendix 3), and lifted metal barge boards along the northern aspect of the barn. The visual assessment concluded that the Site has **low** potential to host roosting bats.

Whilst the trees onsite are unlikely to support bat roosts, the hedgerows and trees on site may provide foraging opportunities for commuting bats. The hedgerows and line of trees provide strong linear features that connect to the wider environment and provide habitat for foraging and commuting bat

species onsite and within the wider landscape. The likelihood of foraging and commuting bats being present is considered to be **moderate**.

Badgers

Forty records of badgers were returned from the data search. No evidence of badgers were identified during the survey visit and there is limited sett building and foraging habitat present onsite. However, there is sett building habitat present within the fields adjacent to the site and as badgers are active creatures their territory changes regularly; the likelihood of badgers being present is therefore considered to be **low**.

Other mammals

The data search returned 19 recent records of hedgehogs within a 2km radius. The scrub and hedgerows at the Site provide suitable refuge and foraging habitat for hedgehog. The adjacent hedgerow provides some connectivity to the residential properties east of the Site, and surrounding fields would provide further foraging habitat for hedgehogs. The likelihood of hedgehog being present is considered to be **low**.

The data search returned numerous records of brown hare within a 2km radius. There is limited suitable habitat for hare onsite, and a greater amount of suitable habitat in the surrounding area in the form of agricultural fields and hedgerows. The habitat onsite has some potential to support hares and therefore the likelihood of hares being present is considered to be **low**.

Figure 3: Location of ponds within 500m of Land East of Walnut Tree Road, Pirton



5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

Onsite habitats

The species-rich native hedgerows around the boundaries of the two fields are a Habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (NERC) (2006). These should be retained where possible and protected from harm during construction, this should be detailed within a Construction Ecological Management Plan (CEcMP).

Recommendation 1

Retain and protect the species-rich native hedgerows with trees where possible during construction, with measures for their protection to be detailed within a Construction Ecological Management Plan (CEcMP).

Amphibians

The Site is located within an amber Natural England Impact Risk Zone for great crested newt under the District Level Licensing scheme. It is well connected to the wider landscape and suitable terrestrial and aquatic habitat for great crested newts. There are four ponds within a 500m radius, the closest of which is approximately 25m north and only separated by a small country road which would not act as a barrier for dispersal, and the habitats present onsite also provide suitable terrestrial habitat for this species group. Clearance of these habitats could result in disturbance, killing or injuring of great crested newt.

Great crested newts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species (Amendment) Regulations 2017; (see Appendix 1). It is an offence to intentionally or recklessly damage or destroy a breeding site or resting place, deliberately disturb or recklessly disturb great crested newts in a place used for shelter and to deliberately capture, kill or intentionally injure great crested newts.

As such it is recommended that one of the two below approaches is undertaken to prevent the above impacts.

The first option is to undertake an eDNA survey of the ponds within a 500m radius to establish the presence or likely absence of this species. If a negative result is returned then this would likely be sufficient to rule out the presence of this species, eliminating the need for mitigation. However, if great crested newts are found to be present then a Natural England European Protected Species Licence or

a District Level Licence will be required. eDNA surveys can be completed between 15 April and 30 June.

An alternative course of action could be to obtain a great crested newt District Level Licence at the initial stages of the project. This would allow the project to proceed lawfully without the need for survey effort of site-specific mitigation measures. In lieu of the surveys and mitigation, a conservation payment is made to offset any impacts on the species. This payment funds the creation of habitats and ponds in the district. The first step is to submit an application form to Natural England to enquire whether the development is eligible under district level licencing. Once the Site has been approved, a provisional Impact Assessment and Conservation Payment Certificate (IACPC) is applied for. The licence itself is only applied for once planning permission is granted which will include a payment to Natural England which is calculated based on the amount of suitable habitat lost.

Recommendation 2a

eDNA surveys to be undertaken on all of the ponds within 500m of the Site, these surveys must be taken between mid-April and the end of June.

OR

Recommendation 2b

A District Level License for great crested newts should be acquired from Natural England for the duration of the works.

Amphibians naturally proceed along any vertical barrier they meet. In the context of a road, this is where the kerb line meets the road surface. When they reach a gully, many fall in and subsequently die of starvation. Inclusion of Wildlife Kerbs next to roadside gullies will allow amphibians to safely pass via a bypass recess in the front face of the kerb. An example of a wildlife kerb is provided in Appendix 5.

