Nexus Planning

Northwood College London

Preliminary Ecological Appraisal Report

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Author	Joe Pepper	**Technical reviewer**	Sarah Harmer
Signature		Signature	
Date:	03/01/2023	Date:	03/01/2023
Project manager	Joe Pepper	**Quality reviewer**	Sarah Harmer
Signature		Signature	
Date:	03/01/2023	Date:	03/01/2023

Switchboard: +44 (0)330 223 1074 Company contact: Enquiries@biocensus.co.uk

EXECUTIVE SUMMARY

1. This report presents the results of a preliminary ecological appraisal carried out in 18 October 2022, comprising the following elements:
    - a background data search;
    - a habitat survey using the UKHab methodology;
    - an assessment for protected species;
    - an assessment of a ditch to determine suitability for great crested newt (*Triturus cristatus*)
    - ground level tree assessments (GLTAs) for bats in trees;
    - preliminary roost assessment of buildings for bats.
2. This report has been produced in connection with plans to construct a series of lights that would enable sports pitches to be used in the hours of darkness. The appraisal was based on the red line boundary plan of the development site (hereafter referred to as the 'site') shown in *Figure 1*.
3. The site currently comprises two multi-use games areas (MUGAs), and a series of footpaths that connect them to each other, as well as to Maxwell Road to the southeast of the site.
4. There are no internationally designated sites within 10km of the site boundary, though there are four statutory designated sites and nineteen non-statutory sites within 2km. Several of these are notable semi-natural ancient woodlands.
5. The UKHab methodology was used to describe the habitats present within the site, which were sealed artificial surfaces, bordered by occasional grassland and surrounded by trees and buildings. These surfaces have little botanical value, though the trees and buildings do have potential for roosting bats.
6. Further surveys for bats are recommended to assess how bats use the site, and develop an understanding of how the increase in light may affect their habits and foraging potential. Potential mitigation strategies may include light barriers to restrict the light columns to the MUGAs, thereby reducing the level of ambient light resulting from the scheme.

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1.0 INTRODUCTION

1.1 Purpose of this report

1.1.1 This report presents the results of a preliminary ecological appraisal (PEA), comprising a background data search and a habitat survey, with assessment for protected or otherwise notable species, at Northwood College for Girls (Grid Ref TQ089912). The survey area included the land within the red-line boundary (the site), plus immediately adjacent land; the site and survey area are shown in *Figure 1*. A ground-level assessment of all trees and buildings potentially suitable for bats within the site and along the boundaries was made.

1.1.2 The report identifies ecological constraints relevant to the project, specifies any further survey or mitigation requirements (e.g. for any Ecological Impact Assessment), gives recommendations for avoidance and protection through design changes, and suggests opportunities for ecological enhancement, in particular to deliver biodiversity net gain. The appraisal was carried out on behalf of Nexus Planning Limited.

1.2 Landscape context

1.2.1 The 0.43 ha site is located in central Northwood, north of Ruislip. The site is dominated by hardstanding, in the form of multi-use games areas (MUGAs) and associated footpaths.

1.2.2 The site is immediately bordered by school buildings, with a large playing field to the north-east of the site. The surrounding landscape is suburban with housing and gardens. The Northwood Golf Course club lies to the south-west, between the site and Ruislip Woods.

1.3 Development proposals

1.3.1 The development proposals are for the introduction of floodlights throughout the site, to illuminate the two MUGAs sports pitches for use in the dark.

2.0 METHODS

2.1 Overview

2.1.1 The PEA was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017); it therefore included:

- a desk study (here called a background data search (BDS)), which included a review of aerial photographs; obtaining information from the DEFRA and JNCC websites, and the local authority website; and requesting data from local records centres.
- a field survey that informed habitat mapping, an assessment of the possible presence of protected or priority species and the likely importance of habitat features.

2.1.2 The PEA report includes an ecological description of the site and information about species that may occur there. Notes and mapping of any incidental sightings of invasive non-native plant species and protected or priority fauna species are also provided.

2.1.3 The survey was carried out on 18 October 2022 by David Cove and Sophie Elliot, both of whom are a suitably qualified and experienced ecological consultants, members of CIEEM, and are experienced in carrying out preliminary ecological appraisals.

2.2 Background data search

2.2.1 The background data search was carried out in November 2022.

Table 1: Data Sources.

Information Obtained	Available From
Protected and noteworthy species-records	Greenspace Information for Greater London CIC
	Herts Environmental Records Centre
Designated site locations and citations	Natural England website
Designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Designated site locations and citations	Greenspace Information for Greater London CIC
	Herts Environmental Records Centre
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Areas / Habitats of Strategic Significance	https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C41573_APP_2013_1288%5CChapter+10+Ecology.pdf&module=pl

Areas / Habitats of Strategic Significance	National Habitat Networks https://www.data.gov.uk/dataset/0ef2ed26-2f04-4e0f-9493-ffbdbfaeb159/habitat-networks-england
Areas / Habitats of Strategic Significance	National Priority Focus Areas https://www.data.gov.uk/dataset/c20a40c5-c975-43e1-9abd-d1257aa58432/natural-england-national-priority-focus-areas
Areas / Habitats of Strategic Significance	Nature Improvement Areas https://www.data.gov.uk/dataset/a19c95e3-9657-457d-825e-3d2f3993b653/nature-improvement-areas

Internationally designated statutory sites search distance: 10km.
All statutory designated sites search distance: 2km.
Non-statutory designated sites search distance: 2km.
Ancient woodland search distance: 2km.

2.2.2 A search was made for the following international and national statutory designated sites of ecological importance within 10km of the site boundary: Ramsar sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA)[1], and for Sites of Special Scientific Interest (SSSI), including consideration of SSSI risk zones, within 2km.

2.2.3 A search was also made for non-statutory designated (often important in a local context) within 2 km of the site boundary. The distances were selected in accordance with the scale of the impacts, since their zone of influence is limited.

2.2.4 The BDS also included a search for records within 2 km of the site boundary of noteworthy species, which might pose a constraint to the proposed development. Species included in the search were:

- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended));
- nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 (as amended) and The Protection of Badgers Act 1992;
- species listed as critically endangered, endangered or vulnerable based on the IUCN Red List Categories and Criteria 2001;
- all species listed on the RSPB's Birds of Conservation Concern 5 (Stanbury *et al.,* 2021) as red' or 'amber';
- nationally rare or nationally scarce species;

[1] SACs and SPAs were formerly called 'European Sites' and part of the Natura 2000 network; post-'Brexit', they are now considered part of the UK's 'national site network'. Ramsar sites are sites of international importance. See Appendix A for details. Note that SPAs, SACs and Ramsar sites are also underpinned by SSSI designations whose citations/boundaries may be slightly different.

- notable[2] invertebrates; and
- species of principal importance listed under The Natural Environment and Rural Communities (NERC) Act 2006 or priority species under the London Borough of Hillingdon local biodiversity action plan.

2.3 Plants and habitats

Habitat survey

2.3.1 The field survey was based on the UK habitats (UK Hab) survey methodology (Version 1.1; Butcher *et al*. 2020) The UK Hab classification system is the habitat classification that underpins the DEFRA Biodiversity Metric and is therefore the favoured habitat classification to use when surveys need to inform a Biodiversity Net Gain Calculation. This field survey involved the following elements:

- habitat mapping using a set of standard colour codes to indicate habitat types on a habitat map (Figure 2); and
- a description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the habitat map, called 'target notes'.

2.3.2 Vascular plant species were recorded during the survey, although no attempt was made to produce an exhaustive species list (additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year).

2.3.3 Plant nomenclature in this report follows Stace (2019) for native and naturalised species of vascular plant

Invasive non-native species (INNS)

2.3.4 Phase 1 habitat survey does not involve exhaustive surveying for individual plant species, and various invasive species may be little in evidence at various times of year (depending on the species). A survey seeking to identify habitat types cannot therefore be relied upon to provide firm information about the presence or extent of any INNS. However, had any INNS been seen, they would have been noted.

2.4 Protected and notable animals

General

2.4.1 The site was assessed for its suitability to support protected or otherwise notable animals that are likely to occur in the area. Taking into account the results of the BDS, the geographic location, connectivity to natural habitats in the wider landscape, the nature and extent of habitats at the site, and the proposed development, specific assessment was also carried out for the species/species groups outlined below.

[2] Appendix C includes a description of 'notable' as used in this context.

Invertebrates

2.4.2 The site was assessed for its suitability to support notable species and/or assemblage of invertebrates, but no specific surveys were undertaken. The habitat requirements of particular invertebrates are often species-specific, so consideration was given to the presence of features and habitats that might be suitable for the notable species identified in the BDS.

Great Crested Newts

2.4.3 Although standing water is essential for their breeding, great crested newts (*Triturus cristatus*) are terrestrial for most of the year and have been recorded up to 500 m from their breeding ponds. Ordnance Survey maps and aerial imagery were reviewed to identify any ponds within 500 m of the site boundary, and the site was assessed for its suitability for both terrestrial and breeding great crested newts (Oldham *et al*., 2000). Optimal breeding ponds tend to be well-vegetated, relatively clean and unpolluted, free of fish and wildfowl, and retentive of water throughout most summers (but not necessarily all). Highly suitable terrestrial habitats include woodland, scrub and tussocky grassland, although great crested newts can be found in a broad range of sub-optimal habitats as well. Habitat suitability for other amphibians was similarly assessed.

Reptiles

2.4.4 The site was assessed for its suitability for the four most widespread reptile species, with particular attention given to those features that provide suitable basking areas (*e.g.* south-facing slopes), hibernation sites (*e.g.* banks, walls, piles of rotting vegetation) and opportunities for foraging (*e.g.* rough grassland and scrub).

2.4.5 Specific habitat requirements differ between species. Common lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*) favour rough grassland. Grass snake (*Natrix helvetica*) has broadly similar requirements, with a greater reliance on ponds and wetlands. Adder (*Vipera berus*) use a range of open habitat with some cover but are most often found in dry heath.

Birds

2.4.6 Birds nest, forage, and roost in a wide variety of habitats including scrub, woodland, hedgerows and trees, wetland, arable and pastoral farmland and rough grassland. Some species also use open bare ground and man-made structures.

