

Preliminary Ecological Appraisal (PEA)

of

Mollands Hall,
Forward Green,
Stowmarket,
IP14 5HP

For

Tim Carrington

June 2023



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The authors and surveyors used to undertake the work are appropriately qualified for the tasks undertaken. The work undertaken while preparing this report has been carried out with due care, skill, and diligence.

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1. Executive Summary

1.1 Overview

DCS Ecology Ltd was commissioned by Tim Carrington, to carry out a Preliminary Ecological Appraisal (PEA), for an application for erection of single-storey rear extension; reopening of former doorway link to building at Mollands Hall, Forward Green, Stowmarket, Suffolk IP14 5HP (central grid reference TM 09474 59627, hereby referred to as the Site).

The site is less than 0.01ha (100 square metres) of a patio area adjacent to the main hall. This is situated near the village of Forward Green, Suffolk, which lies 460m Northeast of the hall (see Site description).

The preliminary ecological appraisal was carried out on the 28th of June 2023 by Duncan Sweeting, and Lizzie Thurston of DCS Ecology Ltd, to assess the ecological value of the Site.

1.2 Results

The desk study found two country wildlife sites:

- Bats
- Birds
- Amphibians (including great crested newts)
- Hedgehogs
- Other mammals- brown hares, otters, harvest mouse, badgers, and water voles
- Several protected plants and invertebrates of note

The habitats recorded onsite included hardstanding in the form of a patio area, with three raised planters containing privet. Adjacent habitats included the main hall, well maintained hornbeam hedges, a small herb garden containing rosemary and thyme, a yew hedge, semi-improved grassland that was mowed short and two ponds. Adjacent to the hall approximately 50m to the northwest is an area of mature woodland with species such as oak (*Quercus robur*). Mature oaks often have features such as knotholes and tear outs that provide good roost potential for bats.

The habitats listed above, and features recorded within the site provide potential habitat for breeding birds, bats, and small mammals. The site was within 250m of suitable habitat for great crested newts and sub-optimal suitable habitat for reptiles such as grass snakes.

2. Background to Commission

2.1 Overview

DCS Ecology Ltd was commissioned by Tim Carrington to carry out a Preliminary Ecological Appraisal (PEA), for an extension at Mollands Hall, Forward Green, Stowmarket, IP14 5HP (central grid reference TM 09474 59627, hereby referred to as the Site). Planning application DC/23/02506.

2.2 Aims of Study

This report provides an ecological appraisal and roost assessment of the Site following the completion of a desk study and site visit. The aim of this study was to:

- Provide a description of existing habitat types;
- To determine the existence and location of any ecologically valuable areas;
- To identify the potential (or actual) presence of protected and/or notable species;
- To provide the legislative and/or policy protection afforded to any habitats present, or any species assessed as likely to be associated with the site; and
- To recommend any further ecological surveys considered necessary to inform mitigation requirements for the application within the Site.

2.3 Site Description

The site is less than 0.01ha (100 square metres) of a patio area directly adjacent to the main hall. This is situated near the village of Forward Green, Suffolk, which lies 460m Northeast of the hall (see figure 1). Within the site boundary there are no habitats of ecological importance however adjacent habitats including two ponds have the potential to support protected species.

The site consisted of a patio area within the curtilage of Mollands Hall, Forward Green, Stowmarket. The patio area contained three raised planters containing privet. Directly adjacent to site were hornbeam hedges, a yew hedge, a small area of roses (see species list in appendix III). Three ponds exist within 250m of site and at least one has a GCN (larvae seen during survey). HSIs and descriptions of these ponds can be found in section 5.

Beyond the site, the wider countryside consisted predominately of arable fields, semi-improved grassland, and woodland. To the northeast of site this is lineated by sparse hedgerows with the occasional trees that offered commuting networks for local bat populations.

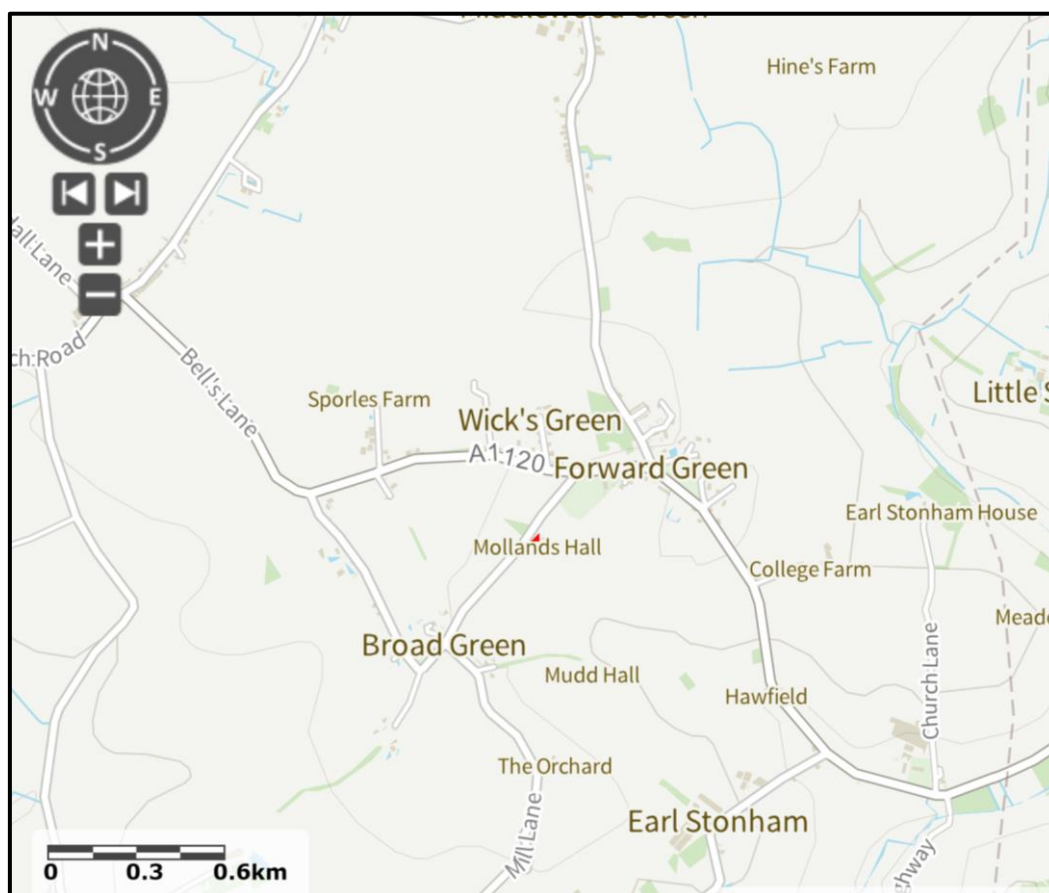


Figure 1. Site location (outlined in red). (1:25000) Based upon Ordnance Survey (c) Crown Copyright under licence 100064616

2.3 Relevant Legislation

Protected species, as referred to within this report, are taken to be those protected under European Legislation (Conservation of Habitats and Species Regulations 2010, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992); and those of principle importance in England as listed in Section 41 of the NERC Act (2006).

The National Planning Policy Framework (NPPF) July 2021 places responsibility on Local Planning Authorities (LPAs) to aim to conserve and enhance biodiversity in and around developments. Section 40 of the NERC Act requires every public body to “have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. Biodiversity, as covered by the Section 40 duty, is not confined to habitats and species of principal importance but refers to all species and habitats. However, the expectation is that public bodies would refer to the Section 41 list (of species and habitats) through compliance with the Section 40 duty.

Appendix VI details legislation which protects species and groups relevant to the site (bats, reptiles, birds, and great crested newts).