Recommendation 3

Include wildlife kerbs on new access roads/streets to allow amphibians to safely bypass roadside gullies.

Reptiles

Suitable habitat for reptiles is present in the form of grassland, piles of logs, pallets and rubble, and bramble scrub, which provide a matrix of habitats for foraging, basking and hibernating. The Site is well connected to the wider landscape with the hedgerows and line of trees providing strong linear features that reptiles can use for dispersal.

All UK reptile species are protected under Schedule 5 of the Wildlife & Countryside Act (1981), and are listed as Species of Principal Importance under the NERC Act (2006). It is an offence to intentionally kill or injure individuals of these species (see Appendix 1 for more information).

There is a risk of killing and injuring reptiles during habitat clearance. It is recommended that reptile surveys are conducted to ascertain the presence or likely absence of these species, and to identify any necessary mitigation, if required. These surveys should be carried out using artificial cover objects (on or under which reptiles can bask). The optimum months in which to carry out the surveys are April, May and September; seven visits should be conducted during suitable weather conditions according to guidance published by Froglife (1999).

Recommendation 4

Reptile survey undertaken during the active season (April, May, June and September Inclusive) to determine the presence/likely absence of reptiles onsite.

Birds

The field shelters, scrub, hedgerows, trees and shed all provide suitable habitat for breeding bird species. All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). It is recommended that vegetation and building clearance is undertaken outside of the breeding bird season (March-August inclusive), if this is not feasible then vegetation and building clearance must be preceded by a nesting bird check undertaken by a suitably qualified ornithologist.

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs. Scheduling vegetation and building removal works between the months of September and February inclusive (i.e. outside of the bird season) would avoid impacts on breeding birds.

Where vegetation and building clearance works are required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 5

Schedule vegetation and building clearance works between the months of September and February inclusive to avoid impacts on breeding birds. Where this timing is not feasible works should be preceded by a nesting bird check undertaken by a suitably qualified ornithologist.

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

Bats

All bat species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended). Bats are also Species of Principal Importance listed on Section 41 of the NERC Act (2006). It is an offence to deliberately disturb a bat, damage or destroy a bat roost, intentionally or recklessly disturb a bat at a roost, or obstruct access to a roost.

The barn and the derelict shed within the northern field have features that are suitable to support roosting bats. It is recommended that a Preliminary Roost Assessment of these two buildings is undertaken to confirm the potential of these buildings to support roosting bats. A Preliminary Roost Assessment can be undertaken at any time of year.

Recommendation 6

Undertake a Preliminary Roost Assessment on the barn and shed within the northern field to ascertain their potential to support roosting bats.

The hedgerows and line of trees surrounding the two fields have the potential to be used by commuting and foraging bats. Removal of areas of commuting and/or foraging habitat is likely to cause disturbance and will negatively impact on this species group.

As such it is recommended that further night-time bat walkover surveys (NBW) and static monitoring surveys are completed at Land East of Walnut Tree Road, Pirton in accordance with the methodology stated within the Bat Conservation Trust's Good Practice Guidelines. One NBW survey should be completed per season (spring – April/May, summer – June/July/August, autumn – September/October). This should be combined with static bat detector monitoring undertaken for a minimum of five consecutive nights per month (April to October).

Recommendation 7

Complete a suite of night-time bat walkover surveys and static detector monitoring surveys to identify the species utilising the Site and key foraging areas and commuting routes. These surveys should be completed in accordance with the methodology set out within the Bat Conservation Trust's Good Practice Guidelines (Collins, 2023).

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (ILP, 2023). It is strongly recommended that any proposed exterior lighting on the new buildings and access roads is designed and managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats. All mature hedgerows and trees around the site should remain unlit. The sensitive lighting strategy should be developed following the guidelines set out in the BCT Guidance Note 08/23 (ILP, 2023). These measures should be secured through a planning condition.

Recommendation 8

Light pollution from any lighting should be minimised both during and after the construction phase. A sensitive lighting scheme should be developed and secured through a planning condition to allow for suitable roosting and foraging areas for bats within the site.