2.4.7 The site was assessed for its suitability to support diverse assemblages and/or uncommon species of breeding and non-breeding birds, with an emphasis on those species that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), the red and amber lists of the RSPB's Birds of Conservation Concern 5 (Stanbury *et al.,* 2021) and other notable species recorded in the BDS, including any species that are qualifying features of nearby designated sites. Consideration was given to the site's connectivity to landscape features that are likely to be of particular importance to birds, such as extensive areas of semi-natural woodland or wetlands. The presence of nests or signs of nest building were recorded, and buildings were surveyed for their suitability for barn owls and other species, with signs including nesting sites, feathers, droppings, and pellets.

Bats

2.4.8 Habitats were assessed for their suitability for foraging and commuting bats, in line with guidance provided in Collins (2016). Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, rivers and species-rich or rough grassland.

2.4.9 Trees and man-made structures were noted if they had potential suitability for roosting bats (Collins, 2016). This involved identifying features that roosting bats may favour (*e.g.* holes, cracks and cavities that might be used as bat access-points or roost sites).

Preliminary roost assessment (PRA) of built structures

2.4.10 Buildings were assessed externally and internally to ascertain suitability for roosting bats, taking account of the following factors that influence the likelihood of bats roosting:

- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
- Construction detail: the type and construction of architectural features such as attics, soffit boxes, lead flashing and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
- Building condition: whether the building has no roof or has a sound roof without any potential bat-access points.
- Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat-access points: whether there is flight and crawl access.
- Potential roosting locations: descriptions of all bat-accessible voids, cracks, and crevices.

2.4.11 The building's potential to support roosting bats was then categorised as defined in Table 2.

Table 2: Categorisation of the suitability of buildings or trees for roosting bats (Collins 2016).

Category (Potential to support roosting bats)	Description
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.
Low suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.

Category (Potential to support roosting bats)	Description
Moderate suitability	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely for a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.
Confirmed roost	Bats or evidence of bats recorded during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

2.4.12 The buildings were then inspected for evidence of bats. Visual, systematic examinations were made for bats and evidence of bats, both internally and externally, of the following:

- roof slopes and the ridge;
- wall, window and door surfaces;
- window and door frames;
- wall bases;
- wall ledges and wall tops;
- cracks, crevices and sheltered voids; and
- external features such as soffits and lead flashing.

2.4.13 Evidence of roosting bats includes droppings, urine stains, staining from fur-oils, wear marks, feeding remains, dead bats, odour, squeaking and chattering, and in some cases the absence of cobwebs. Bat droppings can prove beyond doubt that bats use a building and can help to identify roosting locations because piles often accumulate beneath roosting sites or entrance points.

Ground-Level Tree Surveys

2.4.14 All trees within the site were surveyed from ground level. Features that might be used by roosting bats were described and categorised according to accepted guidelines (Collins, 2016). Each tree was given a category during the ground-level surveys (see *Table 2*) based on its potential for roosting bats.

2.4.15 Trees may also be categorised as having *unknown potential* if the surveyor's view of the tree is obscured. This can be caused by dense Ivy (*Hedera helix*) covering the trunk and major limbs of the tree, concealing potential roosting features from surveyor view.

Badgers

2.4.16 An initial assessment was carried out to identify areas that might be used by badgers (*Meles meles*) for commuting, foraging or setts within 30 m of all areas potentially affected by works (where access was possible). The area was systematically searched

for signs of badgers including setts, foraging signs, paths (runs) and latrines where possible, and the category of sett and levels of activity visible at each sett was recorded.

Other species of Principal Importance

2.4.17 The UK countries of England, Wales, Scotland, and Northern Ireland are obliged by their individual laws to maintain lists of species and habitats of principal importance for biodiversity conservation. In England, this obligation derives from the Natural Environment and Rural Communities (NERC) Act 2006. An assessment of the suitability and likelihood of the site supporting such species was made (for example, hedgehog (*Erinaceus europaeus*)).

2.5 Constraints and limitations

2.5.1 Less conspicuous plant species (including INNS) may have been missed as a result of the survey being undertaken outside of the ideal survey season. However, the majority of plants present were confidently identified, and the survey was sufficient to make a broad assessment of the habitats present on the site.

2.5.2 This preliminary appraisal as to whether protected or otherwise notable species might occur on the site is based on the suitability of habitat, the known distribution of relevant species in the local area (from online sources and desk study), and any signs of the relevant species. It does not constitute a full and definitive survey of any protected species group.

2.5.3 Field signs for protected and valuable species are often difficult to find or absent from a site. The survey conducted was not intended to be a comprehensive presence/absence survey for all species, but rather to provide an indication of the likely presence of such species based on the field signs found, and the nature of the habitats present.

2.5.4 Loft cavities of the buildings were not accessed, meaning that it was not possible to assess the interior suitability for roosting bats.

2.5.5 All recommendations made in this report are based on the proposed site layout plan provided. If the plans change significantly, then an ecologist must be consulted and further surveys may be required.

3.0 RESULTS

3.1.1 Background Data Search

Formal Local Biodiversity Action Plans and Strategies

3.1.2 The London Borough of Hillingdon local biodiversity action plan lists the following habitats as local formal targets; on airfield habitats, habitats within the vicinity of the noise barrier, UK BAP habitats.

Informal Strategies to Identify Ecologically Desirable Areas

3.1.3 The site is fully within the outer London national priority focus area (Natural England, 2022).

3.1.4 The site is not within any nature improvement area.

3.1.5 The site is not within any habitat network.

Designated Sites

3.1.6 There are no international statutory sites within 10km.

Table 3: Statutory Sites within 2km.

Site Name	Designation	Distance (m) and orientation
Ruislip Woods	SSSI	830 S
Qualifying Features / Reason for Designation Ruislip Woods forms a significant semi-natural ancient woodland, alongside acidic grass-heath mosaic, and wetland areas, providing habitats for nationally and locally rare species of plants and insects.		
Ruislip Woods	NNR	830 S
Qualifying Features / Reason for Designation Ruislip Woods forms a significant semi-natural ancient woodland, alongside acidic grass-heath mosaic, and wetland areas, providing habitats for nationally and locally rare species of plants and insects.		
Batchworth Heath	LNR	1240 NW
Qualifying Features / Reason for Designation The heathland and ancient pond on site provide a habitat for a range of rich wildlife.		
Oxhey Woods	LNR	1720 NE
A woodland with varying habitats, containing important species such as bluebells, anemones, and violets.		

Table 4: Non-statutory sites within 2km.

Site Name	Designation	Distance (m) and orientation
Gravel Pit, Northwood	SINC	205 W
Qualifying Features / Reason for Designation Heavily wooded old gravel diggings, with a diverse understorey and invertebrate population.		
Northwood Railway Cutting	SINC	280 NE
Qualifying Features / Reason for Designation The wide banks on both sides of the Metropolitan Line extend northwards into Hertfordshire, comprising regenerating woodland, scrub, and rough grassland.		
Haste Hill Golf Course, Northwood Golf Course and Northwood Park	SINC	550 S
Qualifying Features / Reason for Designation Two golf courses near Ruislip woods, with small areas of woodland, and acid grassland with heather. There are also several streams as well as standing deadwood, with the site providing valuable habitats for invertebrates, birds, and reptiles.		
Fields and Hedgerows South of Mount Vernon Hospital	SINC	860 NW
Qualifying Features / Reason for Designation Species rich native hedgerows and grassland with rich opportunities for wildlife.		
Batchworth Heath	SINC	1125 NW
Qualifying Features / Reason for Designation The heathland and ancient pond on site provide a habitat for a range of rich wildlife.		
Shepherd's Hill Woods and Fields	SINC	1135 W
Qualifying Features / Reason for Designation A large mosaic of fields and woods with inter-connection hedgerows. The woodlands have a diverse range of trees, as well as several ancient woodland indicator species such as bluebell, primrose, and remote sedge.		
Hog's Back Open Space (formerly Borough Hill)	SINC	1220 E
Qualifying Features / Reason for Designation A site containing dense woodland, grassland, and scrub on a steep hillside. Acid soils have given rise to valuable stands of notable plant species.		
Bishops Wood	SINC	1355 NW
Qualifying Features / Reason for Designation An ancient semi-natural woodland, with some areas of plantation on ancient woodland site.		
Potter Street Hill North Pasture	SINC	1375 E

Qualifying Features / Reason for Designation A small field of flower-rich unimproved grassland with perhaps the strongest population of devil's-bit scabious in London.		
White Hill Wood	LWS	1390 NW
Qualifying Features / Reason for Designation A semi-natural broadleaf woodland containing ancient woodland indicators. There are also areas of damp acidic grassland, heathland, and mixed scrub.		
Moor Park Golf Course	LWS	1425 NW
Qualifying Features / Reason for Designation Large area of old parkland with unimproved species-rich grassland, acid grassland, heather and gorse scrub, and broadleaf woodland. Scattered veteran oak trees are also present, as well as a chalk pit and pond. The site is particularly valuable for invertebrates and bats.		
Batchworth Heath Common	LWS	1445 NW
Qualifying Features / Reason for Designation The heathland and ancient pond on site provide a habitat for a range of rich wildlife.		
Sandy Lodge Golf Course	LWS	1475 N
Qualifying Features / Reason for Designation This site has a mosaic of habitats including semi-improved acid grassland, unimproved acid grassland/heath, a pond, and patches of woodland and scrub. The woodland contains mature trees and notable ground flora.		
Potter Street Hill	SINC	1505 E
Qualifying Features / Reason for Designation A small field of flower-rich unimproved grassland with perhaps the strongest population of devil's-bit scabious in London.		
St Vincent's Hospital Meadows	SINC	1570 SE
Qualifying Features / Reason for Designation This site was designated due to its strong butterfly and grasshopper population. Two fields make up the site, with some scattered scrub and trees.		
Bishop's Wood	LWS	1600 NW
Qualifying Features / Reason for Designation An ancient semi-natural woodland, with some areas of plantation on ancient woodland site.		
Oxhey Woods	LWS	1725 E
Qualifying Features / Reason for Designation A woodland with varying habitats, containing important species such as bluebells, anemones, and violets.		
Ruislip Woods and Poor's Field	SINC	1760 SW

Qualifying Features / Reason for Designation The Ruislip Woods form a significant semi-natural ancient woodland, alongside acidic grass-heath mosaic, and wetland areas, providing habitats for nationally and locally rare species of plants and insects.		
Old Pumping Station Field	SINC	1830 S
Qualifying Features / Reason for Designation A large area of rich grassland, with native hedgerows. The marshy site of the old storage tank is a valuable habitat for invertebrates, including a number of notable lepidopteran species and robber flies. This site is also valuable for reptiles.		

