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Preliminary Ecological Appraisal

Land north of Warnham Lodge Farm

Executive Summary

This Preliminary Ecological Appraisal (PEA) assesses the ecological value and constraints of land north of Warnham Lodge Farm, Horsham, in support of a proposed single self-build dwelling. The site is dominated by intensively managed, species-poor modified grassland, with adjacent areas of mixed scrub and broadleaved woodland lying outside the development boundary. The wider landscape supports a mosaic of high-value habitats, including ancient woodland, wet flushes, and ecological corridors.

Key findings include:

- No statutory designated sites within 2 km, but the nearby Benland Wood LWS and Hoopers Copse ancient woodland are important for local biodiversity.
- [redacted]
- No bat roosts or significant activity were recorded in the grassland, but a mature oak at the entrance has high potential for roosting bats and the adjacent landscape supports a rich bat assemblage.
- No evidence of ground-nesting birds, reptiles, dormice, or great crested newts within the grassland, though suitable habitat and recent records exist in the wider area, particularly in woodland and scrub.
- No invasive non-native species were observed on site, but vigilance is recommended due to local records in the wider landscape.

The development is designed to avoid high-value woodland and scrub habitats, focusing on low-value grassland. Key ecological constraints include the need to protect adjacent habitats, maintain hydrological patterns (especially towards Hoopers Copse and the North River tributary), and safeguard ecological connectivity. Opportunities exist to enhance the site's biodiversity through grassland diversification, woodland edge and scrub creation, wetland features, and improved habitat corridors.

The mitigation hierarchy prioritises avoidance (by siting development on grassland), minimisation (sensitive construction practices), compensation (habitat creation), and enhancement (long-term ecological management). Further surveys are not currently recommended due to the avoidance-led approach and low risk to most protected species, though a Ground Level Tree Assessment (GLTA) of the mature oak is advised if tree works are proposed.

Contents

Introduction

Background and Purpose

This Preliminary Ecological Appraisal (PEA) has been prepared on behalf of Robert and Vanessa Sharp to inform the proposed development at Land North of Warnham Lodge Farm, Horsham. The report is intended to support the planning process by identifying key ecological constraints, establishing a biodiversity baseline, and providing clear recommendations in line with current UK legislation and Horsham District Council requirements.

The aims of this report are to:

Identify Ecological Constraints: Assess the site for any ecological features or sensitivities that may constrain development.

Undertake an Extended UK Habitat Classification (UKHab) Survey: Identify and map all habitat types present within the site boundary.

Assess Protected and Notable Species Potential: Evaluate the likelihood of the site supporting protected or notable species through a combination of field survey and desk-based review of local biological records.

Recommend Further Surveys and Mitigation: Outline any additional ecological surveys required and propose mitigation measures where necessary.

Identify Opportunities for Ecological Enhancement: Suggest enhancements that could be incorporated into the site design to improve biodiversity value.

Provide Robust Baseline Data: Present clear and reliable ecological data to inform planning applications and guide future ecological management of the site.

Site description

The site comprises land north of Warnham Lodge Farm, located near Mayes Lane in Warnham within the administrative area of Horsham District Council. The site itself is predominately open grassland pasture, which is actively grazed by sheep and has recently been mown, resulting in a very short sward across much of the area. The wider landscape is characteristically rural, with extensive areas of broadleaved woodland and additional agricultural land forming the immediate surroundings. Within the overall landholding, there are also areas of mixed scrub and woodland; however, these are situated outside the proposed redline boundary for the current development. No statutory nature conservation designations are present within the site boundary, but the proximity of woodland and other semi-natural habitats in the wider landscape may offer ecological connectivity and support for protected and notable species.

The approximate red line boundary of the site and the immediate surrounding area are shown in Figure 1.

Figure 1 Approximate location of the red line boundary and wider blue line boundary, with immediate surroundings, based on Google Earth Pro imagery dated 14/05/2025 2024 (image captured June 2025).

Proposed development

The proposed development at Land North of Warnham Lodge, Mayes Lane, Warnham, West Sussex (RH12 3SG) comprises the construction of a single new detached dwelling with associated landscaping and ancillary features. The project is being brought forward by Mr & Mrs Sharpe as a self-build scheme.

The development site is currently open grassland pasture, actively grazed and recently mown, resulting in a short sward. The wider setting is rural, with broadleaved woodland and agricultural land nearby, but the proposed works are confined to the property boundary and do not extend into adjacent habitats.