Badgers

No direct evidence of badgers was identified during the survey visit and there is limited sett building and foraging habitat present onsite. However, there is sett building habitat present within the fields adjacent to the Site and the grassland and scrub provides some suitable foraging and commuting habitat for badgers.

We recommend that a pre-commencement badger survey is undertaken prior to the commencement of works to determine the presence/absence of active badger setts on or within 30m of the development. This should be detailed within the CEcMP

Simple measures to ensure that badgers are not harmed during the construction phase of the project should be implemented including:

- No trenches should be left open overnight, if this is not possible, a method of egress should be provided so that badgers can get out;
- Any stock piles of earth created during construction should be covered if they are to be left for any length of time to ensure that they are not colonised by badgers.

These practices should be outlined within the CEcMP.

Recommendation 9

Undertake a pre-commencement badger check and adopt badger-sensitive construction practices during the construction phase of the project. These should be detailed within a CEcMP.

Other mammals

There is suitable habitat for both brown hare and hedgehog onsite. It is recommended that any vegetation clearance is undertaken systematically with vegetation cleared in a directional manner from the inside outwards enabling any hedgehogs or hares present to disperse, regular checks for these species should be made throughout the duration of the vegetation clearance. This should be detailed within a CEcMP.

Recommendation 10

Vegetation clearance should be undertaken systematically with vegetation cleared in a directional manner to enable brown hare and hedgehog to disperse, with regular checks for these species during the process. This should be detailed within a CEcMP.

The installation of boundary fences between gardens can impact on hedgehogs through loss of habitat connectivity. At least one 13cm x 13cm hole should be installed at the bottom of each boundary fence (with a focus on fences separating residential gardens, and excluding fences adjacent to roads), in order to maintain connectivity for hedgehogs between properties. These 'hedgehog highways' (PTES, 2018) should have appropriate signage installed to indicate their purpose and stipulate that they should remain open.

Recommendation 11

Maintain habitat connectivity for hedgehog through the installation of at least one 13cm x 13cm hole at the bottom of each boundary fence (with a focus on fences separating residential gardens and excluding fences adjacent to roads). These should be accompanied with appropriate signage indicating their purpose and stipulating that they should remain open.

Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site.

The Statutory Biodiversity Metric shows that biodiversity can be enhanced by improving the condition of existing habitats, or by converting low distinctiveness habitats into higher distinctiveness habitats. The habitats onsite are dominated by low distinctiveness modified grassland. Any retained modified grassland could be uplifted to other neutral grassland by removing the sward and reseeded with an appropriate wildflower mix. Additional higher distinctiveness habitats could be created onsite including ponds, native scrub and tree planting. This will increase the habitat gains following development and provide a number of opportunities to increase the Site's value for local wildlife.

These recommendations should be incorporated into a Biodiversity Net Gain assessment to ensure that the required 10% net gain in biodiversity under the Environment Act (2021) is achieved onsite and to ensure that provisions are made to enhance the Site for biodiversity post-development.

Recommendation 12

Increase the biodiversity value by the enhancement of the modified grassland to neutral grassland and the creation of other habitats including ponds, native scrub and tree planting, and incorporate these changes into a Biodiversity Net Gain assessment to ensure that a minimum 10% net gain in biodiversity is achieved.

The Environment Act (2021) states that all Biodiversity Net Gain assessments must be accompanied by an appropriate thirty-year management plan, outlining how the habitats will be created and managed over that time period. This serves to ensure that all proposed habitats achieve the desired ecological value used in net gain calculations. It is recommended that a Habitat Management and Monitoring Plan (HMMP) is produced in order to ensure legislative compliance.

Recommendation 13

Produce a Habitat Management and Monitoring Plan post-planning permission outlining the means of delivery of the net gain proposals developed within a 30-year management plan.

Biodiversity enhancements should not focus on the statutory biodiversity metric alone. The metric does not specifically cover species requirements. There are opportunities to provide features for species including bat, bird and hedgehog boxes. Examples of suitable hedgehog nest boxes are shown in Appendix 4 together with information concerning the correct siting of these enhancement features.

Additionally, the creation of deadwood features at the site will be particularly valuable for invertebrates as a foraging resource, which in turn benefits a range of other species such as hedgehogs and reptiles. This could include rotting roots or tree stumps spread around various locations. The drilling of holes or cutting of notches can add even more value for invertebrates.