Ancient Woodlands

3.1.7 There are eleven areas of ancient semi-natural woodland within 2km of the site boundary

3.1.8 There are two areas of replanted ancient woodland within 2km of the site boundary

3.1.9 The closest area of ancient woodland is designated as ancient semi-natural woodland and located approximated 835m south-west of the site boundary.

SSSI Impact Risk Zones

3.1.10 The site intersects one SSSI Impact Risk Zone buffer. The constraints criteria associated with this buffer are;

- Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.
- Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.
- Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha.
- Residential development of 100 units or more.
- Any residential development of 50 or more houses outside existing settlements/urban areas.
- Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t).
- General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
- Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.

- Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.
- Any discharge of water or liquid waste of more than 2m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.
- Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply.

Protected and Notable Species

3.1.11 Fifty-five protected species are recorded from places within 2km of the site boundary.

3.1.12 Of these protected species, 1 is amphibian, 25 are birds, 2 are invertebrates, 13 are mammals (of these, 4 are bats), 7 are plants and 4 are reptiles. Species that are protected by law under Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended), Schedules 1, 2, 5 and 8 of The Wildlife and Countryside Act 1981 (as amended) or The Protection of Badgers Act 1992 that have been recorded in the search area are highlighted in the full species list is given in *Appendix B.* Those of relevance to the site and the current proposals are discussed in Sections 4.2 and 4.3.

3.1.13 Additionally, at least 271 noteworthy species are recorded from places within 2 km of the site boundary. Noteworthy species include species of principal importance that are listed under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.

3.2 Plants and habitats

Habitat Survey

3.2.1 The UK Habitat map is provided as *Figure 2.* Site Habitat Map (UK Hab) and shows the location of the target notes referred to in the text below. A full description for each of the target notes is given in *Appendix D*. The site comprises the following: hardstanding, with bordering amenity grassland, trees, and buildings outside of the red-line boundary.

Artificial sealed surface

3.2.2 The majority of the site comprises sealed surface sports pitches and the footpaths connecting them. MUGA 1 is located in the south-east of the site. This MUGA is bordered by areas of ornamental planting, with stands of the ornamental shrub Cherry Laurel (*Prunus laurocerasus*). The pitch is surrounded by buildings, some of which are older.

3.2.3 MUGA 2 is in the north-west. This MUGA is bordered by a tree line containing mature oaks and ash (*Fraxinus excelsior*) to the north-west, and buildings to the south.

3.2.4 The footpaths are bordered by short amenity grassland and ornamental planting.

Ditch

3.2.5 A small brook was present to the south of MUGA 2. This was dry at the time of survey but serves to collect surface run-off.

Invasive Non-native Species

3.2.6 No Schedule 9 non-native invasive species were recorded during the site visit.

3.3 Protected and notable animals

3.3.1 *Figures 2* shows the location of the target notes referred to in the text below, which show the location of particular features with suitability for protected and notable animals. A full description for each of the target notes is given in *Appendix D*.

Invertebrates

3.3.2 The BDS returned a range of protected or otherwise notable invertebrates within 1 km of the site, though this site is considered likely to support only a common assemblage of invertebrate species, typical of the limited habitats present.

Amphibians

3.3.3 The BDS revealed recent (2020) records of great crested newts within 2km of the site boundary. The BDS also returned results of common toad (*Bufo bufo*) and common frog (*Rana temporaria*).

3.3.4 The site has very limited potential for amphibians. The drainage brook on site is not suitable for great crested newt, due to the fact that it regularly dries entirely. Additionally, the areas of hardstanding offer no foraging opportunities or refuges. Great crested newts are therefore considered unlikely to be present on site.

Reptiles

3.3.5 There have been records of the four common reptile species returned from the 2 km BDS area. However, reptiles typically inhabit areas of rough grassland. As the site consists of hard standing, reptiles are unlikely to be present and no further survey or mitigation is proposed for this species group.

Birds

3.3.6 The BDS returned records of 91 protected or noteworthy bird species from the 2km radius around the site,

3.3.7 The buildings and trees immediately adjacent to the site may provide nesting locations for several species, including black redstart (*Phoenicurus ochruros*). The desk-study generated records of this species within 2km of the site, though the most recent record was in 1964. London is known to be a stronghold for black redstart populations in England, so they are particular conservation interest in the area surrounding this site.

3.3.8 The results of the BDS also raise the possibility that house sparrows *(Passer domesticus*) may be associated with buildings on site, though no active or old nests were observed during the survey.

Bats

3.3.9 The BDS returned records of the following bat species within 2km of the site:

- Serotine (*Eptesicus serotinus*)
- Daubenton's bat (*Myotis daubentonii*)
- Natterer's bat (*Myotis natterii*)
- Leisler's bat (*Nyctalus leisleri*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Nathusius's pipistrelle (*Pipistrellus nathusii*)
- Brown long-eared bat (*Plecotus auritus*)
- Unidentified myotis species (*Myotis sp.*)

3.3.10 There are no trees close enough to MUGA 1 to be significantly affected by the proposed lighting plan. However, there are a number of older buildings which have high potential for roosting bats. There are gaps between the clay tiles on the pitched roofs. Pipistrelles may roost in these gaps, while void dwelling species such as long-eared bats may use them to access loft cavities.

3.3.11 One tree on the western edge of the treeline near MUGA 2 was found to have high potential for roosting bats, with two east-facing cavities approximately 20m high (Target Note 1). The run-off brook to the south of this MUGA provides suitable foraging habitat for bats due to the increased invertebrate population at this location.

3.3.12 The buildings close to MUGA 2 have no roosting potential due to their age and lack of access.

Dormice

3.3.13 There was no habitat suitable for dormice on site, and no records within 2km of the site. No further survey or mitigation is proposed for this species group.

Badgers

3.3.14 The BDS found that badgers had been recorded within 2km of the site boundary. However, none of these records were within 100m of the site.

3.3.15 No badger setts, tracks, latrines, snuffle holes, hairs on boundary fences or other signs of badger activity were noted during a thorough investigation of the site for use by this species. The strips of amenity grassland on site are too small to provide suitable foraging habitat. This species is therefore likely to be absent from the site.

Other species

3.3.16 Multiple records of hedgehogs within 2 km of the site were identified during the BDS. Hedgehogs occupy a range of lowland habitats with enough cover to allow nesting; meaning that while they are common in suburban areas, they are unlikely to be present at this site.

4.0 EVALUATION

Statutory Designated Sites

4.1.1 There are three statutory sites within 2km of the site boundary (Ruislip Woods, Batchworth Heath, and Oxhey Woods). The closest of these is Ruislip Woods, 830m south of the site. As a result, no significant adverse effects are anticipated on any of the designated sites, all of which fall outside of the zone of influence of the proposed development, and they are therefore not considered further.

Sites of Special Scientific Interest (SSSI) - Impact Risk Zones

4.1.2 The site intersects the SSSI impact risk zones for one SSSI in the wider area. However, the proposed works do not in this case meet any of the criteria (specific to and published for each SSSI individually) that would trigger a requirement for the planning authority to consult with Natural England before determining a planning application.

Non-statutory designated sites

4.1.3 There are nineteen non-statutory designated sites within 2km of the site boundary, four of which are within 1km. Due to the nature of the proposed works, it is unlikely that these designated sites or their features will be negatively affected, as long as appropriate strategies are in place to limit outside disturbance.

Informal Strategies to Identify Ecologically Desirable Areas

4.1.4 The site is within the outer London National priority focus area. An additional biodiversity net gain multiplier is associated with this zone. However, the expected impact of this project on the local environment is minimal, assuming that appropriate mitigation measures are implemented.

Habitats and plants

4.1.5 The habitats at the site are not species-rich and have little intrinsic botanical value. They are common and widespread in the surrounding landscape. The run-off ditch is likely to valuable as a foraging habitat for bats. Due to the scope of the project, it is unlikely that there will be physical damage to this habitat.

Protected and other notable species

4.1.6 Several buildings close to MUGA 1, and a tree close to MUGA 2, have potential for roosting by bats, as well as the brook providing foraging habitat. While the proposal does not involve removal or damage to these features, the artificial lighting of these areas during the dark may disturb bats, thereby limiting their use of valuable roosting and feeding resources. Bats are afforded protection through the Conservation of Habitats and Species Regulations 2017 (as amended) as well as the Wildlife and Countryside Act 1981 (as amended) (refer to Appendix A for further details). Mitigation may therefore be necessary to ensure compliance with this legislation. This is outlined further in Section 5 of this report.

4.1.7 The site was found to be unsuitable for supporting badger setts, although it is possible that the immediately surrounding areas could be used periodically for foraging purposes. Additionally, the site does not provide suitable habitat for hedgehogs. However, precautionary measures are recommended during the works to prevent any negative impacts. This is outlined further in Section 5 of this report.

4.1.8 Enhancement measures for these species are recommended, as outlined in Section 5.

4.2 Validity of Data

4.2.1 Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18 months, and potentially up to 3 years (CIEEM 2019).

5.0 RECOMMENDATIONS

5.1.1 Recommended further surveys are outlined below. Under current planning guidance and case law, a planning consent is likely to be obstructed or withheld at the time of the application if the results of required ecological surveys are unavailable. Given that many surveys can only be carried out at certain times of the year, it would be prudent to undertake these further surveys as soon as possible (unless it can be foreseen that it would make them out-of-date by the time of the application).

5.2 Recommendations and further surveys

Bats

5.2.1 It is possible that the buildings and trees on site support roosting bats. Bats are protected under the Habitats Regulations and the Wildlife and Countryside Act 1981 (as amended) (see Appendix A). Further surveys are required to either indicate that bats are absent, or to identify if any bats are roosting in these structures, and if so, assess the impact that the development would have on them to inform the mitigation measures that might be required as part of the design proposals.

5.2.2 Bat activity surveys, including walked transects and the use of static bat recorders, would determine bat usage of the site. If the results of these surveys show high levels of activity, or rarer bat species, it may be necessary to conduct additional emergence and re-entry surveys of the potential roost features on site. For example, the high potential tree would require three separate emergence or re-entry surveys with at least one of each. High potential buildings require the same number and type of surveys as trees. Due to the time of year in which this appraisal was carried out, it may be necessary for these surveys to take place in the 2023 survey season, no earlier than May.