3. Methods

3.1 *Desk Study*

Data obtained from the Suffolk (SBIS) was used to conduct a cross-county standard data search¹, for any information regarding statutory and non-statutory sites, ancient-veteran-notable trees, and records of protected and priority species within a 2km radius of the Site. The data was received on the 30th of June 2023.

A 7km radius search for European Designated Sites, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar's was undertaken using MAGIC (<http://www.natureonthemap.naturalengland.org.uk/>). Past and current EPS licences and GCN pond survey results within a 7km radius were searched for using MAGIC on 29th June 2023.

3.2 *Field Survey*

A Preliminary Ecological Appraisal was carried out by Duncan Sweeting LCG (Natural England Great Crested Newt Class Survey Licence WML-CL08; Natural England Bat Class Survey Licence WML-CL18, Natural England Barn Owl Survey Licence WML-CLS29) and Lizzie Thurston (undergraduate) on the 27th of June 2023 in accordance with standard best practice methodology for Phase 1 Habitat Surveys set out by the JNCC (JNCC 2010). Weather conditions during the survey was cloudy (90% cloud cover), light air (Beaufort scale 1 to 1.5) and a temperature of 21°C, with excellent visibility. The Site was traversed slowly by the surveyor, mapping habitats, and making notes on dominant flora and fauna within the site. The survey was extended to identify the presence of invasive species and included an assessment of the potential for the habitats in and around the site to support protected species.

3.3 *Survey Limitations*

No survey limitations were noted.

¹ The standard data search identifies designated sites including:- Ramsar; Special Areas of Conservation; Special Protection Areas; Sites of Special Scientific Interest; National Nature Reserves; Local Nature Reserves; County Wildlife Sites; Regionally Important Geological Sites; Ancient Woodland; and protected and priority species identified by the:- Wildlife & Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats & Species Regulations 2010 Schedules 2 & 5; Protection of Badgers Act 1992; Bonn Convention Appendix 1 & 2; Bern Convention Annex 1 & 2; Birds Directive Annex 1; Habitats Directive Annex 2, 4 & 5; NERC Act 2006 Section 41; UKBAP (both local and national); IUCN Red List species; Red & Amber Bird List; Nationally Scarce / Rare; Locally Scarce / Rare; and Veteran trees.

4. Results

The following section details the results of the desk study and field survey. Consideration has been given to species likely to be found in the habitats recorded on site and potential impacts to designated sites within the local area. Several protected species have been ‘scoped out’ of the report, as the Site was not considered suitable to support them. Species scoped out were water voles, otters, and dormice.

Maps illustrating the following data are included in Appendix IV.

4.1 Data search

The data search showed records of protected species in the area, which could potentially occur on the Site. These are detailed within the relevant sections below (section 5).

4.2 Designated sites data

The data search produced the following results:

In regard to Local/National European site, there are two County Wildlife Sites Citations, and no SSSI/SAC within 2km of the Site. These are:

- FORROLD MEADOW - Forrold Meadow is a species-rich grassland (Priority habitat) and contains a good assemblage of meadow flora including oxeye daisy, common knapweed, yellow rattle, meadow buttercup, bird's-foot-trefoil, primrose, yellow oat grass, common spotted orchid, pyramidal orchid and pepper saxifrage. Species such as ragged-Robin and southern marsh orchid can be found in the wetter parts of the meadow. The grassland supports a wealth of invertebrates and offers refuge for small mammals. Priority species hedgehog is recorded here. The ancient hedgerow and two ponds (one of which has been more recently created) provide further structural diversity and habitat opportunities for wildlife including Priority species stag beetle, great crested newt, grass snake, dunnock, house sparrow and starling. Spotted flycatcher, turtle dove and lesser-spotted woodpecker have also previously been recorded.
- RNR 70 - Yellow Vetchling & Pyramidal Orchids. This site is also a Roadside Nature Reserve.
-

4.3 MAGIC Map Data

Table 1: MAGIC map system EPS licence applications within a 7km radius (see map in Appendix IV)					
Case reference of granted application	Species on the licence	Damage/ destruction of breeding site	Damage/ destruction of a resting place	Grid Ref	Nearest Location
2016-25709-EPS-MIT	C-PIP,S-PIP	N	Y	TM09395402	Needham Market
EPSM2009-611	Great Crested Newt	N	Y	TM12395339	Coddenham
2018-38218-EPS-MIT-2	Great Crested Newt	N	Y	TM02975941	Stowmarket
2019-39654-EPS-MIT	C-PIP,S-PIP	N	Y	TM09996170	Middlewood Green
2019-41034-EPS-MIT	BARB,BLE,C-PIP,S-PIP	N	Y	TM11795541	Coddenham Green
2019-42716-EPS-MIT	Great Crested Newt	N	N	TM02975941	Stowmarket

The MAGIC data search returned 6 records of past and current EPS licences 3 were for great crested newts and 3 were for bats within a 7km radius, including common pipistrelle, soprano pipistrelle, brown long-eared, and Barbastelle. The nearest record to site was an EPS licence record (2019-39654-EPS-MIT) 2km to the north of site for the destruction of common and soprano pipistrelle resting place. There was 21 GCN class licence returns at 6 locations and 6 GCN pond surveys between 2017 and 2019 with 3 out of the 6 having GCN present.

SBIS (2 km radius)

Table 2. Ancient, notable, and veteran trees within a 2 km radius of the Site.

Species	Distance from site (km)
Pedunculate Oak (<i>Quercus robur</i>)	0.85
Pedunculate Oak (<i>Quercus robur</i>)	0.88
Walnut (<i>Juglans regia</i>)	1.94
Holly (<i>Ilex aquifolium</i>)	1.68
Field Maple (<i>Acer campestre</i>)	1.42
Pedunculate Oak (<i>Quercus robur</i>)	1.51
Pedunculate Oak (<i>Quercus robur</i>)	1.06
Pedunculate Oak (<i>Quercus robur</i>)	1.08
Poplar (<i>Populus</i>)	1.63
Pedunculate Oak (<i>Quercus robur</i>)	1.95
Elm (<i>Ulmus</i>)	1.89
Elm (<i>Ulmus</i>)	1.88
Elm (<i>Ulmus</i>)	1.83
Pedunculate Oak (<i>Quercus robur</i>)	1.82

Ancient trees, due to decay and biological damage from age, typically have more natural features (such as welds, trunk cavities, hollows, rot holes, bark crevices, cracks, fissures, and woodpecker holes) that could provide highly preferable roosting opportunities for bats. Most of these trees are over 1km away from site.

4.4 **Field Survey Results**

The site consisted of a patio area within the curtilage of Mollands Hall, Forward Green, Stowmarket. The patio area contained three raised planters containing privet these were searched for active bird nests and none were found. Adjacent habitats were found to support protected species. More details of building specifications and target notes can be found in appendix I. The surrounding area was predominately arable fields with areas of semi-improved grassland and woodland (both mature and plantation).

Plant species within the site boundary were limited with only planters containing privet (please see Appendix III for full plant list of species found in adjacent habitats). A map showing the habitat types on Site can be seen in Appendix IV.

5. **Protected and Priority Species Within the Site**

Flora

The desk study highlighted several species of rare plants have been previously recorded within 2km of the site, such as Corn Marigold (*Glebionis segetum*), Yellow Vetchling (*Lathyrus aphaca*), Strawberry Clover (*Trifolium fragiferum*), Sulphur Clover (*Trifolium ochroleucon*), Slender Tare (*Vicia parviflora*) and Heath Dog-violet (*Viola canina*), which are listed as 'Vulnerable' on the England Red List. Orchid species were highlighted within the search, including Common spotted orchid (*Dactylorhiza fuchsia*), Pyramidal Orchid (*Anacamptis pyramidalis*) and Southern Marsh-orchid (*Dactylorhiza praetermissa*).

No uncommon, rare, or protected plant species were recorded during the survey.