Recommendation 14

Incorporate simple biodiversity enhancement measures at the site, including the provision of hedgehog nest boxes and deadwood features.

Enhanced opportunities for breeding birds should be incorporated into the design scheme. Bird boxes should be mounted on trees, fences and built structures at the site. It is recommended that there is focus on swifts, together with the provision of generalist bird boxes. Examples of suitable boxes are shown in Appendix 4 together with information concerning the correct siting of these enhancement features.

Recommendation 15

A minimum of forty bird boxes should be installed, to include 25 swift boxes, ten generalist boxes with a 32mm entrance hole and five generalist boxes with a 26mm entrance hole.

The wider landscape has the potential for use by foraging bats. With this in mind, enhanced opportunities for roosting bats should also be provided through installation of bat boxes. Exact recommendations for bat boxes will be recommended once further survey effort for bat species has been concluded.

Recommendation 16

Incorporate bat boxes into the design scheme.

In order to synthesise the impacts of the proposed development on protected species, habitats and the wider landscape an Ecological Impact Assessment (EclA) should be undertaken at the Site following the completion of the recommended surveys at the Site.

Recommendation 17

Produce an Ecological Impact Assessment (EclA) for the Site once all further ecological survey work has been completed.

Summary of recommendations

Table 13 below summarises the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

	No action required for this species group at this stage
	Action required (see notes for details)
	Level of action required will be determined following the further survey work

Table 13: Summary of recommendations at Land East of Walnut Tree Road, Pirton

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	Retain existing hedgerows and line of trees.	Develop CEcMP Retain existing hedgerows and line of trees	Detail tree and hedgerow protection measures in CEcMP	Native planting
Amphibians	Further survey OR District Level Licence	TBC	TBC	TBC
Reptiles	Further survey	TBC	TBC	TBC
Bats	Further survey	Develop a sensitive lighting strategy	Incorporate integrated bat boxes into new buildings	Bat boxes and native planting

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Birds	No	No	Timing of works for vegetation removal OR further survey work Incorporate integrated bird boxes into new buildings	Bird boxes and native planting
Badger	No	Develop CEcMP Pre-commencement badger check	Follow CEcMP	No
Hedgehog	No	Develop CEcMP with details of systematic vegetation removal for protection of hedgehog	Follow CEcMP	Native planting
Brown hare	No	Develop CEcMP with details of systematic vegetation removal for protection of brown hare	Follow CEcMP	No

Table 14: Summary of further surveys recommended at Land East of Walnut Tree Road, Pirton

Species/species group	Purpose of survey	Survey period (inclusive unless otherwise stated)
Amphibians (eDNA surveys)	Confirm presence/absence	April-June
Reptiles	Confirm presence/absence	Apr, May, Sep
Bats (activity transects)	Understand species assemblages and identify key foraging areas or commuting routes	April-Oct
Bats (daytime roost inspection)	Assess potential features for roosting bats	Jan-Dec

6. CONCLUSIONS

A Preliminary Ecological Appraisal and Biodiversity Net Gain baseline assessment were undertaken at Land East of Walnut Tree Road, Pirton in order to support a planning application for the construction of up to 50 residential dwellings.

The site is comprised predominantly of modified grassland with encroaching bramble scrub, buildings, and scattered trees. There is a habitat biodiversity baseline of 11.71 habitat units and this value is largely generated by the modified grassland. Species-rich native hedgerows with trees border the fields to the north, south and east with a line of trees along the western boundary, providing a hedgerow biodiversity baseline of 10.13 hedgerow units, largely generated by the species-rich native hedgerows with trees. The species-rich native hedgerows with trees are considered to be a Habitat of Principal Importance and have ecological value. It is recommended that these are retained and protected where possible during development with details for their protection detailed within a Construction Ecological Management Plan.

There are suitable habitats onsite for great crested newts and reptiles; the site is well connected to the wider landscape and in close proximity to four ponds. It is recommended that eDNA surveys for great crested newts are undertaken on the ponds within 500m to ascertain presence or likely absence. Alternatively, vegetation and potential hibernacula clearance should proceed under a district level licence for great crested newts. Reptile surveys should be undertaken to confirm the presence/absence of these species and the recommendation of any necessary mitigation. Works should be timed sensitively to avoid impacts on nesting birds within the vegetation and buildings, where sensitive timing is not feasible, works must be preceded by a nesting bird check. The barn and shed within the northern field both have suitable features to support roosting bats and the line of trees and hedgerows have potential to support commuting and foraging bats; it is therefore recommended that a Preliminary Roost Assessment is undertaken on these buildings and that night-time bat walkover surveys are undertaken at the site in order to determine their potential to support roosting, foraging and commuting bats and the need for further survey effort with regards to this species.