5.2.3 A sensitive lighting scheme should be maintained during construction of the floodlights, and guaranteed throughout the operational phases, the floodlights must be placed in such a way as to ensure that they do not disturb any roosting or foraging bats using the site.

5.3 Mitigation requirements

5.3.1 The proposed works will be constrained by the legislative protection afforded to bats, as outlined in *Appendix A*.

Bats

5.3.2 Further surveys (as outlined in Section 5.2.1) will be required to determine the extent of any impacts on bats, and the data gathered from these surveys used to determine appropriate impact avoidance, mitigation or compensation measures and inform any licence application for disturbance.

5.3.3 One tree could be used by roosting bats, as detailed in Target Note 1, as well as several buildings. While these features will not be directly impacted by the works, light pollution

from any poorly positioned lights may disturb any bats using them. As a result, it is important to ensure that lighting plans limit as much light pollution as possible.

5.3.4 It is our understanding that the sports pitches will be in use between the hours of 09:00 and 21:00 on weekdays, and that the floodlights are required to light the pitches during the winter months. The pitch will be used no later than 18:00 on weekends.

5.3.5 These lights are unlikely to be used between the months of April and October. Bats typically enter hibernation from the month of November, meaning that there is a limited amount of time in which the floodlights may cause disturbance. Despite this, plans for lighting showing the columns of light emitted by each floodlight, including any overspill which may affect the bat habitats, will need to be approved by an ecologist prior to the commencement of works.

5.3.6 These recommendations are based on the following assumptions:

- During construction, the use of site lighting and working in the hours of darkness should be avoided.
- Floodlighting will not be in use after 21:00 in the winter months.
- Floodlighting will not be used between dusk and dawn during the active bat season (April – October inclusive).

5.4 Opportunities for enhancement

Landscaping

5.4.1 Any bats on site would benefit from the planting of native trees and hedgerows in the darker areas of the site. This would create commuting corridors for bats, providing them with access to the wider landscape. These features should be kept as dark corridors and should have strips of rough native grassland planted adjacent to them to attract invertebrates, a valuable food source for these species.

Nest/Roost boxes

5.4.2 While there are already bat boxes on site, the placement of additional boxes would provide additional roosting sites for bat species in darker areas of the site, to help offset impacts associated with the increase in ambient light. This enhancement measure could be designed and implemented on site by an ecological clerk of works.

6.0 CONCLUSIONS

6.1.1 Buildings close to MUGA 1 were identified as having high suitability for bats, as was one tree adjacent to MUGA 2. Further surveys are required to assess the amount of disturbance that the development may have on the local bat population. It is likely that these surveys will need to take place in the next season.

6.1.2 Before the floodlights can be put in place, lighting plans must be viewed to assess the ecological impact of any light pollution. These may then need to be subject to alteration in order to limit this impact.

6.1.3 Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18 months, and potentially up to 3 years (CIEEM 2019).

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FIGURES

Figure 1. Site Location Plan

Figure 2. Site Habitat Map (UK Hab)

508500 508600 508700 508800 508900 509000 509100 509200 509300

191600 191500 191400 191300 191200 191100 191000

The Hall School/The Grange

Green Lane

Green Lane

A404

Northwood and Pinner Liberal Synagogue

Eastbury R

Northwood

Underground-Northwood

Northwood College

Maxwell Road

Rickmansworth Road

Murray Road

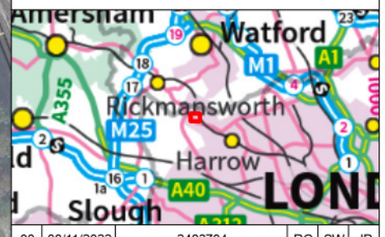
A404

Murray Road

Legend:

Blue Line Boundary

Red Line Boundary



Rev	Date	Description	Drn	Chk	App
00	08/11/2022	2483704	RG	SW	JP

Northwood College London

RSK biocensus
EXPERTS IN ECOLOGY

TITLE: Figure 1:

Site Location Plan

0 30 60 90

Metres

SCALE: 1:2,500 @ A3

N W E S

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Legend:

- Blue Line Boundary
- Red Line Boundary

UKHab Habitats

- Developed Land; Sealed Surface
- Target Note

Rev	Date	Description	Drn	Chk	App
00	08/11/2022	2483704	RG	SW	JP

Northwood College London

RSK biocensus
EXPERTS IN ECOLOGY

TITLE: Figure 2:

Habitat Survey

0 10 20 30
Metres
SCALE: 1:1,250 @A3

REV 00

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APPENDIX A – NATURE CONSERVATION LEGISLATION AND POLICY

International Legislation

The following international conventions and directives apply to biodiversity protection in the UK. Post-'Brexit', even though European Union (EU) directives no longer directly apply to the UK, the provisions therein are enshrined in both domestic legislation and international agreements. Legislation has been enacted to ensure the regulations derived from these remain in force[3].

The Convention on Biological Diversity 1992 *et seq.*

This multilateral treaty (https://www.cbd.int/doc/legal/cbd-en.pdf), signed by 150 government leaders at the 1992 Rio Earth Summit, has three main goals, of which one is the conservation of biological diversity. Article 6 requires countries to develop national biodiversity strategies, plans or programmes. In response, the UK developed the UK Biodiversity Action Plan (BAP) 1994 (https://jncc.gov.uk/our-work/uk-bap/) as well as county-specific BAPs. Subsequent to this, parties of the convention agreed the supplementary Nagoya Protocol 2010 (available at https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf), adopting the Strategic Plan for Biodiversity 2011-2020. The purpose of this Strategic Plan was to provide a framework for establishing national and regional biodiversity targets (https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf).

Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009
https://www.legislation.gov.uk/eudr/2009/147

The Birds Directive 2009 relates to the conservation of all species of naturally occurring birds in their wild state in the territory of the EU Member States (MSs) to which the treaty applies. Under the Birds Directive, the most suitable areas of conservation of the Annex I species are to be designated as Special Protection Areas (SPAs), as part of the European Natura 2000 network. Post Brexit, SPAs are no longer considered part of Natura 2000 and are instead components of the UK's 'national site network', but their highly protected status is unchanged. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to fulfil the commitment made by government to maintain environmental protections and continue to meet the UK's international legal obligations.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) 1992
https://www.legislation.gov.uk/eudr/1992/43

The Habitats Directive 1992 requires EU MSs to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest, which are listed

[3] Further information relating to England and Wales can be found here: https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017. A similar exercise has been undertaken in Scotland and Northern Ireland.

under Annex I, II, IV and/or V. Species listed under Annex IV are known as 'European Protected Species' (EPS), and have retained their protected status in UK domestic legislation post-Brexit.

Under the Habitats Directive, EU Member States are required to contribute to the Natura 2000 network through the designation of Special Areas of Conservation (SACs) for natural habitat types listed in Annex I and habitats of species listed in Annex II. Post Brexit, SACs are no longer considered part of the European Natura 2000 network and are instead components of the UK's 'national site network', but their highly protected status is unchanged.

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971: the Ramsar Convention
Accessible via https://jncc.gov.uk/our-work/ramsar-convention/

The Ramsar Convention is an intergovernmental treaty focused on the conservation and sustainable use of wetland, primarily as habitats for water birds. Under the convention, each ratified country is required to identify and designated sites (Ramsar sites) that meet the criteria for identifying a wetland of international importance, i.e. containing representative, rare, or unique wetland types. In addition, the convention promotes international co-operation to promote the wise use of all wetlands and their resources.

Habitats Regulations Assessment (HRA): a note

There is a requirement under the EU nature directives, and enshrined in country-specific domestic legislation[4] (see below), to undertake a screening exercise to determine whether any sites that form part of the 'national site network' (formerly Natura 2000) are likely to be significantly affected by any proposal (project or plan). The assessment must consider the proposals alone and also in combination with other plans and projects, if they result from activities that are not directly connected with, or necessary to, the management of the designated sites. If significant effects are likely, an Appropriate Assessment (AA) will need to be carried out. The screening, any AA, and any subsequent assessment, are collectively known as a Habitats Regulations Assessment (HRA). The HRA needs to take into account each of the 'Qualifying Features' (habitats or species) that justified the site being designated. Ramsar sites are treated in the same way as SACs and SPAs in HRAs, as are sites which have not been fully adopted i.e. candidate SACs (cSACs) and potential SPAs (pSPAs).

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979
Accessible via**:** https://jncc.gov.uk/our-work/the-convention-on-the-conservation-of-migratory-species-of-wild-animals/#convention-summary

The Bonn Convention was adopted in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative

[4] In England and Wales: the Conservation of Habitats and Species Regulations 2017 (as amended).
In Scotland: the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).
In Northern Ireland: the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended). .
In the UK offshore area: the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended).

research activities. The UK Government ratified the Bonn Convention in 1985. The current legally-binding Agreements under the Convention include EUROBATS[5].

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979
https://www.coe.int/en/web/bern-convention

The principal aims of the Bern Convention 1979 are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Bern Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species. The UK Government ratified the Bern Convention in 1982.

National Legislation

The following pieces of domestic legislation apply to biodiversity protection in the UK.

The Wildlife and Countryside Act (WCA) 1981
https://www.legislation.gov.uk/ukpga/1981/69

The Wildlife and Countryside Act 1981 (as amended) is the primary piece of legislation relating to nature conservation in the UK, though it has been adapted in different ways in the devolved administrations. It was initially enacted to implement the Bern Convention, Bonn Convention and the Birds Directive (described above).

The act is supplemented by provisions in the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, and extended in Scotland by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011). Its equivalent in Northern Ireland is the Wildlife (Northern Ireland) Order 1985 (as amended and similarly extended). In addition to the Habitat Regulations (described below), the WCA provides protection for species listed in Schedules 1 (birds), 5 (other animals) and 8 (plants) of the Act. It provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) in England and Wales[6]. It also sets out, in other schedules, important and invasive species which are legally protected or require management.

All species of bird are protected under the WCA. The legislation makes it an offence to intentionally:

a) kill, injure or take any wild bird.
b) take, damage, or destroy the nest of any wild bird while that nest is in use or being built; or
c) take or destroy an egg of any wild bird.