The new dwelling is designed over three floors, with a total gross internal area of approximately 703m² (7,257 sq ft), and includes:

- Five bedrooms, each with en-suite facilities
- Multiple reception rooms including a drawing room, family room, and study
- Ancillary spaces such as a utility/boot room, plant room, pantry, and larder
- An integrated garage and provision for a future swimming pool and gym
- Carefully considered landscaping, including a terrace and green buffers to provide visual screening and ecological enhancement

The architectural approach is sensitive to the rural context, with the massing, materials, and layout designed to integrate with the landscape. The scheme retains existing site levels, maximises views, and references the agricultural character of the area through its form and landscaping.

Sustainable site management is a priority, with existing drainage features to be retained and enhanced where possible. The landscaping scheme will incorporate native planting and green infrastructure to support local biodiversity and ecological connectivity.

Self-Build and Biodiversity Net Gain (BNG) Exemption

As a self-build dwelling, this project qualifies for exemption from the mandatory 10% Biodiversity Net Gain (BNG) requirement under the Environment Act 2021 and associated regulations, provided all relevant criteria are met.

Figure 2 is the preliminary design for the proposed development.

Figure 2 Proposed Site Plan for New Build Dwelling at Land North of Warnham Lodge, Mayes Lane, Warnham, West Sussex (RH12 3SG).This plan illustrates the layout and arrangement of the proposed single dwelling and associated landscaping within the property boundary, as prepared by Simon Harvey Designs Ltd (Drawing No. 157_02, May 2025, 1:500 @A1).

For the purposes of this report, "the site" refers to the land at Land North of Warnham Lodge, Mayes Lane, Warnham, West Sussex (RH12 3SG), as defined by the red line boundary shown in Figures 1 and 2. "The proposed development" describes the scheme for a new single residential dwelling and associated works within this boundary. All references to "the site" and "the proposed development" throughout this report should be interpreted in this context.

Relevant Planning Policies and Legislation

The site was surveyed to assess its ecological value and to ensure the proposals were compliant with relevant planning policy and legislation. Policy guidance is provided by the National Planning Policy Framework (NPPF 2024) as well as the Horsham District Planning Framework (2015). These policies included the following which are considered relevant to ecology, biodiversity, and nature conservation:

Horsham District Planning Framework (2015):

- Policy 24: Environmental Protection
- Policy 25: The Natural Environment and Landscape Character
- Policy 26: Strategic Countryside Protection
- Policy 31: Green Infrastructure and Biodiversity
- Policy 37: Sustainable Construction

The assessment also takes account of principal legislation such as the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017, and the Environment Act 2021, which underpin the protection of species, habitats, and the delivery of Biodiversity Net Gain. Rather than listing all relevant legislation and policy in detail, this report signposts to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal and Ecological Impact Assessment for comprehensive information on current ecological legislation and best practice. The assessment has been undertaken in accordance with these guidelines to ensure a robust and proportionate approach.

Methodology

Desk Study

A desk study was undertaken to provide a comprehensive overview of the ecological context of the site and its surroundings, and to inform the scope of the field survey and assessment. The desk study aimed to identify:

- Statutory and non-statutory designated sites within the zone of influence,
- Records of protected and notable species,
- Priority habitats and ecological networks relevant to the site.

Data Sources and Search Areas

Sussex Biodiversity Record Centre (SxBRC)

Ecological data were obtained from SxBRC, the principal environmental record centre for East and West Sussex, including the Horsham district and Warnham parish. SxBRC collates data from local recorders, ecological consultants, and the public, ensuring a comprehensive and up-to-date biodiversity dataset.

The data request included:

- Protected and notable species records within a 1km radius of the site boundary
- Bat records within a 1km radius
- Bird records within a 1km radius
- Invasive species records within a 1km radius
- Statutory designated sites within a 2km radius
- Non-statutory designated sites and Section 41 (Priority Habitats) or other notable habitats, within a 1km radius of the site.

Desk study data on protected and notable species will be limited to records from the last ten years to ensure relevance and accuracy for the current assessment. Other data sources included:

- **MAGIC Map (Multi-Agency Geographic Information for the Countryside)** National datasets on statutory sites, habitats, and environmental constraints were reviewed to supplement local records and provide context on landscape-scale ecological features.
- **Aerial Imagery & Ordnance Survey Mapping** Recent aerial photography and OS mapping were used to assess current land use, habitat connectivity, and the wider landscape context.
- **Planning Portal and Local Authority Records** Relevant planning history and previous ecological assessments for the site and adjacent land were reviewed where available.