Badger, brown hare and hedgehog are likely present within the local landscape and steps should be taken during the construction phase of development to ensure their safety; these should be detailed within a Construction Ecological Management Plan. These include systematic vegetational removal in a directional manner for hedgehog and hare, and the adoption of badger-sensitive construction practices including a pre-commencement badger check.

In order to assess the impact of the development on protected species, habitats and the wider landscape an Ecological Impact Assessment should be undertaken following the recommended surveys.

In line with the National Planning Policy Framework, and Local Planning Policy the biodiversity at the Site should be enhanced. The biodiversity baseline at Land East of Walnut Tree Road, Pirton is largely generated through a dominance of low distinctiveness habitats. The Statutory Biodiversity Metric shows that biodiversity can be increased through the enhancement of existing habitats or the uplift of low distinctiveness habitats to higher distinctiveness habitats. There is an opportunity to increase the biodiversity onsite through the enhancement of any retained modified grassland to other neutral grassland which is a habitat with a higher distinctiveness, and through the creation of other habitats with a higher distinctiveness including a pond, native tree and scrub planting.

The habitat creation and enhancements should be supported by a Biodiversity Net Gain assessment in order to comply with the requirements of the Environment Act 2021, National Planning Policy Framework, and Local Planning Policy, a 10% net gain in biodiversity post-development will be required. Bird, bat and hedgehog boxes should be included post-development as well as deadwood features for invertebrates. To amalgamate these recommendations and ensure long-term security of these habitats a Habitat Management and Monitoring Plan (HMMP) should be created.

7. REFERENCES

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8. APPENDICES

8.1. Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians		
Great crested newt <i>Triturus cristatus</i> Natterjack toad <i>Epidalea calamita</i>	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Deliberately capture or kill, or intentionally injure; • Deliberately disturb or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
	Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	
Reptiles		
Common lizard <i>Zootoca vivipara</i> Adder <i>Vipera berus</i> Slow-worm <i>Anguis fragilis</i> Grass snake <i>Natrix helvetica helvetica</i>	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill or injure individuals of these species (Section 9(1)).

Subject	Legislation (England)	Relevant prohibited actions
Sand lizard <i>Lacerta agilis</i> Smooth snake <i>Coronella austriaca</i>	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	- Deliberately or intentionally kill, capture (take) or intentionally injure; - Deliberately disturb; - Deliberately take or destroy eggs; - Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or - Intentionally obstruct access to a place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	- Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or - Disturb the dependent young of any wild bird listed on Schedule 1.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	- Deliberately capture, injure or kill a bat; - Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	distribution or abundance of the species); • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or • Intentionally or recklessly obstruct access to a roost. In this interpretation, a bat roost is "<i>any structure or place which any wild [bat]...uses for shelter or protection</i>". Legal opinion is that the roost is protected whether or not the bats are present at the time.
Badger <i>Meles meles</i>	Protection of Badgers Act 1992	Under Section 3 of the Act: • Damage a sett or any part of it; • Destroy a sett; • Obstruct access to, or any entrance of, a sett; or • Disturb a badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a badger (Natural England 2007).
Hazel dormouse <i>Muscardinus avellanarius</i>	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Intentionally or deliberately capture or kill, or intentionally injure;

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	- Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; - Damage or destroy a breeding site or resting place; - Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and - Possess an individual, or any part of it, unless acquired lawfully.
Otter <i>Lutra lutra</i>	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	- Deliberately capture, injure or kill an otter; - Deliberately disturb an otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; - Intentionally or recklessly disturb any otter whilst it is occupying a holt; - Damage or destroy or intentionally or recklessly obstruct access to an otter holt.
	Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	
Water vole <i>Arvicola amphibius</i>	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	- Intentionally kill, injure or take water voles; - Possess or control live or dead water voles or derivatives; - Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or - Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.