Badgers

The site was visually searched for evidence of the presence of badgers (*Meles meles*), including setts, footprints, latrines, and snuffle marks.

Two records of badgers were recorded within the 2km data search from SBIS the closest of which was 1.8km from site. Habitats within the site were unsuitable for foraging badgers and no signs were found to suggest badgers use the site. However adjacent habitats were suitable for foraging badgers, but the size and impact of the extension makes it unlikely the proposed development would have any impact on local badger populations. The wider countryside consisting of fields used for arable crops and a small area of mature trees could potentially be used by foraging badgers, but it is unlikely that badgers will access site.

Bats

The site was checked for signs of bats which included, urine stains, droppings, cracks and crevices with smooth rubbing or stain marks, feeding signs or living or dead animals. Any potential roost features were noted and are discussed below.

The building the extension will connect to is a grade II listed building listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest. The building's construction and overall description of habitats can be seen in the target notes table in Appendix I.

Trees were present adjacent to site that included oak (*Quercus robur*) and three ponds within 250m of site offered good foraging opportunities for nearby bats however development plans do not include changes or impacts to any of these habitats.

The data search returned ten records within 2km of the Site, comprising at least 3 of the 13 bat species known to Suffolk. These included Serotine (*Eptesicus serotinus*), Common Pipistrelle (*Pipistrellus pipistrellus*), Noctule Bat (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), and unidentified Bat (*Chiroptera*) and pipistrelle (*Pipistrellus*) species. The closest record was a record of pipistrelle droppings found 360m northeast of site.

Fungi

No records of fungi were listed in the data search, and no rare fungi were found on site.

Great Crested Newts

No habitats on the site were suitable to support amphibians, including great crested newts (GCN) (*Triturus cristatus*), during their terrestrial phase. However, adjacent habitats such as ponds were suitable to support GCN but habitats between site and these ponds consisted of semi-improved grassland/ bare earth and newts attempting to travel to these areas from nearby ponds would be exposed to predation. Areas to the northeast of site provided more suitable habitats for GCN and therefore they are unlikely to be present on site.

There were three ponds present within a 250m radius of site:

- Pond 1- Located approx. 28m to the north of site. Was a small pond in the middle of semi-improved grassland, and it was 70 m². The margins of the pond were steep sides boarded approximately 18inches above water level with wooden slats. These slats extended below water level. There was an area of sloped bank on the northeast margin under the deck area that could allow access and egress of species such as GCN. Vegetation within the pond consisted of species such as waterlilies (*Nymphaeaceae*), foals water cress (*Apium nodiflorum*), bulrush spp (*Scirpus spp*) and rosebay willow herb (*Chamaenerion angustifolium*). Floating vegetation was also prevalent in areas of the pond mainly by duck weed (*Lemna minor*) and blanket weed (*Filamentous algae*). Animal species within the pond noted include common frog (*Rana temporaria*), toads (*Bufo bufo*) including tadpoles of both species. Smooth newts (*Lissotriton vulgaris*) were also seen during the survey. This pond will have negligible impact to the site as the pond has more suitable habitat adjacent for species such as GCN. Between site and the pond is dry open semi-improved grassland and hardstanding which increases chances of predation.
- Pond 2- Located approx. 55m to the northeast of site and 330 m². The ponds margins consist of natural sloped vegetated edges. The pond was largely dominated by bulrush spp (*Scirpus spp*) but did include waterlilies (*Nymphaeaceae*), foals water cress (*Apium nodiflorum*), and water mint (*Mentha aquatica*). Along with species found within pond 1 there was a GCN larvae seen within pond 2. This development has a negligible impact to pond 2 due to the size of the development and to the east of the pond is good GCN habitat therefore it is unlikely GCN will travel to site. This is also due to the fact between site and the pond is dry open semi-improved grassland and hardstanding including a pea shingle driveway and parking area which isn't suitable GCN habitat.
- Pond 3- located 160m to the east of site approximately 350m². No HSI was completed on this pond due to no access on the day of survey. Habitats between site and pond 3 include arable fields and areas of hardstanding.

Table 2: The categorisation of the HIS score, is as follows:

HIS Score	Pond Suitability
< 0.50	Poor
0.50 - 0.59	Below average
0.60 - 0.69	Average
0.70 - 0.79	Good
> 0.80	Excellent

Table 3: ARGUK GCN HSI Calculator. Based on ARGUK advice note 5 - Great Crested Newt Habitat Suitability Index

ARGUK GCN HSI Calculator				
	Pond Name	Example	pond 1	pond 2
	Grid Ref	SK123456	TM 09473 59652	TM 09520 59664
SI No	SI Description	SI Value	SI Value	SI Value
1	Geographic location	1.00	1	1
2	Pond area	0.50	0.1	0.6
3	Pond permanence	0.90	0.9	0.9
4	Water quality	1.00	1	1
5	Shade	1.00	1	1
6	Water fowl effect	1.00	1	1
7	Fish presence	1.00	1	1
8	Pond Density	0.65	1	1
9	Terrestrial habitat	1.00	0.33	0.67
10	Macrophyte cover	0.90	0.95	1
HSI Score		0.88	0.70	0.90
Pond suitability (see below)		Excellent	Good	Excellent

Table 4: GOV GCN Risk Calculator. Based on GOV.UK - Great Crested Newt method statement for ESP license application

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.001 - 0.01 ha lost or damaged	0.05
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.05
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

There were two records of GCN returned in the SBIS data search, the nearest being 370m West of site. Although much of the wider landscape was arable, woodland, and semi-improved grassland. The site did not provide optimal habitat for GCN during terrestrial phases and connectivity between site and the location of the closest SBIS record was poor and GCN would be exposed to predation.

Hedgehogs

The Site was considered unsuitable for hedgehogs, as it had no adequate foraging and hibernation opportunities, such as shrubs, woodpiles, and woodland. However, adjacent habitats including hedgerows, shrubs and woodland provided some potential to support foraging and nesting opportunities. The data search returned 49 records of hedgehog within 2km of the Site, the nearest of which being 135m northeast of site.

Reptiles

The habitat onsite was unsuitable for foraging reptiles. However, ponds and grassland in adjacent habitats had the potential for foraging and basking reptiles.

There was no evidence of reptiles on the site, no droppings, sloughs or reptiles.

There were no reptile species recorded within 2km SBIS data search.

Birds

There was only privet within raised planters that could contain nesting birds (searches revealed no active or inactive nests). Adjacent to site, shrubs, trees, and the building structure of the hall containing ledges and spaces were habitats suitable for nesting and roosting birds. Within the rafters of the north elevation of the hall was an active bird nest. (For a list of species seen during the survey see appendix III).

For a list of bird species of conservation concern returned in the SBIS data search, please see Appendix V

Invertebrates

Vegetation to support invertebrates was restricted to privet and habitat with the potential to support small assemblages of common and rare/protected terrestrial invertebrates was negligible. No rare invertebrates or habitats likely to support rare invertebrates were found onsite, and further invertebrate surveys were not considered necessary.

The desk study highlighted a couple species of invertebrates that have been previously recorded within 2km of the Site, such as Small Heath (*Coenonympha pamphilus*) and Stag Beetle (*Lucanus cervus*) listed under section 41 of the Natural Environment and Rural Communities Act 2006 as species of principle importance for conservation of biodiversity.

Other Protected Species

In regard to other protected species, there were two records of water vole and one record of otters, the nearest of which was an otter and water vole record approximately 1.6km Southeast of site. Three records of Brown Hare and thirteen records of harvest mouse (*Micromys minutus*) were returned within the data search. Habitats onsite are unsuitable for these species, although the site had open access to fields, ponds, and trees that may offer habitat for brown hares.