The desk study ensured the appraisal was informed by the most current and comprehensive biodiversity data available, supporting robust assessment of ecological constraints and opportunities in line with CIEEM (2017) and best practice.

Field Survey

A walkover survey was conducted on 31st May 2025 in accordance with the CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. The survey was undertaken by suitably qualified ecologists with experience in habitat assessment and protected species evaluation, and in suitable weather conditions to maximise detectability.

Habitats were classified using the latest UK Habitat Classification system (UKHab v2.01). This hierarchical and standardised approach supports robust baseline habitat assessment for the purposes of identifying ecological constraints and opportunities. The survey was not designed to inform a Biodiversity Net Gain (BNG) baseline.

Survey methodology included:

- Systematic mapping of all habitat types and features within the site boundary using GPS-enabled devices and field photography.
- Assessment of habitat condition, structure, and species composition for each habitat parcel.
- Use of quadrats within each habitat parcel, applying a DAFOR scale to determine the relative abundance and presence of plant species.
- Identification and recording of features with potential to support protected and priority species (e.g. mature trees, hedgerows, ponds, buildings, log piles).
- Direct observation and habitat suitability assessment for protected and notable species, informed by both field evidence and relevant desk study records.
- Use of photographic records and detailed target notes to document key habitats, features, and any signs of species presence (e.g. tracks, droppings, nests).
- Assessment of habitat connectivity and potential ecological corridors within and adjacent to the site.

Quality Assurance

All survey work and data analysis were subject to internal quality assurance procedures, including review by a senior ecologist. The methodology was designed to meet or exceed the requirements of CIEEM, DEFRA, Natural England, and Horsham District Council.

Limitations

Although a number of survey visits were completed to increase the reliability of the ecological assessment, it is important to acknowledge that no amount of survey effort can fully capture the complete use and occupation of a site by all species throughout the year. Multiple visits improve confidence in the findings by allowing for a broader snapshot of seasonal activity and species presence, but ecological systems are inherently dynamic and subject to change. As such, there remains the possibility that some species or ecological interactions were missed, and the assessment provides only a general indication of the site's ecological value at the times surveyed. Further or ongoing surveys may be required to address specific uncertainties or to capture additional seasonal or transient ecological activity.

Given the level of dilapidation, vegetative cover and potential asbestos containing materials, full access to each building and structure was not gained however, suitable vantage points (including drone inspection) allowed a satisfactory bat roost suitability assessment.

Biodiversity Net Gain (BNG) Exemption for Self-Build Developments

This development is being progressed on the basis that it qualifies for the self-build exemption from mandatory Biodiversity Net Gain (BNG) requirements. Under current regulations, self-build and custom build projects are exempt from BNG if they meet all of the following criteria: the development must consist of no more than nine dwellings, be located on a site no larger than 0.5 hectares, and consist exclusively of dwellings that are self-build or custom housebuilding as defined in the Self-build and Custom Housebuilding Act 2015. The exemption means that the statutory requirement to deliver a minimum 10% net gain in biodiversity value does not apply to qualifying self-build projects.

It is important to note that confirmation of this exemption should be sought from the Local Planning Authority (LPA) at an early stage to ensure that the development is formally recognised as exempt from BNG under the relevant legislation and guidance. Local policy requirements may vary, and the LPA may request supporting information to confirm eligibility for the exemption.

Results

Desk Study Results

Designated Sites

There were no statutory designated sites located within 2km of the site.

Non-Statutory Designated Sites (within 1km):

- Benland Wood Local Willdlife Site (LWS) - lies approximately 600 metres north of the proposed development, near Warnham. It is predominantly ancient woodland on Weald Clay, comprising semi-natural areas and some conifer plantations, with open glades, rides, and a unique Victorian-era imported chalk area supporting unusual chalk-loving plants. The woodland hosts diverse tree species including Pedunculate Oak (Quercus robur), Ash (Fraxinus excelsior), and Beech (Fagus sylvatica), with a rich shrub and ground flora such as Bluebell (Hyacinthoides non-scripta), Primrose (Primula vulgaris), and Early-purple Orchid (Orchis mascula). The chalk area supports downland species like Kidney Vetch (Anthyllis vulneraria) and Greater Butterfly Orchid (Platanthera chlorantha), rare in the Weald. Benland Wood is notable for its diverse butterfly fauna, including Small Blue (Cupido minimus), Grizzled Skipper (Pyrgus malvae), and Silver-washed Fritillary (Argynnis paphia). Management of rides and glades is recommended to enhance its value for butterflies.