Subject	Legislation (England)	Relevant prohibited actions
<i>Crustaceans</i>		
White-clawed crayfish <i>Austropotamobius pallipes</i>	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	Intentionally kill, injure or take white-clawed crayfish by any method.

The Environment Act 2021

The Environment Act 2021, sets out key legislation after the UK's exit from the European Union. With the largest changes to green regulations in decades, the Act includes the establishment of an Office for Environmental Protection, targets on air pollution, water quality and biodiversity, and the enshrinement of the 25 Year Environment Plan in law. The Act also makes provisions for a mandatory 10% net gain in biodiversity for all developments covered by the Town and Country Planning Act and it also introduces a statutory requirement for Local Nature Recovery Strategies.

Full legislation text available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

The Conservation of Habitats and Species Regulations 2017 (as amended)

Full legislation text available at: [The Conservation of Habitats and Species Regulations 2017 \(as amended\) \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2017/10/contents/enacted)

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: [http://www.legislation.gov.uk/ukpga/1981/69/contents](https://www.legislation.gov.uk/ukpga/1981/69/contents).

Countryside and Rights of Way Act 2000

Full legislation text available at: [http://www.legislation.gov.uk/ukpga/2000/37/contents](https://www.legislation.gov.uk/ukpga/2000/37/contents)

Protection of Badgers Act 1992

Full legislation text available at: [http://www.legislation.gov.uk/ukpga/1992/51/contents](https://www.legislation.gov.uk/ukpga/1992/51/contents)

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: [http://www.legislation.gov.uk/ukpga/2006/16/section/41](https://www.legislation.gov.uk/ukpga/2006/16/section/41)

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: <http://www.legislation.gov.uk/ukpga/1996/3/contents>

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 245 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 70 species on the Red list, 103 on the Amber list and 72 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>.

The revised NPPF was updated on 12 December 2024 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour

of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 187 to 201 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs.

Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- 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.

8.2. Appendix 2: UK Habitat Classification species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Modified grassland G1 (southern field)

Common Name	Systematic Name	Relative abundance
Perennial rye-grass	<i>Lolium perenne</i>	D
Red fescue	<i>Festuca rubra</i>	A
Smooth meadow-grass	<i>Poa pratensis</i>	A
Black medick	<i>Medicago lupulina</i>	F
Common nettle	<i>Urtica dioica</i>	F
Dandelion	<i>Taraxacum agg.</i>	F
Ribwort plantain	<i>Plantago lanceolata</i>	F
Spear thistle	<i>Cirsium vulgare</i>	F
White clover	<i>Trifolium repens</i>	F
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Prickly sow-thistle	<i>Sonchus asper</i>	O
Ragwort	<i>Senecio jacobaea</i>	O
Red clover	<i>Trifolium</i>	O
Selfheal	<i>Prunella vulgaris</i>	O
Teasel	<i>Dipsacus fullonum</i>	O
Geranium sp.	<i>Geranium sp.</i>	R
Hawkbit sp.	<i>Leontodon sp.</i>	R

Modified grassland G2 (northern field)

Common Name	Systematic Name	Relative abundance
Perennial rye-grass	<i>Lolium perenne</i>	D
Red fescue	<i>Festuca rubra</i>	A
Dandelion	<i>Taraxacum agg.</i>	F
Ribwort plantain	<i>Plantago lanceolata</i>	F
Teasel	<i>Dipsacus fullonum</i>	F

Common Name	Systematic Name	Relative abundance
Bristly ox-tongue	<i>Helminthotheca echioides</i>	F
Common nettle	<i>Urtica dioica</i>	F
Dock sp.	<i>Rumex sp.</i>	O
Evening-primrose sp.	<i>Oenothera sp.</i>	R
Hogweed	<i>Heracleum sphondylium</i>	R

Species-rich native hedgerow with trees

Common Name	Systematic Name	Relative abundance
Blackthorn	<i>Prunus spinosa</i>	D
Hawthorn	<i>Crataegus monogyna</i>	D
Ash	<i>Fraxinus excelsior</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	A
Dog rose	<i>Rosa canina</i>	A
Elder	<i>Sambucus nigra</i>	A
Field maple	<i>Acer campestre</i>	A
Hornbeam	<i>Carpinus betulus</i>	A
Elm	<i>Ulmus sp.</i>	O
Ivy	<i>Hedera helix</i>	R