6. Potential Impacts and Obligatory Recommendations

6.1 *Statutory Designated Areas*

The impact of proposed activities on Sites of Special Scientific Interest (SSSIs) are assessed using Impact Risk Zones (IRZs), which establish buffer zones around each site which reflect the particular sensitivities of designated sites and indicate the types of development proposal which could potentially have adverse impacts. If the developed is assessed as having a “likely significant effect” any European statutory designated area, then the project will require a HRA (Habitat Risk Assessment) to be undertaken as stated in The Conservation of Habitats and Species Regulations 2010 (as amended).

The Site falls within the Impact Risk Zone (IRZ) of two SSSI, however as the proposal is a small-scale development and it will not include the creation of over 50 building units, the risk of impact to designated sites is negligible and therefore is unlikely to require a HRA or other pre-development consultation with Natural England regarding likely impacts on designated areas.

6.2 *Flora and Habitats*

The proposed development includes the single-story extension of a grade II listed building. This will not result in the loss of existing niches within the structures but may result in the removal of a minimal amount of vegetation. (a list plant species recorded onsite can be found in Appendix III). There are rare species that have the potential to use these habitats, the habitats themselves are not listed within the Section 41 of the NERC Act 2006 as being of principle important to the conservation of biodiversity within the UK.

The majority of the species highlighted within the data search were six figure grid references. The Site does not contain biodiversity priority habitats and was unsuitable for supporting these rare species.

If site boundaries were altered to include mature trees subject to felling, then under The Forestry Act 1967, all trees over 8cm in diameter will require a felling licence prior to removal, unless it is in the interest of health and safety. This is required if over 5 cubic metres (m³) of growing trees are to be felled.

Further botanical survey is not considered necessary; however, any mature trees within close proximity of the Site should be suitably protected from harm following guidance set out in BS5837 (2012).

6.3 *Protected Species*

Badgers

Habitats adjacent to the Site were considered suitable for badger foraging; however, no badger signs were observed during this survey, and the data search had two records of badgers within 2km. the closest of which was 1.7km north of site.

No further survey is necessary; however, as adjacent habitats to Site provide suitable foraging habitat for smaller mammals, and hedgehogs have been recorded in the local

area, construction works should have implemented several precautionary measures, including the following:

- Covering excavations overnight to prevent animals falling in, or the provision of an escape ramp;
- Safe storage of materials that may harm animals; and
- Security lighting to be set on short timers to avoid disturbing nocturnal animals using the Site and immediate surrounding area.

Bats

Structures onsite assessed for roost suitability included the grade II listed building from north and south externals. No signs of bats were found. The extension is single story and will not impact the roof structure of the existing building and therefore impact to potential bat species that could roost within the building is negligible and **no further bat surveys are necessary**. Currently the site contains external led floor lights however the proposed extension doesn't include external lighting therefore no further lighting considerations will be required.

The Site did not have suitable foraging habitats for bats such as deciduous woodland or lowland wetlands, although adjacent habitats, treelines, semi-improved grassland, ponds, woodland, and hedgerows, did offer foraging and commuting opportunities for bats. As these habitats were in close proximity to site, and there are nearby records of three different species of bats, sensitive lighting is recommended throughout the development and should follow guidance provided by the Bat Conservation Trust (Bats and Lighting in the UK, 2009), to ensure foraging and commuting bats using adjacent habitats are not negatively impacted. Lighting measures should also be applied to temporary security lighting used during the construction phase. This could include low pressure sodium lamps, with hoods, cowls or shields, to prevent light spillage. More detailed advice can be provided from a suitable experienced bat ecologist.

Birds

A number of species with the potential to nest within, or near to, the Site boundary were highlighted within the desk study (see Appendices III and V). These included BoCC red listed and section 41 species.

A bird nest was seen within the adjacent building, and gaps in the fixtures and features on the building provided further nesting opportunities. The site was unsuitable for foraging birds due to the lack of vegetation but had suitable foraging opportunities in adjacent habitats.

Any building demolition or clearance should be carried out outside the breeding bird season, which runs from 1st March to 15th September (species dependant) or following a nesting bird survey by a suitably experienced ecologist – to prevent infringing legislation which protects all nesting birds. In addition, the works of stripping / removing any buildings should be done under a Risk Avoidance Measures (RAMs) Method Statement and under the supervision of a suitability experienced ecologist clerk of works.

Great Crested Newts

There was a total of two SBIS records within 2km, and 3 EPS licence records, there were 21 GCN class licence returns at 6 locations and 6 GCN pond surveys between 2017 and 2019 with 3 out of the 6 having GCN present. within 7km. The nearest of these was a class licence returns confirming the presence of GCN 3km west of site. Although the site was unsuitable for GCN due to lack of vegetation cover, nearby habitats, including three ponds, had the potential to support GCN and during the survey pond 2 was seen to have GCN larvae. A risk calculator for GCN was conducted and along with knowledge of habitats in the area and the size of the proposed development it was concluded that impact to GCN populations or individuals is highly unlikely to have a negative impact.

Hedgehogs

Further survey is not considered necessary, however, as there are nearby records of this species, and the adjacent habitats were suitable, any potential nesting habitat (discarded building materials, wood piles etc.) should have been removed outside the hibernation period (which is November to March) or under supervision of an ecologist. In addition, the construction should follow recommendations set out for badgers, to minimise the risk of harm to foraging hedgehogs.

Any fencing that may be added should allow the movement of hedgehogs throughout the Site post development.

Reptiles

The project will not include the loss of small areas of suitable reptile habitat – sheltering and hibernation opportunities. It was considered highly unlikely that reptiles would use these habitats onsite, **and so no further survey is required. However, as reptiles, particularly grass snakes could potentially be using adjacent habitats, it is recommended that any debris or building material removal is undertaken with an ecologist in attendance – to safely move any animals that may be using these habitats.**

Invertebrates

The Site contained little to no habitat for small assemblages of common invertebrates and was not considered suitable for supporting the rare/protected species highlighted within the desk study. **Therefore, further invertebrate surveys are not considered necessary.**

Other Protected Species

No further survey is required, as the habitat types and overall size of each habitat would be unlikely to significantly impacted any protected species.

7. Enhancement recommendations

The Natural Environment and Rural Communities Act 2006 (NERC), Section 40, established that all public bodies have a duty to conserve, restore, or otherwise enhance a population of a particular species or habitat:

Section 40 (A1)²

- “For the purposes of this section “the general biodiversity objective” is the conservation and enhancement of biodiversity in England through the exercise of functions in relation to England.”

Section 40 (1)

- “A public authority which has any functions exercisable in relation to England must from time to time consider what action the authority can properly take, consistently with the proper exercise of its functions, to further the general biodiversity objective.”

Section 40 (3)

- “The action which may be taken by the authority to further the general biodiversity objective includes, in particular, action taken for the purpose of—

(a) conserving, restoring or otherwise enhancing a population of a particular species, and

(b) conserving, restoring or otherwise enhancing a particular type of habitat.”

Therefore, enhancement opportunities are encouraged in order to change the overall net biodiversity impact of the development from minor-adverse neutral to neutral / minor positive.

Bats

A bat box, such as Eco Kent bat boxes and woodstone general purpose bat boxes (or similar) would increase roosting opportunities for bats within the Site. Exact models and locations should be determined by a suitably experienced ecologist.

Birds

Bird boxes are highly advised, such as Robin FSC Nest Box or WoodStone Seville Box (see table 15 in Appendices) erected on boundary trees in appropriate locations would provide additional nesting opportunities for local bird populations.

Precise locations of bird boxes should be decided by a suitably experienced ecologist at the time of erection to ensure an optimal situation and reduce the effect of changing environmental conditions at the Site in the meantime.

Further enhancements (such as providing deadwood, or compost areas) would provide foraging opportunities for a range of bird species.

² This includes recent amendments to the Act under the Environment Act 2021, which extended the definition of general biodiversity objective to include biodiversity enhancement as opposed to solely biodiversity conservation.