Priority Habitats and Species Records

The findings, summarised in Table 1, highlight the presence of key habitats such as traditional orchard and ancient woodland, as well as records of protected species including reptiles and great crested newts. Additionally, several Section 41 Priority species were identified, indicating the ecological value of the surrounding area and informing the subsequent survey and mitigation strategy.

Table 1 Summary of Priority Habitats, Protected Species, and Other Notable Section 41 Species Recorded Within or Adjacent to the Site and Within a 1km Radius

Category	Feature/Species	Details / Records
Priority Habitats	Traditional orchard	Identified within or adjacent to the site and within 1km search area
	Deciduous woodland	Identified within or adjacent to the site and within 1km search area
	Ancient woodland	Identified within or adjacent to the site and within 1km search area
Protected Species	Great Crested Newt (Triturus cristatus)	1 adult, 21/03/2024, Mayes Park, Warnham (TQ15813473, 515815, 134735), approx. 630m south-west
	Common Toad (Bufo bufo)	1 adult, 20/04/2024, Dursfold, Mayes Park Farm, Warnham (TQ16083575, 516085, 135755), approx. 470m north-east
	Common Toad (Bufo bufo)	Present, 17/01/2024, Mayes Park, Warnham (TQ15833492, 515835, 134925), approx. 430m south-west

Category	Feature/Species	Details / Records
Other Notable Species	Cornflower (Centaurea cyanus)	1 flowering, 22/10/2024, Mayes Park, Warnham (TQ15893509, 515895, 135095), approx. 255m south
	Crosswort (Cruciata laevipes)	DAFOR abundant, 11/05/2024, Mayes Park Farm, Warnham (TQ15843536, 515845, 135365), approx. 60m south-west
	Bluebell (Hyacinthoides non-scripta)	500+ plants, 15/04/2024, Mayes Park, Warnham (TQ158349, 515850, 134950), approx. 400m south-west
	Bluebell (Hyacinthoides non-scripta)	100+ flowering, 13/04/2024, Mayes Park, Warnham (TQ15573461, 515575, 134615), approx. 820m south-west
	Devil's-bit Scabious (Succisa pratensis)	Present, 25/08/2022, Mayes Park, Warnham (TQ15633500, 515635, 135005), approx. 440m south-west
	Devil's-bit Scabious (Succisa pratensis)	Present, 25/08/2021, Mayes Park, Warnham (TQ15623504, 515625, 135045), approx. 430m south-west
	Devil's-bit Scabious (Succisa pratensis)	Present, 21/08/2021, Mayes Park, Warnham (TQ15613504, 515615, 135045), approx. 440m south-west
	Alder Leaf Beetle (Agelastica alni)	1 present, 13/03/2024, Mayes Park, Warnham (TQ15843491, 515845, 134915), approx. 440m south-west

Field Survey Results

Habitats

There were three distinct habitats recorded across the site, a habitat map showing the location and distribution of habitats is provided in Appendix 1. Table 2 provided a summary of the habitats found across the site, a description and justification for the habitat classification according to UKHab requirements, total area in hectares (ha) and where applicable species lists are provided along with a DAFOR scale score based on the distribution of species within quadrats that were surveyed in each habitat parcel.