Those species of birds listed on Schedule 1 of the WCA are afforded additional protection, which deems it an offence to intentionally or recklessly:

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[5] More information available at https://jncc.gov.uk/our-work/agreement-on-the-conservation-of-populations-of-european-bats-eurobats

[6] Duty replaced by the Nature Conservation (Scotland) Act 2004 (as amended) and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended) in those countries.

a) disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
b) disturb dependent young of such a bird.

Under Section 9 of the WCA, for animals listed on Schedule 5, it is an offence in England and Wales to intentionally or recklessly:

- kill, injure or take any wild animal listed on Schedule 5*;
- possess or control any live or dead those wild animals or anything derived from it*;
- damage or destroy any structure or place which wild animals listed on Schedule 5 uses for shelter or protection*;
- disturb any such animal while it is occupying a structure or place of shelter or protection;
- obstruct access to any structure or place used by any such animal for shelter or protection; and
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead wild animal listed on Schedule 5 or any part of, or anything derived from such an animal.

As noted above, there are minor differences between the offences in England and Wales outlined above, and those in Scotland / Northern Ireland. The three clauses marked with asterisks do not apply to EPS in England and Wales, as these offences are included in the 'Habitats Regulations' (see below). In addition, the Wildlife and Countryside Act 1981 is no longer relevant to EPS in Scotland or Northern Ireland, which instead are afforded full protection by the 'Habitats Regulations' (see below).

In addition to EPS, species commonly found on development sites include water voles (*Arvicola amphibius*) and widespread species of reptiles: common lizard (*Zootoca vivipara*); slow-worm (*Anguis fragilis*); grass snake (*Natrix helvetica*); and adder (*Vipera berus*). These four reptile species receive partial protection, which prevents the intentional or deliberate killing and injuring of reptiles or offering them for sale.

Section 14(2)[7] states that it is an offence to plant or otherwise cause to grow any plant in the wild at a place outside its native range.

There is no provision within the Act for derogation licences to be issued for the purposes of development, although Section 10 provides a defence in cases that may be considered to be: *"the incidental result of a lawful operation and could not reasonably have been avoided"* if certain conditions are met.

Section 16(i) of the Act does make provision for derogation licences to be issued *"for the purposes of preserving public health or public … safety"*. For confirmation of this, it would be appropriate to consult the relevant statutory nature conservation body (SNCB)[8].

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[7] In Scotland, as amended by Section 14 of the Wildlife and Natural Environment (Scotland) Act 2011.

[8] SNCBs are - in England: Natural England; in Wales: Natural Resources Wales; in Scotland: NatureScot; in Nortern Ireland: Department of Agriculture, Environment and Rural Affairs (DAERA).

The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017
https://www.legislation.gov.uk/uksi/2017/1012 England and Wales

The Conservation (Natural Habitats, &c.) Regulations 1994
https://www.legislation.gov.uk/uksi/1994/2716/contents/made Scotland[9] (as amended, notably by The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007).

The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended, notably by The Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2007**)**
https://www.legislation.gov.uk/nisr/1995/380/contents/made Northern Ireland[10]

The Habitats Regulations 2017 consolidated the various amendments made to the 1994 Habitat Regulations, which were developed to implement the Birds Directive and Habitats Directive (see above) at a national level, though this consolidation only applies in England and Wales. As noted above, in Scotland and in Northern Ireland, the original versions of the Regulations in each region have been retained and amended to include protections for EPS that were initially provided under the WCA (or its equivalent).

The Regulations (as amended) provide for the designation and protection of the national site network (formerly 'Natura 2000 sites'), the adaptation of planning and other controls for those sites, and the protection of EPS (listed on Schedules 2 and 5).

The 2017 Regulations (England and Wales, Reg. 43) deems it an offence to:

a) deliberately capture, injure or kill a wild animal of a EPS,
b) deliberately disturb wild animals of any such species,
c) deliberately take or destroy the eggs of such an animal, or
d) damage or destroy a breeding site or resting place of such an animal.

For the purposes of paragraph (b), disturbance of animals includes in particular any disturbance which is likely to:

a) impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
b) to affect significantly the local distribution or abundance of the species to which they belong.

There are also restrictions on transport, possession and sale.

The Habitats Regulations 1994 which apply in Scotland with a number of amendments, provide full protection to EPS without recourse to the WCA[11].

The legislation in Northern Ireland is similar to Scotland in that the protection for EPS has been transferred to the Conservation (Natural Habitats, & c.) Regulations (NI) 1995 (as amended).

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9 This is the original text, and that amendments relevant to Scotland can be found here: https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations/habitats-regulations

10 This is the original text, and that amendments relevant to Northern Ireland can be found here: https://www.netregs.org.uk/legislation/northern-ireland-environmental-legislation/current-legislation/conservation/

11 https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations/european-protected

It is possible to obtain a derogation licence from the relevant SNCB[8] to permit activities which would otherwise contravene the regulations above, including for development purposes, when certain conditions are met. Failure to satisfy the Regulations and obtain a licence where required could result in prosecution and lead to fines and possible imprisonment.

To meet the requirements in Regulation 63(1) [48(1) of the 1994 Regulations in Scotland], an HRA is required (see note in previous section).

Currently (2021), all EPS are also listed on Schedule 5 of the WCA (outlined above), as it applies in England and Wales, though only some clauses of the WCA apply (Section 9 4(b), (c) and 5). EPS often encountered on development sites include GCN (*Triturus cristatus*), all species of bats, dormice (*Muscardinus avellanarius*) and otters (*Lutra lutra*).

Conservation of Offshore Marine Habitats and Species Regulations 2017
https://www.legislation.gov.uk/uksi/2017/1013

The Conservation of Offshore Marine Habitats and Species Regulations 2017 transposed into national law the Habitats Directive (and the Bird Directive in the UK offshore areas). These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area.

These regulations enable the designation and protection of areas that host habitats and species of European importance in the offshore marine area. These sites were previously defined collectively as 'European offshore marine sites' and now, together with all other terrestrial and marine SACs and SPAs across the UK, form a network of sites known as the 'national site network'.

Countryside and Rights of Way Act 2000
https://www.legislation.gov.uk/ukpga/2000/37

The Countryside and Rights of Way (CRoW) Act 2000 provides for public access on foot to certain land types, amends the law for public rights of way, increases protection for SSSIs, and strengthens wildlife enforcement legislation. It applies only in England and Wales.

The Natural Environment and Rural Communities (NERC) Act 2006
https://www.legislation.gov.uk/ukpga/2006/16

The Natural Environment and Rural Communities (NERC) Act 2006, Section 40 requires that any public body or statutory undertaker in England must have regard to the purpose of conservation of biological diversity in a manner that is consistent with the exercise of their normal functions. This may include enhancing, restoring or protecting a population or a habitat. The intention is to help ensure that biodiversity becomes an integral consideration in the development of policies, and that decisions of public bodies work with the grain of nature and not against it.

As part of this duty, statutory undertakers must have regard to the list of habitats and species which are of principal importance for the purpose of maintaining and enhancing biodiversity. For

England, the duty to compile such a list is captured under Section 41 of the NERC Act. The lists for are accessible online via the National Archive[12].

The Hedgerows Regulations 1997
https://www.legislation.gov.uk/uksi/1997/1160/made

The Hedgerows Regulations 1997 provide protection for 'important' hedgerows for which replanting is not a substitute. The 'importance' of a hedgerow depends upon several archaeological, wildlife and landscape criteria (which are outlined in the Regulations). The regulations deem it an offence to remove an 'important hedgerow' without prior notification to the relevant local planning authority.

Protection of Badgers Act 1992
https://www.legislation.gov.uk/ukpga/1992/51

Badgers and their setts are protected under the Protection of Badgers Act 1992 (England, Wales and Scotland). The key part of this legislation in relation to the proposed development are in Section 3, which deems it an offence to:

a) damage a badger sett or any part of it;
b) destroy a badger sett;
c) obstruct access to, or any entrance of, a badger sett;
d) disturb a badger when it is occupying a badger sett,
e) intend to do any of those things or be reckless as to whether those actions would have any of the consequences listed above.

Derogation licences may be obtained from the relevant SNCB[8] under Section 10 of the Act for the purpose of development, to permit activities which would otherwise be unlawful.

Note: there are additional provisions relating to badgers under the WCA Section 11 (Prohibition of certain methods of killing or taking wild animals).

The Wild Mammals (Protection) Act 1996
https://www.legislation.gov.uk/ukpga/1996/3

All wild mammals are protected by The Wild Mammals (Protection) Act 1996 (as amended). This makes it an offence to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal.

Invasive Alien Species (Enforcement and Permitting) Order 2019
(https://www.legislation.gov.uk/uksi/2019/527/contents/made)

The Invasive Alien Species (Enforcement and Permitting) Order applies principally in England and Wales and the UK's offshore marine area, but also controls imports and exports from the UK (including Scotland and Northern Ireland). It lists species of concern which cannot be imported, kept, bred/grown, transported, sold, used, allowed to reproduce, or released into the environment. This Order replaces some elements relating to invasive species in the Wildlife and Countryside Act 1981 (as amended).

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12 https://webarchive.nationalarchives.gov.uk/ukgwa/20140712055944/http:/www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

National, regional and local policy and guidance of relevance

Planning policy relating to ecology and nature conservation is set out below.

National Planning Policy Framework 2021
Access via: https://www.gov.uk/government/publications/national-planning-policy-framework--2

The National Planning Policy Framework (NPPF) sets out the Government's planning policy in England at the national level. It does not contain specific policies for nationally significant infrastructure projects, which are determined in accordance with the decision-making framework in the Act and relevant National Policy Statements for major infrastructure, as well as any other matters that are relevant (which may include the NPPF). Section 15 (paragraphs 174-188) of the NPPF specifies the requirements for conserving and enhancing the natural environment through the planning and development process to minimise impacts on habitats and biodiversity.

Planning Practice Guidance
Accessed via: https://www.gov.uk/government/collections/planning-practice-guidance

The Planning Practice Guidance is a web-resource to support the NPPF, including guidance for Environmental Impact Assessments (https://www.gov.uk/guidance/environmental-impact-assessment) and the Natural Environment (https://www.gov.uk/guidance/natural-environment). The guidance for the Natural Environment explains key issues in implementing the NPPF to protect and enhance the natural environment, including local requirements. The guidance outlines what evidence needs to be taken into account in preparing planning applications to identify and map local ecological networks. It also outlines how biodiversity can be taken into account in preparing a planning application.