Hedgehogs and other small mammals

No evidence of small mammals including hedgehogs was found on site. Although adjacent habitats have the potential to support these species the development will have a negligible impact on surrounding habitats therefore no enhancements are recommended for these species.

Other protected species

Rare and/or protected invertebrates, reptiles and great crested newts were considered unlikely to be present onsite, and no further enhancement is necessary.

8. Conclusions

The preliminary ecological appraisal found the Site to contain minimal habitats suitable for supporting protected species – namely bats and birds, and immediately adjacent habitats with the potential to support small mammals such as hedgehogs. Other adjacent habitats such as ponds could support great crested newts and reptiles mainly grass snakes.

- The following recommendations are made to minimise the risk of harm to individual animals:
- **Sensitive lighting measures for bats**, and security lighting to be set on short timers to avoid disturbing nocturnal animals.
- Covering of excavations and/or provision of exit ramps and safe storage of materials that may harm animals is recommended during works to prevent harm to mammals.
- To prevent infringing legislation which protects all nesting birds, it is recommended that **any building or vegetation clearance is carried out outside the breeding bird season** (which runs from March to September) or if not possible, following a nesting bird survey by a suitably experienced ecologist.
- A toolbox talk for bats, and great crested newts should be written prior to the commencement of works on the building, to prevent harm to relevant species

It is unlikely that the proposed development would cause a significant long-term impact to the conservation status of protected species in the area or to the conservation sites in the surrounding area, but sensitive planning may increase species because of the habitat enhancements.

However, short-term impacts to species populations or individuals would have been minimised through the incorporation of the above recommendation prior to, and during construction.

Biodiversity Enhancements (post construction)

Enhancement features, such as bat boxes (such as Eco Kent bat boxes and bat tubes) and bird boxes, could be incorporated into the final designs and therefore provide additional breeding, and sheltering opportunities for a range of wildlife.

9. Validation

Table 5. Validity duration of the data.

Information Source	Date Undertaken	Valid Until	Comments
PEA	June 2023	June 2025 (2 years)	No further surveys will be required – due to the scale of development and negligible impact to surrounding habitats including the ponds.

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11. Appendices

Appendix I: Table 6 target notes

Photos	Target Notes
 <p style="text-align: center;">1</p>  <p style="text-align: center;">2</p>	<p>External features of the site and adjacent Target note 1 is of pond one that is the closest pond to site with a large percentage of vegetation cover from species such as waterlilies and areas of blanket weed. The pond has one sloped area under the decking allowing access to the pond by amphibians such as smooth newts. This access is the furthest area of the pond from site and has suitable habitats beyond that leads to another pond (pond 2).</p> <p>Target note 2 is evidence of an active bird nest within the rafters of the main building on the northeast elevation. Works will be conducted on the southeast elevation but will not be high enough to impact rafters therefore the only concern would be temporary disturbance of nesting birds.</p>

Appendix II: Site Photos

Table 7: Site photos

	
<p>Single storey extension on the southeast elevation of the existing building. Extension will not impact the door or any features apart from the ground floor window shown in the picture.</p>	<p>Patio area where the extension will be situated with movable raised planters containing privet and external led lights within the floor. Development proposals contain no plans for external lighting.</p>

Appendix III: Species Lists

Table 8: Plants

Species on site	
Latin name	Common name/s
<i>Ligustrum vulgare</i>	Privet
Species adjacent to site	
<i>Carpinus betulus</i>	Hornbeam
<i>Rosmarinus officinalis</i>	Rosemary
<i>Thymus vulgaris</i>	Thyme
<i>Taxus baccata</i>	Yew
<i>Rosa spp</i>	Rose spp
<i>Chamaenerion angustifolium</i>	Rosebay willow herb
<i>Apium nodiflorum</i>	Fools water cress
<i>Lemna minor</i>	Duck weed
<i>Scirpus spp</i>	Bulrush
<i>Filamentous algae</i>	Blanket weed
<i>Nymphaeaceae</i>	Waterlilies
<i>Mentha aquatica</i>	Water mint

Table 9: Birds

Species adjacent to site	
Latin name	Common name/s
<i>Columba palumbus</i>	Wood pigeon
<i>Turdus merula</i>	Black bird

Table 10: Mammals

Species adjacent to site	
Latin name	Common name/s
<i>Talpa europaea</i>	Mole

Appendix IV: Figures

Phase 1 Habitat Map

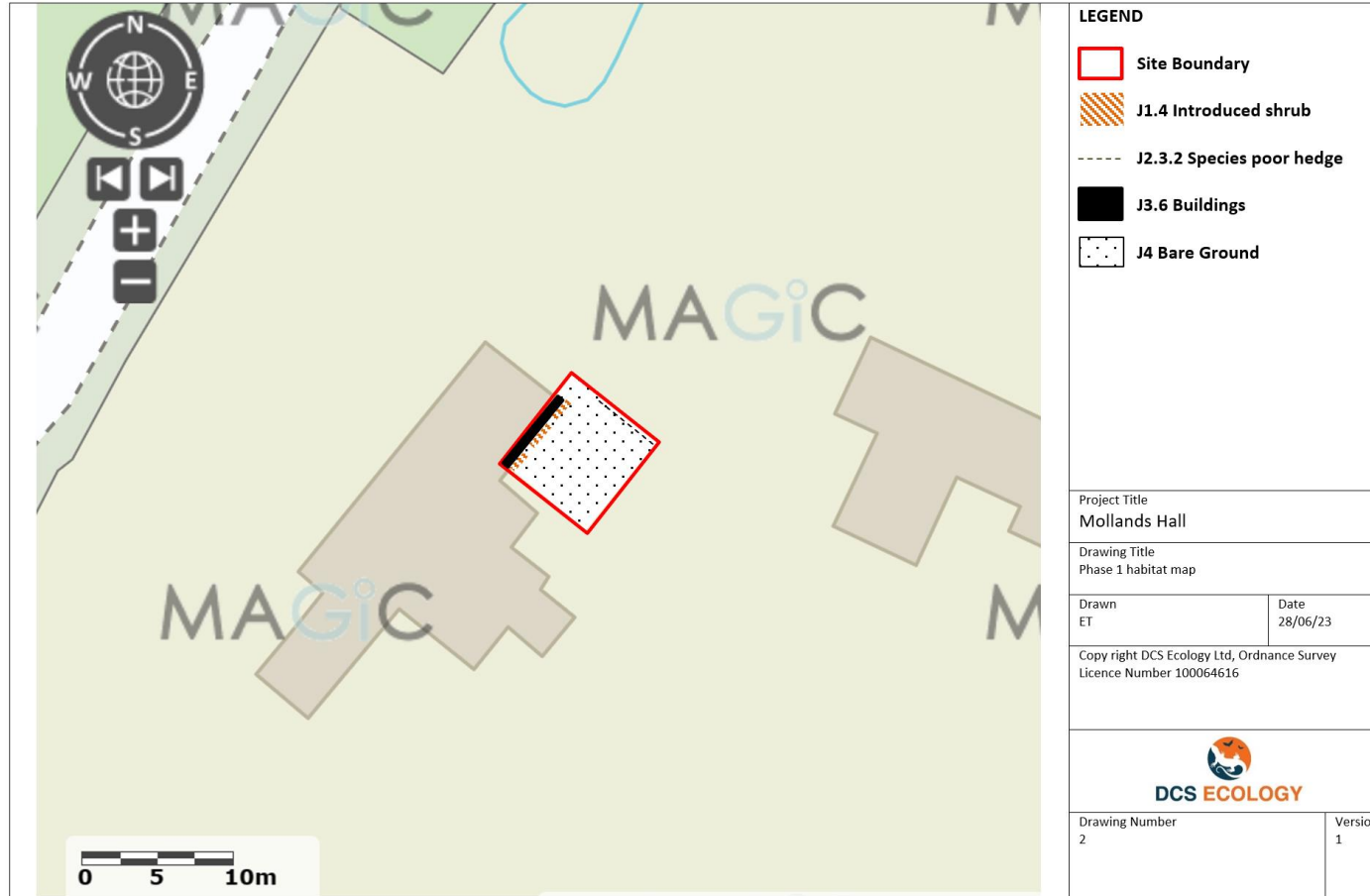


Figure 2: Phase 1 Habitat Map of Site (c) Crown Copyright under licence 100064616