Line of trees

Common Name	Systematic Name	Relative abundance
Horse chestnut	<i>Aesculus hippocastanum</i>	D
Sycamore	<i>Acer pseudoplatanus</i>	D
Elm	<i>Ulmus sp.</i>	R

Scattered trees

Common Name	Systematic Name	Relative abundance
Ash	<i>Fraxinus excelsior</i>	O
Horse chestnut	<i>Aesculus hippocastanum</i>	O

Common Name	Systematic Name	Relative abundance
Oak	<i>Quercus robur</i>	0

8.3. Appendix 3: Site photographs

Photograph 1: Modified grassland G1 (southern field) and H1



Photograph 2: Modified grassland G2 (northern field)



Photograph 3: Rubble pile



Photograph 4: Pile of pallets



Photograph 5: Metal Barn



Photograph 6: Metal barn



Photograph 7: Derelict shed



Photograph 8: Field shelters



Photograph 9: Field shelters



Photograph 10: Species rich native hedgerow with trees (H2)



Photograph 11: Species rich native hedgerow with trees (H4)



Photograph 10: Standing deadwood in hedgerow (H4)



8.4. Appendix 4: Bird and hedgehog box recommendations

Bird box recommendations

A large number of bird boxes are available, designed for the specific needs of individual species. These are normally either designed to be mounted onto trees, external walls or integrated into a building. In general, bird boxes should be mounted out of direct sunlight and prevailing winds, out of reach of predators, with suitable foraging habitat for the subject species close by. Bird boxes should also be left up over winter as they can provide useful roosting sites for birds in bad weather.

Nest boxes should be cleaned at the end of each bird breeding season. All nesting material and other debris should be removed from the box. It should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning is best undertaken from October to January when there is no risk of disturbing breeding birds.

Generalist boxes

Boxes to attract garden birds and woodland breeding species such as tits, nuthatch, redstart and pied flycatcher can be placed in gardens, orchards, woodlands and a wide variety of other habitats. The species of birds attracted to the box will depend upon the size of the entrance hole (see table below).

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east.

General		
Example	Description	Picture
Bird Brick Houses Integrated bird box	http://www.birdbrickhouses.co.uk/brick-nesting-boxes/integrated-bird-box/ Integrated into outside skin of 75mm and most 3" brickwork courses. Comes with a variety of hole sizes to suit particular bird species.	
Entrance Hole	Species	

28mm	Blue tit, marsh tit, coal tit, wren.	
34mm	Great tit, blue tit, marsh tit, coal tit, nuthatch, house sparrow	
40mm	Redstart and black redstart	
50m	Starling	
60m	Spotted flycatcher	
Schwegler No. 1B General Purpose Nest box	www.schwegler-nature.com Suitable for various garden and woodland birds, created with different sized entrance holes to avoid competition between species. Other variations (e.g. 2M) can be free hanging, to deter predators.	
Entrance Hole	Species	
26 mm	Blue tit, marsh tit, coal tit, possibly wren. All other species are prevented from using the nest box due to this smaller entrance hole	
32 mm	Great tit, blue tit, marsh tit, coal tit, redstart, nuthatch, tree sparrow, house sparrow.	
Oval	Redstart; also used by species that nest in the diameter 32 mm boxes. However, because more light enters the brood chamber, it is preferred by redstarts.	

Swift boxes

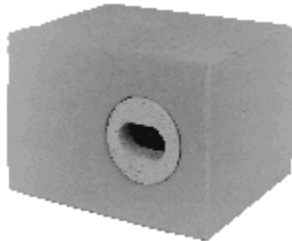
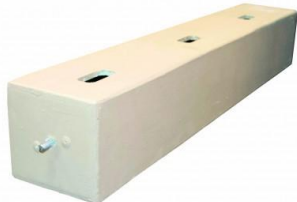
Swifts are colonial nesters and it is important to have several nest sites in one area. It is recommended that most buildings should have between 4 and 10 nest provisions. Swifts also feed almost exclusively on the aerial plankton of flying insects and airborne spiders of small to moderate size, so therefore require habitats which support these invertebrates.

Nest boxes designed for swifts should be installed at least 5m high, around the eaves of the building or under deeply overhanging eaves to allow swifts to drop into the air to forage. The boxes should be positioned away from climbing plants to avoid access for predators such as rodents.