Government's 25-Year Environment Plan 2018
Accessed via: https://www.gov.uk/government/publications/25-year-environment-plan

The Government's 25-Year Environment Plan 2018 sets out how the UK Government intends to improve the natural health of the UK through improving land, air and water quality, as well as setting out how the effects of climate change will be tackled. The plan promotes the creation or restoration of wildlife-rich habitat outside the protected site network and seeks to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human induced extinction or loss of known threatened species in England. The plan sets out a number of goals and corresponding policies that look at managing land sustainably, improving and enhancing landscapes and biodiversity for both marine and terrestrial environments, improving resource efficiency and reducing waste and pollution, whilst also examining the UK's contribution to improving the global environment.

APPENDIX B – NOTEWORTHY SPECIES RECORDS

Table **5***5* displays protected species records that are located within 2 km of the site boundary, while *Table 6* displays noteworthy species records within the same search radius.. These species records were obtained from Herts Environmental Records Centre. The scientific and common names for species are given as well as their level of designation. A glossary defining abbreviations used in the table is given in **Error! Reference source not found.**, Appendix C. If a species is not included in the table below it does not necessarily mean the species is absent from the search area, but that data-holding organizations do not have records of it in these locations.

Table 5: Protected species records within 2 km of the site boundary.

Latin Name	Common Name	Designation	Most Recent	Within 100m
Amphibians				
Triturus cristatus	Great Crested Newt	EPS(Sch2), WCA5, S41	2020	
Birds				
Alcedo atthis	Kingfisher	WCA1.1, Amber	2018	
Anas acuta	Pintail	WCA1.2, Amber, GB RDB(CR)	2018	
Anser anser	Greylag Goose	WCA1.2, Amber	2018	
Botaurus stellaris	Bittern	WCA1.1, S41, Amber, GB RDB(VU)	1964	
Bucephala clangula	Goldeneye	WCA1.2, Amber, GB RDB(VU)	2018	
Cettia cetti	Cetti's Warbler	WCA1.1	2021	
Charadrius dubius	Little Ringed Plover	WCA1.1	2003	
Falco peregrinus	Peregrine	WCA1.1	2018	
Falco subbuteo	Hobby	WCA1.1	2018	
Fringilla montifringilla	Brambling	WCA1.1	1980	
Hydrocoloeus minutus	Little Gull	WCA1.1	2018	
Lanius collurio	Red-backed Shrike	WCA1.1, Red, GB RDB(CR)	1978	
Loxia curvirostra	Crossbill	WCA1.1	2019	
Melanitta nigra	Common Scoter	WCA1.1, S41, Red, GB RDB(CR)	2018	
Milvus milvus	Red Kite	WCA1.1	2018	
Pandion haliaetus	Osprey	WCA1.1, Amber	2018	
Phoenicurus ochruros	Black Redstart	WCA1.1, Amber, GB RDB(EN)	1964	
Podiceps nigricollis	Black-necked Grebe	WCA1.1, Amber, GB RDB(EN)	2018	
Recurvirostra avosetta	Avocet	WCA1.1, Amber	2018	
Regulus ignicapilla	Firecrest	WCA1.1	1997	
Tringa glareola	Wood Sandpiper	WCA1.1, Amber, GB RDB(EN)	2010	
Tringa ochropus	Green Sandpiper	WCA1.1, Amber, GB RDB(EN)	2016	
Turdus iliacus	Redwing	WCA1.1, Amber, GB RDB(CR)	2018	
Turdus pilaris	Fieldfare	WCA1.1, Red, GB RDB(CR)	2019	

Tyto alba	Barn Owl	WCA1.1	2018	
Invertebrates				
Melitaea athalia	Heath Fritillary	WCA5, S41, GB RDB(EN)	2015	
Papilio machaon	Swallowtail	WCA5	2005	
Mammals				
Arvicola amphibius	European Water Vole	WCA5, S41, GB RDB(EN)	2017	
Eptesicus serotinus	Serotine	EPS(Sch2), WCA5, GB RDB(VU)	1987	
Martes martes	Pine Marten	WCA5, S41	1872	
Meles meles	Eurasian Badger	BA	2019	
Myotis	Myotis Bat species	EPS(Sch2), WCA5	1961	
Myotis daubentonii	Daubenton's Bat	EPS(Sch2), WCA5	2013	
Myotis nattereri	Natterer's Bat	EPS(Sch2), WCA5	1961	
Nyctalus leisleri	Lesser Noctule	EPS(Sch2), WCA5	1940	
Nyctalus noctula	Noctule Bat	EPS(Sch2), WCA5, S41	1964	
Pipistrellus	Pipistrelle Bat species	EPS(Sch2), WCA5	1977	
Pipistrellus nathusii	Nathusius's Pipistrelle	EPS(Sch2), WCA5	1961	
Pipistrellus pipistrellus	Common Pipistrelle	EPS(Sch2), WCA5	2015	
Pipistrellus pygmaeus	Soprano Pipistrelle	EPS(Sch2), WCA5, S41	2013	
Plecotus auritus	Brown Long-eared Bat	EPS(Sch2), WCA5, S41	2020	
Sciurus vulgaris	Eurasian Red Squirrel	WCA5, S41, GB RDB(EN)	1944	
Vespertilionidae	Bats	EPS(Sch2), WCA5	1964	
Plants				
Caloplaca luteoalba	Orange-Fruited Elm-Lichen	WCA8, S41, GB RDB(EN), NS	1959	
Chenopodium vulvaria	Stinking Goosefoot	WCA8, S41, GB RDB(EN), ENG BSBI RDB(EN), NS	2019	
Dianthus armeria	Deptford Pink	WCA8, S41, GB RDB(EN), ENG BSBI RDB(EN), NS	2013	
Lythrum hyssopifolia	Grass-poly	WCA8, S41, GB RDB(EN), ENG BSBI RDB(EN), NR	2020	
Malva setigera	Rough Marsh-mallow	WCA8	1978	
Mentha pulegium	Pennyroyal	WCA8, S41, GB RDB(CR), ENG BSBI RDB(CR), NS	1964	
Thlaspi perfoliatum	Perfoliate Penny-cress	WCA8, S41, GB RDB(VU), ENG BSBI RDB(VU), NR	1964	
Reptiles				
Anguis fragilis	Slow-worm	WCA5, S41	2015	
Natrix helvetica	Grass Snake	WCA5, S41	2019	
Vipera berus	Adder	WCA5, S41	2021	
Zootoca vivipara	Common Lizard	WCA5, S41	2013	

Table 6: Noteworthy species records within 2 km of the site boundary.

Latin Name	Common Name	Designation
Amphibians		
Bufo bufo	Common Toad	WCA5, S41
Rana temporaria	Common Frog	WCA5
Birds		

Acanthis cabaret	Lesser Redpoll	S41, Red
Acanthis flammea	Common Redpoll	Amber, GB RDB(CR)
Accipiter nisus	Sparrowhawk	Amber
Actitis hypoleucos	Common Sandpiper	Amber, GB RDB(VU)
Alauda arvensis	Skylark	S41, Red
Anas crecca	Teal	Amber
Anas platyrhynchos	Mallard	Amber
Anthus pratensis	Meadow Pipit	Amber
Anthus trivialis	Tree Pipit	S41, Red
Apus apus	Swift	Red, GB RDB(EN)
Asio flammeus	Short-eared Owl	Amber, GB RDB(EN)
Aythya ferina	Pochard	Red, GB RDB(EN)
Branta leucopsis	Barnacle Goose	Amber
Calidris alpina	Dunlin	Red, GB RDB(EN)
Charadrius hiaticula	Ringed Plover	Red, GB RDB(VU)
Chloris chloris	Greenfinch	Red, GB RDB(EN)
Chroicocephalus ridibundus	Black-headed Gull	Amber, GB RDB(VU)
Coccothraustes coccothraustes	Hawfinch	S41, Red, GB RDB(EN)
Columba oenas	Stock Dove	Amber
Cuculus canorus	Cuckoo	S41, Red, GB RDB(VU)
Cygnus olor	Mute Swan	Amber
Delichon urbicum	House Martin	Red, GB RDB(VU)
Emberiza citrinella	Yellowhammer	S41, Red
Emberiza schoeniclus	Reed Bunting	S41, Amber
Falco tinnunculus	Kestrel	Amber, GB RDB(VU)
Ficedula hypoleuca	Pied Flycatcher	Amber, GB RDB(VU)
Gallinago gallinago	Snipe	Amber
Gallinula chloropus	Moorhen	Amber, GB RDB(VU)
Haematopus ostralegus	Oystercatcher	Amber
Larus argentatus	Herring Gull	S41, Red, GB RDB(EN)
Larus cachinnans	Caspian Gull	Amber, GB RDB(VU)
Larus canus	Common Gull	Amber
Larus fuscus	Lesser Black-backed Gull	Amber
Linaria cannabina	Linnet	S41, Red
Mareca penelope	Wigeon	Amber
Mareca strepera	Gadwall	Amber
Mergellus albellus	Smew	Amber, GB RDB(CR)
Mergus serrator	Red-breasted Merganser	GB RDB(VU)
Motacilla cinerea	Grey Wagtail	Amber
Motacilla flava	Yellow Wagtail	S41, Red
Muscicapa striata	Spotted Flycatcher	S41, Red
Numenius arquata	Curlew	S41, Red, GB RDB(EN)
Oenanthe oenanthe	Wheatear	Amber
Passer domesticus	House Sparrow	S41, Red
Passer montanus	Tree Sparrow	S41, Red, GB RDB(VU)
Phylloscopus sibilatrix	Wood Warbler	S41, Red, GB RDB(VU)
Phylloscopus trochilus	Willow Warbler	Amber
Pluvialis squatarola	Grey Plover	Amber, GB RDB(VU)
Poecile montanus	Willow Tit	S41, Red, GB RDB(EN)