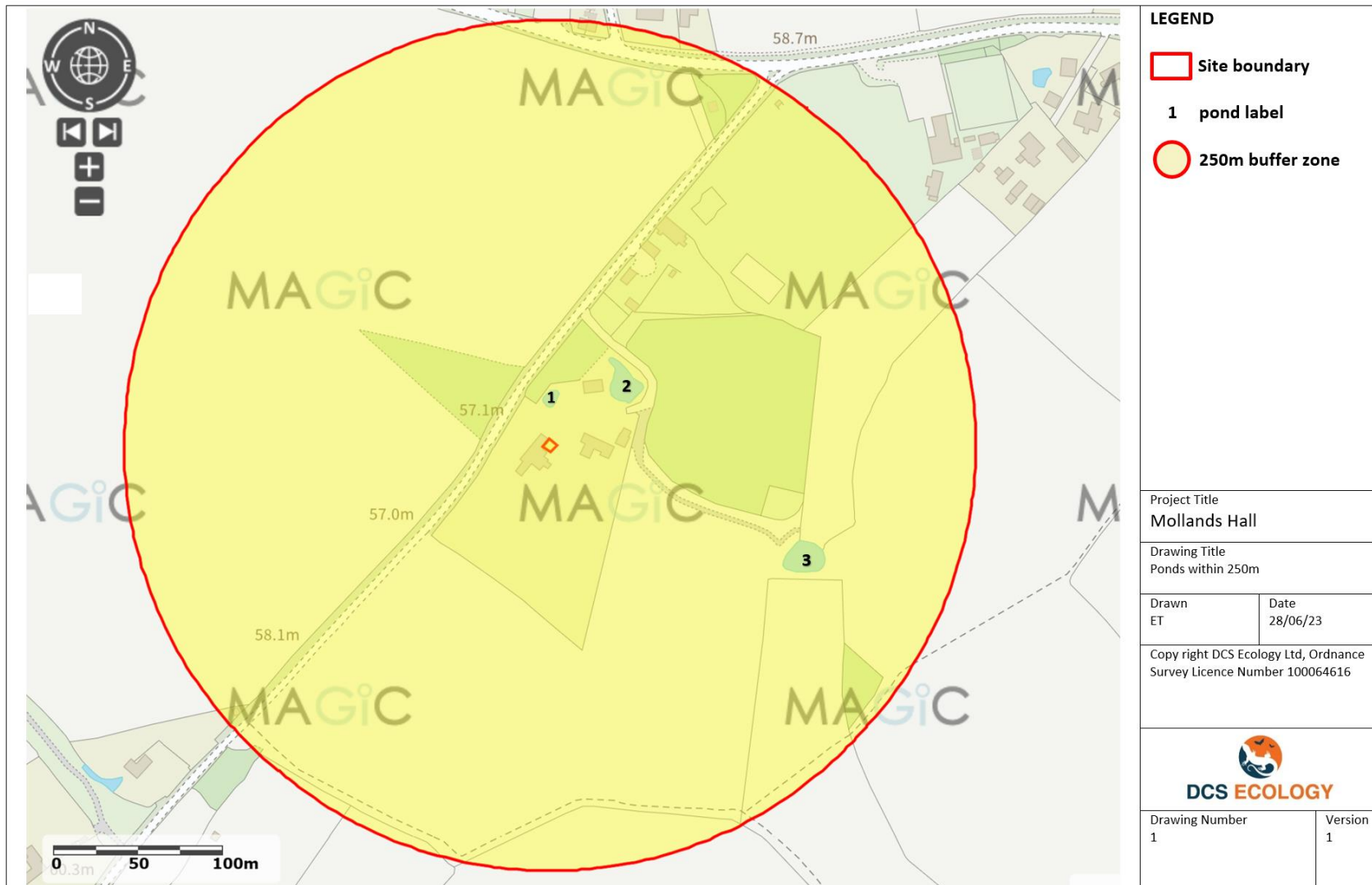


Figure 3: Pond Great Crested Newt Habitat Suitability Index Map 250m. Based upon Ordnance Survey (c) Crown Copyright under licence 100064616

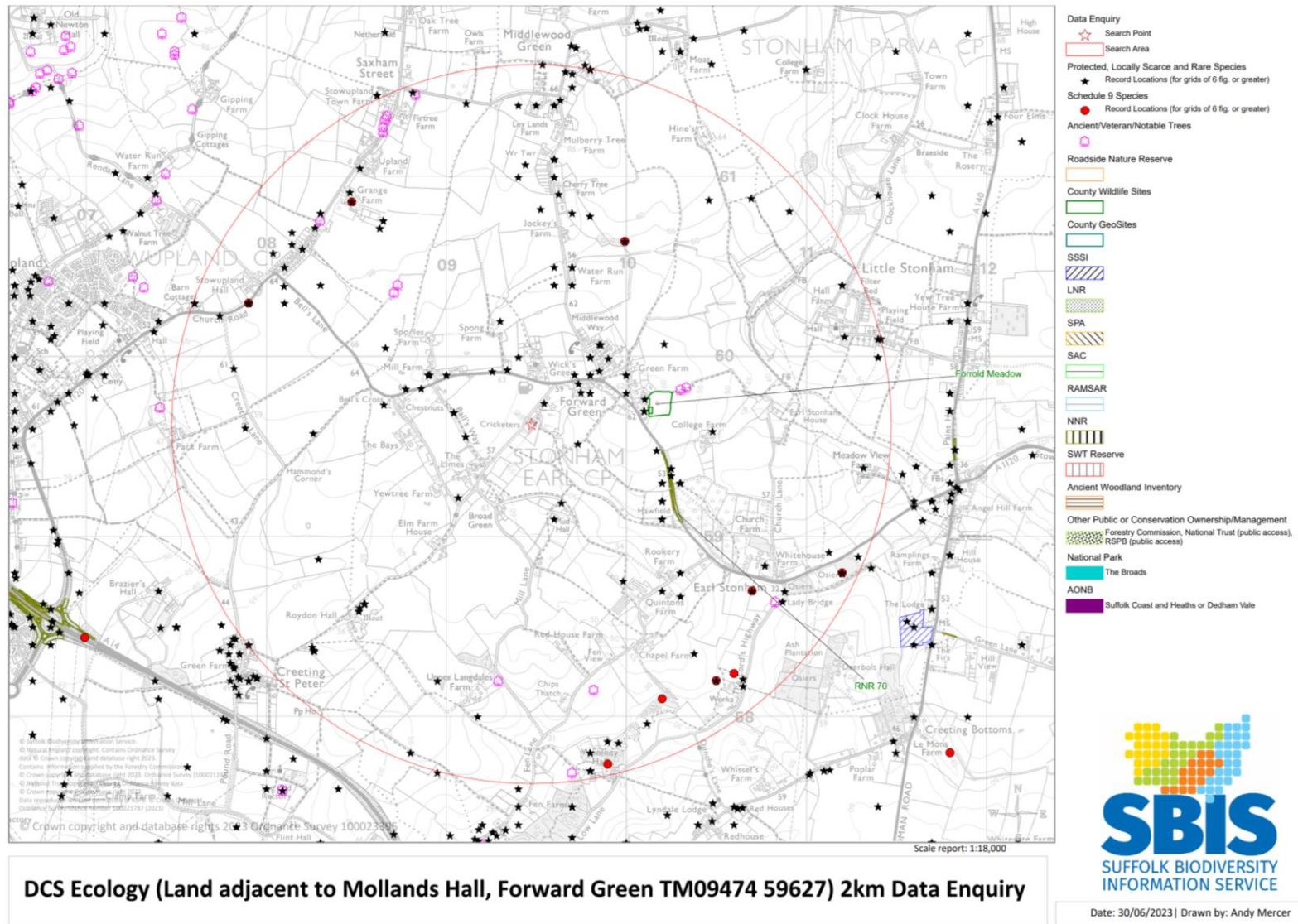


Figure 4: Protected species records, Statutory and Non-Statutory Designated Sites within 2km of the Site.