Swifts typically nest in flat spaces within buildings or within a crevice or cavity. The ideal nest box should have an oval or rectangular hole around 30mm (h) x 65mm (w). The internal dimensions of the box should be approximately 400mm (w) x 200mm (d) x 150mm (h).

Swifts can be attracted to areas that they have not previously colonised using 'swift response calls'. Audio CDs are available for this purpose and are available on the Schwegler website (www.schwegler-nature.com).

Swift		
Example	Description	Picture
Swift S Brick	Introduction — S Brick (actionforswifts.com) Swift S bricks provide excellent nesting opportunities for swifts whilst fitting into the brickwork seamlessly without compromising the appearance of the building. The swift boxes will likely require an attraction call system for swifts. This can be set on timer and replays the tape of birds calling to attract them to the nest site, There is no set system for this, but assembly of parts can be achieved quite easily as outlined at this website: http://actionforswifts.blogspot.com/p/attraction-call-systems-for-swifts.html. The system can be purchased for about £30.	 
lbstock Swift Box	www.lbstock.com This swift brick can be built into a wall on new buildings.	

Swift		
Example	Description	Picture
Woodstone Build-in Swift Box	https://gardenature.co.uk This nest box is made from a concrete and wood fibre mix. It can be mounted on a wall, or it can be built into the fascia of a wall. The front of the Woodstone swift box can be removed for cleaning. It should be fitted at least 5 metres above the ground ensuring there is an unobstructed flight path for birds entering and leaving the box.	 A rectangular concrete and wood fibre nest box with a circular entrance hole. It is shown with mounting hardware (screws and a bracket) next to it.
Schwegler Brick Box Type 25	www.schwegler-nature.com This brick design can be built into the wall of the new development and the external surface, excluding the hole, can be rendered to match the surrounding wall.	 A square brick nest box with a circular entrance hole in the center of one face.
Triple Genesis Swift Nest Box	https://www.wildcare.co.uk/ It can be mounted on an external wall to provide three swift nesting sites.	 A long, rectangular wooden nest box with three circular entrance holes along its top edge.
Swift box model 30	http://actionforswifts.blogspot.com/p/diy-swift-box-designs.html This box is suitable for any location as it has a double thickness, waterproof roof (made of uPVC). The 30° sloping roof should deter predators.	 A wooden nest box with a white, sloping uPVC roof, mounted on a brick wall.

Swift		
Example	Description	Picture
Schwegler Swift Box Number 18	www.schwegler-nature.com This Swift Box No. 18 is ideally suited for creating Swift colonies under overhanging eaves.	

Hedgehog box

This should be located a quiet part of the Site, preferably against a wall, hedge or fence. The box entrance should not face south/ south east. On no account should the hedgehog house be creosoted or treated with non-water-based preservatives or paint as the fumes remain for a long time and can be harmful. If used, water-based preservatives should be on the outside of the box only.

Example	Description	Picture
NHBS Hedgehog nest box https://www.nhbs.com/hedgehog-nest-box	Exterior quality 12mm resin bonded ply. The box remains untreated on the inside. Best situated in a quiet corner of the garden, and covered with leaves and other garden debris. Removable lid for cleaning purposes and reinforced corners, manufactured with surface sunk nails to resist rusting. Nestbox size: Height 22cm x Width 38cms x Length 47cm	

8.5. Appendix 5: Wildlife Kerbs

Wildlife Kerbs

Amphibians and small mammals (voles, mice and shrews) naturally proceed along any vertical barrier they meet. In the context of a road, this is where the kerb line meets the road surface. When they reach a gully, many will fall in and subsequently die of starvation. Amphibians commuting to and dispersing from breeding ponds are particularly vulnerable if they have to cross a road.

The simple design of the ACO Wildlife Kerb features a bypass recess in the front face which allows amphibians and other wildlife to follow the kerb line safely.

Wildlife Kerb		
Example	Description	Picture
ACO Wildlife Kerb	https://www.aco.co.uk/products/wildlife-kerb Matches the standard HB2 kerb profile. Bypass pocket is set into the kerb to prevent wildlife falling into the road gully.	

8.6. Appendix 6: Statutory biodiversity metric

As attachment



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