Table 2

Habitat Type (UKHab Code)	Area (ha)	Habitat Photo	Description
Modified grassland (g4)	3.18		The modified grassland habitat across the 3 ha pasture was dominated by rough meadow-grass (Poa trivialis), with abundant Yorkshire fog (Holcus lanatus) and perennial ryegrass (Lolium perenne). Other frequent grasses include meadow foxtail (Alopecurus pratensis), cock's-foot (Dactylis glomerata), and false brome (Brachypodium sylvaticum). The herb layer is limited, with creeping cinquefoil (Potentilla reptans) and white clover (Trifolium repens) particularly abundant. No quadrat recorded more than five species, reflecting a low-diversity sward, typical of highly managed, agriculturally improved grassland. Scattered across the grassland, occasional and rare herbs include creeping buttercup (Ranunculus repens), ribwort plantain (Plantago lanceolata), salad burnet (Sanguisorba minor), dandelion (Taraxacum officinale), woodrush (Luzula sp.), cut-leaved crane's-bill (Geranium dissectum), lesser stitchwort (Stellaria graminea), slender trefoil (Trifolium micranthum), germander speedwell (Veronica chamaedrys), curled dock (Rumex crispus), bittersweet (Solanum dulcamara), woodland sedge (Carex sylvatica), and hoary plantain (Plantago media). Distinct patches along the western side of the site are more heavily dominated by bramble (Rubus fruticosus agg.) and nettle (Urtica dioica), but these areas are managed through the same grazing and mowing regime as the rest of the grassland and are maintained at a similar sward height. These patches, while visually distinct, remain part of the overall modified grassland habitat, consistent with UKHab definitions for grasslands with occasional scrub or ruderal species presence. Overall, the grassland is species-poor, with a closed sward and limited structural variation, reflecting intensive management and high soil fertility.

Habitat Type (UKHab Code)	Area (ha)	Habitat Photo	Description
Other broadleaved woodland (w1g)	0.32		This woodland areas of the wider land ownership on the eastern boundary are dominated by ash (Fraxinus excelsior), sessile oak (Quercus petraea), and hornbeam (Carpinus betulus), with abundant and frequent elm (Ulmus spp.), sycamore (Acer pseudoplatanus), and hawthorn (Crataegus monogyna). The understorey and shrub layer are diverse, including holly (Ilex aquifolium), ivy (Hedera helix), dog-rose (Rosa canina), blackthorn (Prunus spinosa), wild apple (Malus sylvestris), beech (Fagus sylvatica), wild cherry (Prunus avium), and honeysuckle (Lonicera periclymenum). The canopy structure is mixed and mature, providing a variety of microhabitats and supporting high biodiversity. Ground flora is variable, with ivy and bramble often prominent, and the woodland offers valuable resources for birds, invertebrates, and mammals. This habitat type is typical of semi-natural lowland broadleaved woodland found in the region, and its species composition reflects both native and naturalised elements.
Mixed scrub	0.04		This habitat comprises mixed native scrub dominated by bramble (Rubus fruticosus agg.) and nettle (Urtica dioica), with frequent hawthorn (Crataegus monogyna), spindle (Euonymus europaeus), and elder (Sambucus nigra). The scrub is structurally diverse and interspersed with scattered individual trees, primarily hornbeam (Carpinus betulus) and ash (Fraxinus excelsior), which add vertical complexity and habitat variety. The ground flora is patchy but includes species such as wood avens (Geum urbanum), bluebell (Hyacinthoides non-scripta), and areas of bare ground. This mosaic of scrub and scattered trees provides valuable habitat for invertebrates, birds, and small mammals and represents a successional stage typical of secondary woodland or scrubland developing on former grassland or woodland edge. There is a small patch of mixed scrub within the modified grassland habitat that surrounds a sheep water trough. This area is dominated by young elm and bramble. The habitat is consistent with UKHab definitions for mixed scrub with scattered trees, where the canopy is dominated by native shrubs under 5 m tall, with occasional taller trees recorded individually. The presence of hornbeam and ash as scattered trees indicates a semi-mature structure contributing to ecological diversity.

Habitat Type (UKHab Code)	Area (ha)	Habitat Photo	Description
Scattered/ Rural trees (Part of the above mixed scrub habitat)	N/A		There are 12 scattered trees that form part of the mixed scrub habitat in the western edge of the site. Species include ash, hornbeam, hazel, hawthorn blackthorn and oak.