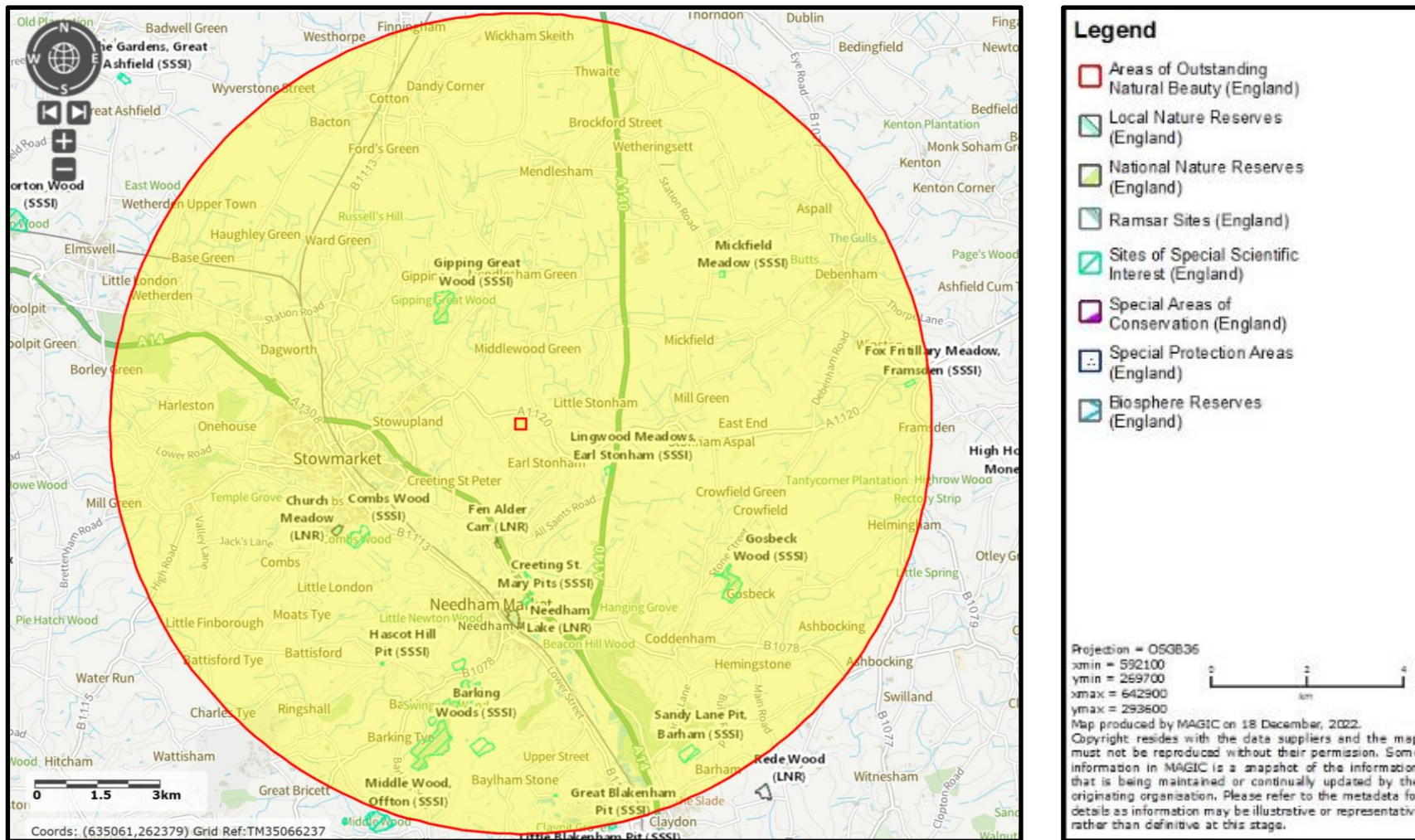


Figure 5: Statutory Conservation Sites within 10km of the Site

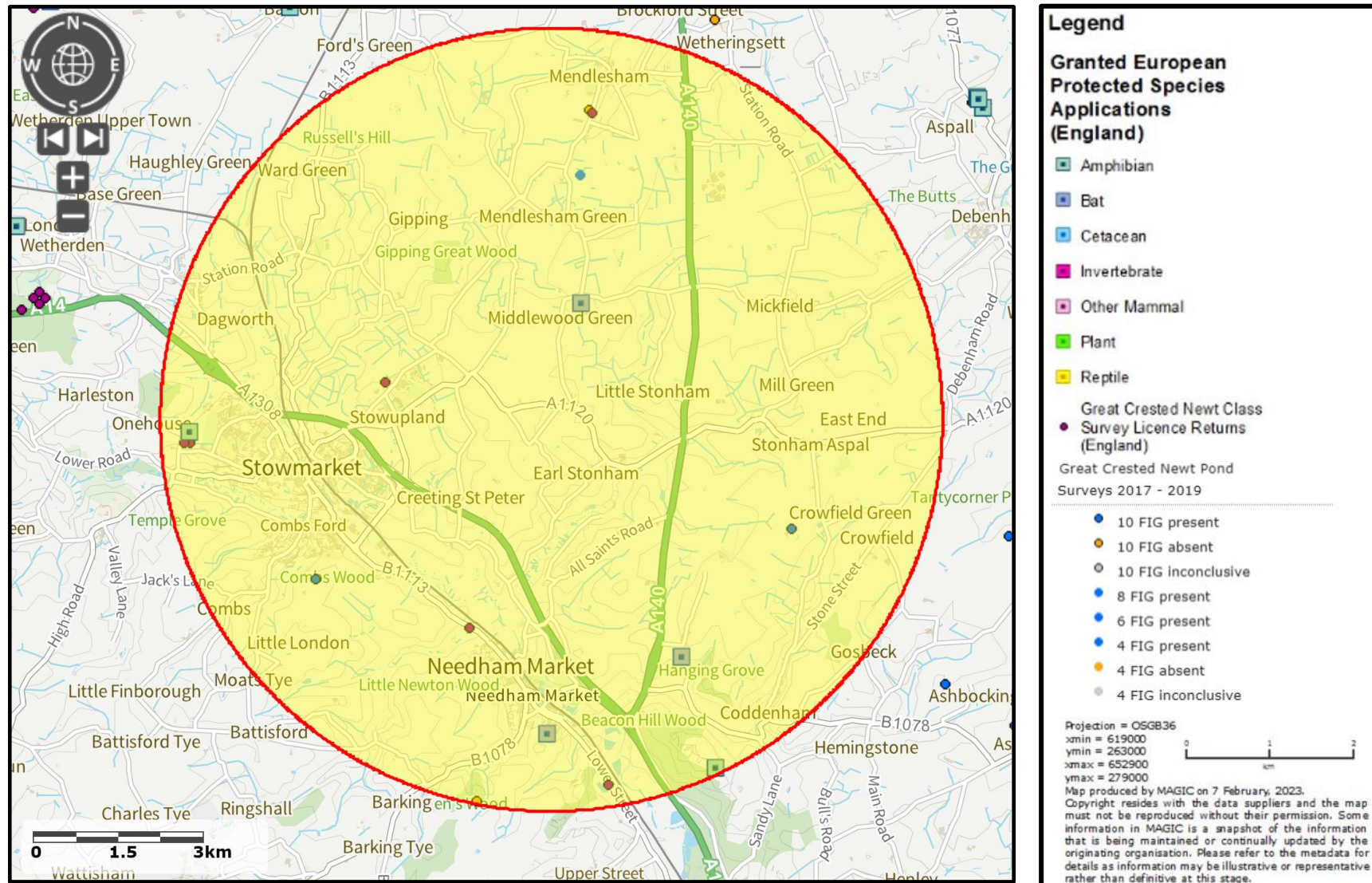


Figure 6: Protected species recorded on MAGIC within 7km of the Site. Based upon Ordnance Survey (c) Crown Copyright under licence 100064616