Poecile palustris	Marsh Tit	S41, Red, GB RDB(VU)
Prunella modularis	Dunnock	S41, Amber
Pyrrhula pyrrhula	Bullfinch	S41, Amber
Rissa tridactyla	Kittiwake	Red, GB RDB(CR), OSPAR
Saxicola rubetra	Whinchat	Red
Scolopax rusticola	Woodcock	Red, GB RDB(VU)
Spatula clypeata	Shoveler	Amber
Sterna hirundo	Common Tern	Amber
Sterna paradisaea	Arctic Tern	Amber, GB RDB(VU)
Strix aluco	Tawny Owl	Amber
Sturnus vulgaris	Starling	S41, Red, GB RDB(VU)
Tadorna tadorna	Shelduck	Amber, GB RDB(EN)
Thalasseus sandvicensis	Sandwich Tern	Amber
Troglodytes troglodytes	Wren	Amber
Turdus philomelos	Song Thrush	S41, Amber
Turdus torquatus	Ring Ouzel	S41, Red, GB RDB(VU)
Turdus viscivorus	Mistle Thrush	Red, GB RDB(VU)
Vanellus vanellus	Lapwing	S41, Red, GB RDB(EN)
Fish		
Anguilla anguilla	European Eel	S41, OSPAR
Salmo trutta	Brown Trout	S41
Invertebrates		
Acronicta psi	Grey Dagger	S41
Acronicta rumicis	Knot Grass	S41
Adscita statices	Forester	S41
Agabus uliginosus	Agabus uliginosus	Notable:B
Agrochola helvola	Flounced Chestnut	S41
Agrochola litura	Brown-spot Pinion	S41
Agrochola lychnidis	Beaded Chestnut	S41
Allophyes oxyacanthae	Green-brindled Crescent	S41
Amphipoea oculea	Ear Moth	S41
Amphipyra tragopoginis	Mouse Moth	S41
Apamea anceps	Large Nutmeg	S41
Apamea remissa	Dusky Brocade	S41
Apatura iris	Purple Emperor	WCA5
Aplota palpellus	Scarce Brown Streak	S41
Aporophyla lutulenta	Deep-brown Dart	S41
Arctia caja	Garden Tiger	S41
Aromia moschata	Musk Beetle	Notable:B
Asteroscopus sphinx	Sprawler	S41
Atethmia centrago	Centre-barred Sallow	S41
Boloria euphrosyne	Pearl-bordered Fritillary	WCA5, S41, GB RDB(EN)
Boloria selene	Small Pearl-bordered Fritillary	S41
Brachylomia viminalis	Minor Shoulder-knot	S41
Bromus interruptus	Interrupted Brome	S41
Byctiscus populi	Leaf-rolling Weevil	S41
Calamotropha paludella	Bulrush Veneer	Notable:B
Caradrina morpheus	Mottled Rustic	S41
Centaurea cyanus	Cornflower	S41

Ceramica pisi	Broom Moth	S41
Chesias legatella	Streak	S41
Chesias rufata	Broom-tip	S41
Chiasmia clathrata	Latticed Heath	S41
Cirrhia gilvago	Dusky-lemon Sallow	S41
Cirrhia icteritia	Sallow	S41
Coenonympha pamphilus	Small Heath	S41
Cosmia diffinis	White-spotted Pinion	S41
Cossus cossus	Goat Moth	S41
Cyclophora pendularia	Dingy Mocha	S41
Cymatophorina diluta	Oak Lutestring	S41
Diarsia rubi	Small Square-spot	S41
Dicycla oo	Heart Moth	S41
Diloba caeruleocephala	Figure of Eight	S41
Ecliptopera silaceata	Small Phoenix	S41
Ennomos erosaria	September Thorn	S41
Ennomos fuscantaria	Dusky Thorn	S41
Ennomos quercinaria	August Thorn	S41
Erynnis tages	Dingy Skipper	S41, GB RDB(VU)
Erynnis tages tages	Dingy Skipper	S41, GB RDB(VU)
Eugnorisma glareosa	Autumnal Rustic	S41
Eulithis mellinata	Spinach	S41
Euxoa nigricans	Garden Dart	S41
Euxoa tritici	White-line Dart	S41
Graphiphora augur	Double Dart	S41
Hadena albimacula	White Spot	S41
Helotropha leucostigma	Crescent	S41
Hemaris tityus	Narrow-bordered Bee Hawk-moth	S41
Hemistola chrysoprasaria	Small Emerald	S41
Hepialus humuli	Ghost Moth	S41
Hoplodrina blanda	Rustic	S41
Hydraecia micacea	Rosy Rustic	S41
Lasiommata megera	Wall	S41
Lasius brunneus	Brown Tree Ant	Notable:A
Leucania comma	Shoulder-striped Wainscot	S41
Limenitis camilla	White Admiral	S41, GB RDB(VU)
Litoligia literosa	Rosy Minor	S41
Lucanus cervus	Stag Beetle	WCA5, S41, NS, Notable:B
Lycia hirtaria	Brindled Beauty	S41
Macaria wauaria	V-moth	S41
Malachius aeneus	Scarlet Malachite Beetle	S41
Malacosoma neustria	Lackey	S41
Melanchra persicariae	Dot Moth	S41
Melanthia procellata	Pretty Chalk Carpet	S41
Orthosia gracilis	Powdered Quaker	S41
Pechipogo strigilata	Common Fan-foot	S41
Pelurga comitata	Dark Spinach	S41
Perizoma albulata	Grass Rivulet	S41

Pexicopia malvella	Hollyhock Seed Moth	Notable:B
Polia bombycina	Pale Shining Brown	S41
Prionus coriarius	Tanner Beetle	Notable:A
Pyrgus malvae	Grizzled Skipper	S41, GB RDB(VU)
Rheumaptera hastata	Argent & Sable	S41
Rhizedra lutosa	Large Wainscot	S41
Satyrium w-album	White-letter Hairstreak	WCA5, S41, GB RDB(EN)
Schoenobius gigantella	Giant Water-veneer	Notable:B
Scotopteryx chenopodiata	Shaded Broad-bar	S41
Sideridis reticulata	Bordered Gothic	S41
Solva marginata	Drab Wood-soldierfly	NS, Notable
Spilosoma lubricipeda	White Ermine	S41
Spilosoma lutea	Buff Ermine	S41
Tholera cespitis	Hedge Rustic	S41
Tholera decimalis	Feathered Gothic	S41
Timandra comae	Blood-vein	S41
Tyria jacobaeae	Cinnabar	S41
Tyta luctuosa	Four-spotted	S41
Watsonalla binaria	Oak Hook-tip	S41
Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	S41
Xestia castanea	Neglected Rustic	S41
Mammals		
Erinaceus europaeus	West European Hedgehog	S41, GB RDB(VU)
Lepus europaeus	Brown Hare	S41
Micromys minutus	Harvest Mouse	S41
Plants		
Adonis annua	Pheasant's-eye	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Allium oleraceum	Field Garlic	GB RDB(VU)
Anacamptis morio	Green-winged Orchid	GB RDB(VU), ENG BSBI RDB(VU)
Anaptychia ciliaris subsp. ciliaris	Eagle's Claws	S41, GB RDB(EN), NS
Anthemis arvensis	Corn Chamomile	GB RDB(EN), ENG BSBI RDB(EN)
Anthemis cotula	Stinking Chamomile	GB RDB(VU), ENG BSBI RDB(VU)
Arabis glabra	Tower Mustard	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Baldellia ranunculoides	Lesser Water-plantain	GB RDB(VU), ENG BSBI RDB(VU)
Brassica oleracea	Wild Cabbage	NS
Bromus hordeaceus subsp. thominei	Sand Soft-brome	NS
Bromus secalinus	Rye Brome	NS
Bupleurum rotundifolium	Thorow-wax	S41, GB RDB(CR), ENG BSBI RDB(CR), NR
Buxus sempervirens	Box	NR
Camelina sativa	Gold-of-pleasure	NS
Cardamine bulbifera	Coralroot Bittercress	NS
Cardamine impatiens	Narrow-leaved Bitter-cress	NS
Carex appropinquata	Fibrous Tussock-sedge	NS
Carum carvi	Caraway	S41, GB RDB(CR), ENG BSBI RDB(CR), NS
Centunculus minimus	Chaffweed	GB RDB(EN), ENG BSBI RDB(EN)
Cephalanthera damasonium	White Helleborine	S41, GB RDB(VU), ENG BSBI RDB(VU)

Chamaemelum nobile	Chamomile	S41, GB RDB(VU), ENG BSBI RDB(VU)
Chenopodium bonus-henricus	Good-King-Henry	GB RDB(VU), ENG BSBI RDB(VU)
Chenopodium glaucum	Oak-leaved Goosefoot	GB RDB(VU), ENG BSBI RDB(VU), NS
Chenopodium murale	Nettle-leaved Goosefoot	GB RDB(EN), ENG BSBI RDB(EN)
Cicuta virosa	Cowbane	NS
Clinopodium acinos	Basil Thyme	S41, GB RDB(VU), ENG BSBI RDB(VU)
Clinopodium calamintha	Lesser Calamint	NS
Coeloglossum viride	Frog Orchid	S41, GB RDB(VU), ENG BSBI RDB(VU)
Cyperus longus	Galingale	NS
Dianthus deltoides	Maiden Pink	GB RDB(VU), ENG BSBI RDB(VU), NS
Draba muralis	Wall Whitlowgrass	NS
Dryopteris cristata	Crested Buckler-fern	S41, GB RDB(EN), ENG BSBI RDB(EN), NR
Euphorbia exigua	Dwarf Spurge	GB RDB(VU), ENG BSBI RDB(VU)
Euphrasia officinalis subsp. anglica	English Sticky Eyebright	S41, GB RDB(EN), ENG BSBI RDB(EN)
Fritillaria meleagris	Fritillary	NS
Fumaria purpurea	Purple Ramping-fumitory	S41, GB RDB(VU), ENG BSBI RDB(VU), NS
Galeopsis angustifolia	Red Hemp-nettle	S41, GB RDB(CR), ENG BSBI RDB(CR), NS
Galeopsis speciosa	Large-flowered Hemp-nettle	GB RDB(VU), ENG BSBI RDB(VU)
Galium tricornutum	Corn Cleavers	S41, GB RDB(CR), ENG BSBI RDB(CR), NR
Genista anglica	Petty Whin	GB RDB(VU), ENG BSBI RDB(VU)
Gentianella germanica	Chiltern Gentian	GB RDB(VU), ENG BSBI RDB(VU), NS
Glebionis segetum	Corn Marigold	GB RDB(VU), ENG BSBI RDB(VU)
Gnaphalium sylvaticum	Heath Cudweed	GB RDB(EN), ENG BSBI RDB(EN)
Groenlandia densa	Opposite-leaved Pondweed	GB RDB(VU), ENG BSBI RDB(VU)
Helleborus foetidus	Stinking Hellebore	NS
Hieracium diaphanum	Dark-leaved Hawkweed	NR
Hieracium virgultorum	Long-leaved Hawkweed	NR
Hordelymus europaeus	Wood Barley	NS
Hyacinthoides non-scripta	Bluebell	WCA8
Hydrocharis morsus-ranae	Frogbit	GB RDB(VU), ENG BSBI RDB(VU)
Hyoscyamus niger	Henbane	GB RDB(VU), ENG BSBI RDB(VU)
Iberis amara	Wild Candytuft	S41, GB RDB(VU), ENG BSBI RDB(VU), NS
Isatis tinctoria	Woad	NS
Lathyrus aphaca	Yellow Vetchling	GB RDB(VU), ENG BSBI RDB(VU), NS
Lepidium latifolium	Dittander	NS
Lithospermum arvense	Field Gromwell	GB RDB(EN), ENG BSBI RDB(EN)
Lolium temulentum	Darnel	S41, GB RDB(CR), ENG BSBI RDB(CR), NR
Lycopodium clavatum	Stag's-horn Clubmoss	GB RDB(VU), ENG BSBI RDB(VU)
Marrubium vulgare	White Horehound	NS
Meconopsis cambrica	Welsh Poppy	NS
Medicago polymorpha	Toothed Medick	NS
Medicago sativa subsp. falcata	Sickle Medick	NS
Mespilus germanica	Medlar	NS
Minuartia hybrida	Fine-leaved Sandwort	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Myosurus minimus	Mousetail	GB RDB(VU), ENG BSBI RDB(VU)