Protected and Priority Species

[redacted]

Bats

No bat roosts or significant bat activity were recorded within the modified grassland, which comprises the proposed development footprint. The grassland is intensively grazed and maintained as a short sward, offering limited foraging opportunities due to low insect abundance and lack of structural diversity. However, the surrounding landscape contains high-quality bat habitats, including mature woodland, mixed scrub, and scattered trees. These areas support a rich bat assemblage, as evidenced by multiple records within 1 km for species such as common pipistrelle (Pipistrellus pipistrellus), soprano pipistrelle (P. pygmaeus), brown long-eared bat (Plecotus auritus), noctule (Nyctalus noctula), serotine (Eptesicus serotinus), and Myotis species, with both roosts and foraging activity confirmed in the wider area as recently as 2024

A mature oak (Quercus sp.) at the entrance to the site was identified as having several features suitable for roosting bats, such as cavities, splits, and loose bark. Mature oaks are especially important for bats, as they frequently provide a range of potential roosting opportunities used for breeding, shelter, and hibernation by multiple species. The presence of this tree increases the likelihood of bat activity in the immediate area and adds to the site's overall ecological value for bats.

Birds

The modified grassland provides moderate suitability for a limited number of ground-nesting and foraging birds. Species such as skylark (Alauda arvensis; BoCC Red, NERC S41), meadow pipit (Anthus pratensis), and lapwing (Vanellus vanellus; BoCC Red, NERC S41) may use the area for breeding or feeding however these were not present or observed during the site visit and the grassland sward is likely too short and too disturbed to be a viable breeding habitat for these species. The short sward and low plant diversity restrict opportunities for other species too. In contrast, the surrounding landscape supports a diverse bird community, including notable and protected species associated with woodland, scrub, and hedgerows—such as yellowhammer (Emberiza citrinella), linnet (Linaria cannabina), house sparrow (Passer domesticus), tawny owl (Strix aluco), and green woodpecker (Picus viridis). Records indicate regular presence and probable breeding for many of these species in adjacent habitats

Dormice

Recent records confirm the presence of hazel dormouse (Muscardinus avellanarius) at Mayes Farm Park in 2023, located within the local landscape near the site. This recent evidence highlights the species' continued presence in the wider area.

The site itself is well connected within the landscape, with dense bramble-dominated scrub, mixed scrub with scattered hornbeam and ash trees, and adjacent broadleaved woodland providing ideal habitat features for dormice. These habitats offer suitable food sources, nesting opportunities, and arboreal connectivity essential for dormouse foraging and movement.

Although no direct evidence of dormice was found on site during the survey, and no records exist within the immediate 1 km boundary, the presence of high-quality surrounding woodland and scrub increases the likelihood of dormouse activity in the area. The structural diversity and connectivity of these habitats support potential dormouse commuting and foraging routes through or near the site.

Given the recent confirmed local records and suitable habitat, dormouse presence cannot be ruled out. Accordingly, further targeted surveys may be warranted to inform any future development proposals and ensure compliance with best practice guidelines.

Great crested newt (and other amphibians)

Two ponds are present within 250 metres of the site: one located approximately 60 metres to the east, separated from the site by Mayes Lane, and another approximately 180 metres to the south within the grounds of Warnham Lodge Farm. There are no ponds or wet features on the site itself.

The intensively managed grassland, dominated by a low-diversity sward and subject to regular grazing and mowing, does not provide suitable terrestrial habitat for great crested newt (Triturus cristatus). The sward structure and lack of cover or refugia significantly limit the suitability of the site for GCN foraging, sheltering, or dispersal. No records of GCN have been returned for the site or immediate surroundings within the past ten years.

While GCN, common toad (Bufo bufo), smooth newt (Lissotriton vulgaris), and palmate newt (Lissotriton helveticus) are present locally, with recent records at Mayes Park and other nearby sites, the development area itself is unlikely to provide significant terrestrial habitat. The risk of direct impact on amphibians is therefore considered low, though occasional dispersal cannot be entirely ruled out

Invertebrates

The modified grassland supports a limited assemblage of invertebrates, with the short, species-poor sward providing suboptimal conditions. Some widespread grassland butterflies, such as small heath (Coenonympha pamphilus; NERC S41), may be present, particularly where nectar plants are available. However, the majority of notable invertebrate species recorded locally, including grizzled skipper (Pyrgus malvae), dingy skipper (Erynnis tages), brown hairstreak (Thecla betulae), purple emperor (Apatura iris), and a range of rare moths, beetles, and dragonflies, are associated with more structurally diverse habitats in the surrounding landscape, such as woodland edges, scrub, and unimproved grassland

Reptiles

No reptiles were recorded within the grassland during surveys. The short sward and lack of cover or refugia make the core grassland suboptimal for reptiles. However, field margins and less-managed patches, where bramble or nettle occur, may provide limited habitat for slow-worm (Anguis fragilis; NERC S41) and grass snake (Natrix helvetica; NERC S41), both of which are regularly recorded in the local area, including recent records from 2024 and 2023. The wider

landscape, particularly along unmanaged edges, scrub, and woodland margins, offers more suitable reptile habitat

Invasive Non-native species

No invasive non-native plant species were observed during the site visit within the modified grassland or elsewhere on the site. This includes the absence of commonly encountered invasive plants such as Japanese knotweed (Fallopia japonica), Himalayan balsam (Impatiens glandulifera), or giant hogweed (Heracleum mantegazzianum).