Myriophyllum verticillatum	Whorled Water-milfoil	GB RDB(VU)
Neottia nidus-avis	Bird's-nest Orchid	GB RDB(VU), ENG BSBI RDB(VU)
Nepeta cataria	Cat-mint	GB RDB(VU), ENG BSBI RDB(VU)
Oenanthe fistulosa	Tubular Water-dropwort	S41, GB RDB(VU), ENG BSBI RDB(VU)
Onobrychis viciifolia	Sainfoin	GB RDB(VU), ENG BSBI RDB(VU)
Ophrys insectifera	Fly Orchid	S41, GB RDB(VU), ENG BSBI RDB(VU)
Papaver argemone	Prickly Poppy	GB RDB(EN), ENG BSBI RDB(EN)
Persicaria mitis	Tasteless Water-pepper	GB RDB(VU), ENG BSBI RDB(VU), NS
Platanthera bifolia	Lesser Butterfly-orchid	S41, GB RDB(EN), ENG BSBI RDB(EN)
Polygonatum odoratum	Angular Solomon's-seal	NS
Polypogon monspeliensis	Annual Beard-grass	NS
Ranunculus arvensis	Corn Buttercup	S41, GB RDB(CR), ENG BSBI RDB(EN)
Ranunculus flammula	Lesser Spearwort	GB RDB(VU), ENG BSBI RDB(VU)
Riccia rhenana	Pond Crystalwort	NR
Rubus britannicus	A Flowering Plant	NR
Rubus pliocenicus	A Flowering Plant	NR
Scandix pecten-veneris	Shepherd's-needle	S41, GB RDB(CR), ENG BSBI RDB(EN)
Scleranthus annuus	Annual Knawel	S41, GB RDB(EN), ENG BSBI RDB(EN)
Sedum forsterianum	Rock Stonecrop	NS
Silene gallica	Small-flowered Catchfly	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Silene noctiflora	Night-flowering Catchfly	GB RDB(VU), ENG BSBI RDB(VU)
Sium latifolium	Greater Water-parsnip	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Sorbus domestica	Service-tree	GB RDB(CR), ENG BSBI RDB(CR), NR
Spergula arvensis	Corn Spurrey	GB RDB(VU), ENG BSBI RDB(VU)
Sphaerocarpos texanus	Texas Balloonwort	S41
Stellaria palustris	Marsh Stitchwort	S41, GB RDB(VU), ENG BSBI RDB(VU)
Stigmidium hageniae	Stigmidium hageniae	NR
Stratiotes aloides	Water-soldier	NR
Tilia platyphyllos	Large-leaved Lime	NS
Torilis arvensis	Spreading Hedge-parsley	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Trifolium fragiferum	Strawberry Clover	GB RDB(VU), ENG BSBI RDB(VU)
Valerianella rimosa	Broad-fruited Cornsalad	S41, GB RDB(EN), ENG BSBI RDB(EN), NS
Vicia lutea	Yellow-vetch	GB RDB(VU), ENG BSBI RDB(VU), NS
Vicia parviflora	Slender Tare	GB RDB(VU), ENG BSBI RDB(VU), NS
Viola canina	Heath Dog-violet	GB RDB(VU), ENG BSBI RDB(VU)
Viola canina subsp. canina	A Flowering Plant	GB RDB(VU), ENG BSBI RDB(VU)

APPENDIX C – ABBREVIATIONS

Table 7: **Glossary of abbreviations used in this report.** displays abbreviations of protected species legislation.

Table 7: Glossary of abbreviations used in this report.

Code	Full Title	Explanation
Amber	Amber list	Amber listed species have a population status in the UK of medium conservation concern.
BAP	Biodiversity action plan	A plan that identifies threats to significantly important species and habitats, and sets out targets and actions to enhance or maintain biodiversity.
ENG BSBI RDB	A Vascular Plant Red List for England	A list published in 2014 by the Botanical Society of Britain and Ireland of the red list status of plants in England. Measured against standardised IUCN criteria.
ENG BSBI RDB(CR)	Critically endangered	A BSBI Red List designation for species at an extremely high risk of extinction.
ENG BSBI RDB(EN)	Endangered	A BSBI Red List designation for species at a very high risk of extinction.
ENG BSBI RDB(VU)	Vulnerable	A BSBI Red List designation for species at high risk of extinction.
EPS (Sch 2)	European protected species (Schedule 2)	European protected species of animals, listed on Schedule 2 of The Conservation of Habitats and Species Regulations 2017.
EPS (Sch 5)	European protected species (Schedule 5)	European protected species of plants, listed on Schedule 5 of The Conservation of Habitats and Species Regulations 2017.
GB RDB	Red data book species	Species identified in one of the UK Red Data 2001.
GB RDB(CR)	Critically endangered	An IUCN Red List designation for species at an extremely high risk of extinction.
GB RDB(EN)	Endangered	An IUCN Red List designation for species at a very high risk of extinction.
GB RDB(VU)	Vulnerable	An IUCN Red List designation for species at high risk of extinction.
HAP	Habitat action plan	A plan that identifies threats to a priority habitat and sets out targets and actions to enhance or maintain that habitat.
IUCN	International Union for Conservation of Nature and Natural Resources	A worldwide partnership and conservation network to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.
LBAP	Local biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in Species Action Plans and Habitat Action Plans to enhance or maintain biodiversity at the county or regional level.
Notable	Scarce and threatened invertebrates	Invertebrate species which are estimated to occur within the range of 16 to 100 10km squares but subdivision into Notable A and Notable B categories is not possible as there is insufficient information available).
Notable: A	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties.
Notable: B	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties.
NN	Nationally notable	Designation for invertebrate taxa that are thought to be notably important in the UK.
NR	Nationally rare	Species in 15 or fewer hectads in Great Britain.
NS	National scarce	Species in 16-100 hectads in Great Britain.
Red	Red list	Red listed species have a population status in the UK with high conservation concern.

Code	Full Title	Explanation
SAP	Species action plan	A plan that identifies threats to significantly important species, and sets out targets and actions to prevent losing that species to extinction.
S41	Species of principal importance	Species of Principal Importance in England under The Natural Environment and Rural Communities (NERC) Act (2006)
UKBAP	UK biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in species action plans and habitat action plans to enhance or maintain biodiversity in the UK.
WCA	The Wildlife and Countryside Act 1981 (as amended)	Containing 4 Parts and 17 Schedules, the Act covers protection of wildlife (birds, and some animals and plants), the countryside, National Parks, and the designation of protected areas, and public rights of way. All wild plants in Britain are protected from intentional uprooting by an unauthorized person, but land owners, land occupiers, persons authorized by either of these or persons authorized in writing by the local authority for the area are exempt. Protection for some species may be limited to certain Sections of the Act (*e.g.* S13(2).
WCA1	Schedule 1 of The Wildlife and Countryside Act 1981 (as amended)	This Schedule lists birds protected by special penalties at all times, but virtually all wild birds have some protection in law. Acts which are prohibited for all wild birds (except derogated 'pest' species) include intentional killing, injuring or taking; taking, damaging or destroying nests in use or being built; taking or destroying eggs; possessing or having control of (with certain exceptions but including live for dead birds, parts or derivative); setting or permitting certain traps, weapons, decoys or poisons. Selling, offering or exposing for sale, possessing or transporting for sale any live wild bird, egg or part of an egg or advertising any of these for sale, or dead wild bird including parts or derivatives are also prohibited. Many birds must be formally registered and ringed if kept in captivity. Schedule I WCA birds are additionally protected from intentional or reckless disturbance while building a nest, or when such a bird is in, on or near a nest containing eggs or young, or intentional or reckless disturbance of dependent young.
WCA5	Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	Schedule 5 animals are protected from intentional killing, injuring or taking; possessing (including parts or derivatives); intentional or reckless damage, destruction or obstruction of any structure or place used for shelter or protection; selling, offering or exposing for sale, possessing or transporting for the purpose of sale (alive or dead, including parts or derivatives). Protection of some species is limited to certain Sections of the Act (*e.g.* S9(1), S9(4a), S9(4b), S9(5)).
WCA8	Schedule 8 of The Wildlife and Countryside Act 1981 (as amended)	Plants and fungi protected from intentional picking, uprooting, destroying, trading (including parts or derivatives), *etc*.

APPENDIX D – TARGET NOTES

The locations of the following target notes are shown in *Table 8*: **target notes with descriptions.**

Table 8: target notes with descriptions.

Target Note	Description
T1	A tree with high potential for roosting bats, northwest of the red-line boundary.
T2	A run-off ditch extends between these points.
T3	A building with potential for roosting bats.
T4	A building with potential for roosting bats.
T5	A building with potential for roosting bats.
T6	A building with potential for roosting bats.

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Registered office
Spring Lodge, 172, Chester Road, Helsby, Frodsham, England, WA6 0AR, UK
Registered in England No. 04364279
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