A review of biological records from the Sussex Biodiversity Record Centre confirms that while 15 invasive non-native species have been recorded within a 1 km radius of the site (109 records in total), these are primarily associated with waterbodies, woodland, and the wider landscape rather than the grassland development area itself. Notable examples from local records include Mandarin duck (Aix galericulata), which is listed on Schedule 9 of the Wildlife and Countryside Act as an invasive non-native species, but is not relevant to the terrestrial grassland habitat.

No evidence of invasive non-native species requiring statutory control was found on site at the time of survey. Continued vigilance is recommended, as the presence of invasive species in the wider landscape highlights a potential risk of future colonisation

Ecological Constraints and Opportunities

Constraints

Protection of Adjacent Woodland and Scrub: The woodland area to the east of the site, which is within the same landholding, is of high ecological value and supports a diverse assemblage of protected and notable species in the wider landscape. Direct impacts to this woodland and associated scrub must be avoided. The woodland edge and its transition zones are particularly sensitive to disturbance, and any encroachment or fragmentation could adversely affect local biodiversity.

Modified Grassland Limitation: The development footprint is restricted to intensively managed, species-poor modified grassland. While this habitat is of low ecological value, it may support a limited number of ground-nesting birds such as skylark and lapwing. The short sward and lack of structural diversity limit its suitability for most protected species, but field margins and less-managed patches may still provide some value for reptiles and invertebrates.

Hydrological Sensitivity: The western areas of the site fall away towards Hoopers Copse, an ancient woodland that surrounds the gills forming a tributary to the North River. This topography creates potential for wetter ground conditions in the west, particularly near the woodland edge. Any changes to site hydrology or drainage could significantly impact the development of wetland or flush habitats both onsite and within Hoopers Copse. It is essential to avoid altering natural water flow, as this could affect not only the ecological integrity of the site but also the sensitive habitats within the ancient woodland and the downstream watercourse. Careful management and protection of existing hydrological patterns are therefore critical to safeguarding these interconnected habitats.

Ecological Connectivity: The site forms part of a wider ecological network, with adjacent woodland, hedgerows, and scrub providing important corridors for bats, birds, dormouse, and other wildlife. Fragmentation of these features through inappropriate design or management would reduce landscape-scale biodiversity value.

Invasive Non-Native Species: Although no invasive non-native species were observed on site, there are 15 species with 109 records in the wider landscape. Ongoing vigilance is required to prevent colonisation and spread, particularly during groundworks and material imports.

Presence of Protected or Notable Species: There is a significant potential for protected species to be present on or near the site, given the range of habitats within the wider landscape, including woodland, scrub, hedgerows, and wetter areas to the west, that are suitable for bats, birds, reptiles, amphibians, [redacted] dormouse, and notable invertebrates. While the modified grassland at the development footprint is of lower suitability, field margins and adjacent habitats may still be used by these species for foraging, commuting, or breeding.

During construction, there is a risk of direct harm or disturbance to protected species, as well as indirect impacts such as noise, lighting, and habitat fragmentation. These risks must be managed through sensitive site design, careful timing of works (e.g., avoiding the bird nesting season), and the implementation of best practice measures to protect wildlife.

Post-development, the design of the site should actively encourage continued or increased use by protected species. This can be achieved by retaining and enhancing habitat connectivity, providing features such as native planting, woodland edge buffers, scrub patches, wetland creation, and wildlife-friendly landscaping, and by minimizing artificial lighting and disturbance in sensitive areas. The overall approach should ensure that protected species are accommodated both during and after construction, in line with legal requirements and best practice guidance.

Opportunities

Woodland and Woodland Edge Protection: The scheme avoids direct impact on the woodland to the east, providing an opportunity to enhance and buffer this area. Management should focus on improving the woodland edge by allowing native scrub and tall herb communities to develop as transitional habitat. This will increase habitat heterogeneity, provide shelter and foraging for birds and mammals, and support a wide range of invertebrates.

Grassland Enhancement: Within the development footprint and retained open areas, there is scope to diversify the sward by reducing grazing pressure in selected zones and introducing native wildflowers and less competitive grasses. This will help transition modified grassland to species-rich neutral grassland, supporting a greater diversity of plants, pollinators, and ground-nesting birds.

Creation of Mixed Scrub: Landscaping plans should incorporate patches of native thorny scrub, such as hawthorn and blackthorn, particularly along boundaries and as part of the woodland edge buffer. These features provide nesting, foraging, and shelter opportunities for birds, small mammals, and invertebrates, and contribute to structural diversity.

Wetland and Pond Creation: The western part of the site, where land naturally slopes and may become wetter, offers an opportunity to create small ponds, wet flushes, or seasonal pools. Even small-scale wetland features can dramatically increase habitat diversity, supporting amphibians, dragonflies, and wetland plants, and providing drinking and bathing resources for birds and mammals.

Bare Ground and Tall Herb Margins: Retaining or creating small patches of bare or sparsely vegetated ground will benefit basking reptiles, ground-nesting invertebrates, and wildflower establishment. Allowing tall herbs and rough grassland to develop along the edges of scrub and woodland will further enhance habitat for insects, birds, and small mammals.

Ecological Connectivity and Corridors: By linking new and existing habitats, such as grassland, scrub, woodland edge, and wetland, the scheme can strengthen ecological corridors across the site, improving resilience for species movement and adaptation in response to environmental change.

Mitigation Hierarchy

Avoidance:

- The development is sited entirely within modified grassland, avoiding direct impacts on woodland, scrub, and other high-value habitats.
- The woodland to the east will be fully protected, with no encroachment or fragmentation permitted.
- Hydrological features to the west will be retained and buffered to allow for the natural development of wetter habitats.

Minimisation:

- Construction activities will be carefully managed to prevent indirect impacts such as lighting, noise, and runoff affecting adjacent woodland, scrub, and wetland features.
- Retained field margins and boundary features will be protected during works to maintain ecological connectivity.
- Vigilance for invasive species will be maintained throughout the construction period.

Compensation:

- Where loss of modified grassland is unavoidable, compensation will be delivered through the creation and enhancement of more species-rich grassland and the establishment of new scrub, wetland, and bare ground features.
- Enhancement of woodland edge and buffer zones will compensate for any loss of transition habitat.

Enhancement:

- The scheme will deliver measurable biodiversity gains by creating a mosaic of habitats, increasing species and structural diversity, and improving ecological connectivity.
- Woodland edge and scrub enhancement, wetland creation, and grassland diversification will all contribute to the long-term ecological value of the site and wider landscape.
- Management prescriptions will ensure that these habitats are maintained and improved over time, supporting protected and priority species recorded in the area.

Further Survey Recommendations

In this case, the project is designed to avoid direct impacts on high-value habitats (woodland, scrub, wetland) and focuses development on intensively managed, species-poor grassland. The avoidance and enhancement measures proposed are based on current best practice and available data, aiming to minimise risk to protected species and deliver measurable biodiversity gains.

While further surveys could provide additional certainty, the balance of evidence suggests that, given the avoidance-led approach and the low suitability of the development footprint for most protected species, the benefits of further surveys may be limited. Instead, resources may be better invested in sensitive design, robust mitigation, and post-construction monitoring to ensure that protected species are safeguarded and that habitat enhancements deliver long-term ecological value.

Further surveys to consider, managing the risks on site. These may be useful in supporting the design of the proposed development plans:

Ground Level Tree Assessment (GLTA) for Bats:

Can be conducted at any time of year. The surveyor inspects the mature oak and other trees for potential bat roost features (PRFs). If moderate or high suitability is identified, dusk emergence surveys are required during the main bat survey season (May–September).

Dusk Emergence Bat Survey:

If triggered by the GLTA, these surveys must be undertaken between May and September, with at least one survey between May and August, and at least three weeks between surveys. The number of surveys depends on the suitability rating of the tree.

Should areas that have been discussed as being avoided, such as the woodland and mixed scrub habitat, not be avoided then further assessment and updates to this PEA will be required.

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Appendix 1 – Habitat Map – UKHab