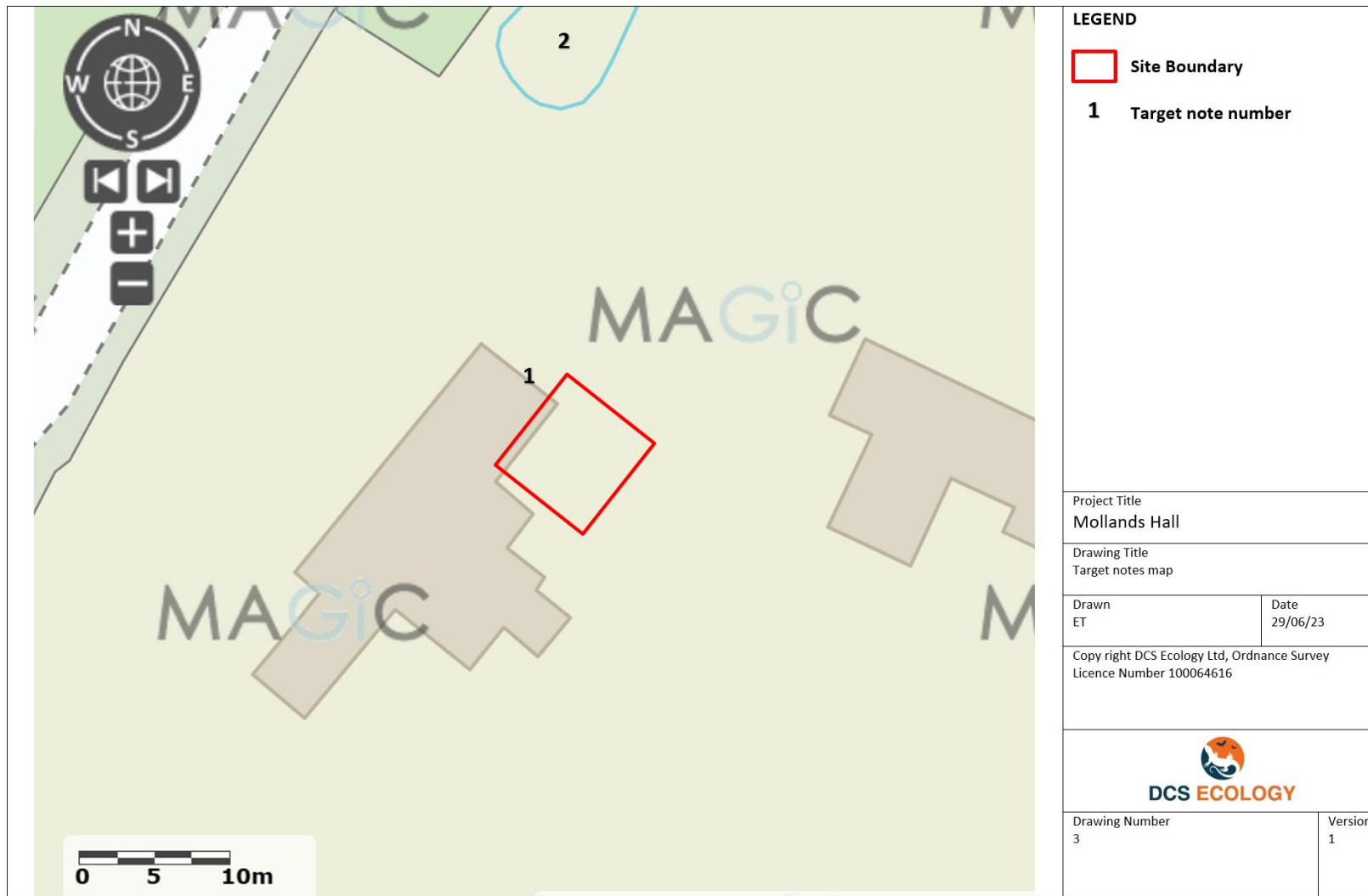


Figure 8: Target notes map.

Appendix V: Desk Study

Table 11: WCA Sch. 1, BoCC Red Listed and Priority (BAP) bird species records within 2km of the Site.

Species common name	Latin name	Status	Most Recent Record
Lesser redpoll	<i>Acanthis cabaret</i>	Sect.41, UKBAP	2018
Skylark	<i>Alauda arvensis</i>	BoCC Red, Sect.41, UKBAP	2013
Kingfisher	<i>Alcedo atthis</i>	WCA1i	2019
Pintail	<i>Anas acuta</i>	WCA1ii	2017
Greylag Goose	<i>Anser anser</i>	WCA 1ii	2010
Tree Pipit	<i>Anthus trivialis</i>	BoCC Red, UKBAP; S41	2015
Swift	<i>Apus apus</i>	BoCC Red	2021
Greenfinch	<i>Chloris chloris</i>	BoCC Red	2013
Marsh Harrier	<i>Circus aeruginosus</i>	WCA 1i	2019
Hen Harrier	<i>Circus cyaneus</i>	BoCC Red, S41, WCA1i	2013
Hawfinch	<i>Coccothraustes coccothraustes</i>	BoCC Red, S41, UKBAP	2018
Cuckoo	<i>Cuculus canorus</i>	BoCC Red, S41, UKBAP	2015
House Martin	<i>Delichon urbicum</i>	BoCC Red	2017
Lesser spotted Woodpecker	<i>Dryobates minor</i>	BoCC Red, UKBAP	2008
Yellow Hammer	<i>Emberiza citrinella</i>	BoCC Red, UKBAP; S41	2019
Reed Bunting	<i>Emberiza schoeniclus</i>	UKBAP; S41	2019
Merlin	<i>Falco columbarius</i>	BoCC Red, WCA1i	2013
Peregrine	<i>Falco peregrinus</i>	WCA1i	2020

Gyr Falcon	<i>Falco rusticolus</i>	WCA1i	2021
Hobby	<i>Falco subuteo</i>	WCA1i	2019
Brambling	<i>Fringilla montifringilla</i>	WCA1i	2019
White-tailed Eagle	<i>Haliaeetus albicilla</i>	WCA1i	2021
Mediterranean Gull	<i>Ichthyaeetus melanocephalus</i>	WCA1i	2018
Herring Gull	<i>Larus argentatus</i>	BoCC Red, UKBAP	2011
Linnet	<i>Linaria cannabina</i>	BoCC Red; UKBAP	2019
Crossbill	<i>Loxia curvirostra</i>	WCA1i	2017
Red Kite	<i>Milvus milvus</i>	WCA1i	2021
Yellow Wagtail	<i>Motacilla flava</i>	BoCC Red, UKBAP	2018
Spotted flycatcher	<i>Muscicapa striata</i>	BoCC Red, UKBAP, S41	2021
Curlew	<i>Numenius arquata</i>	BoCC Red, UKBAP, S41	2013
Whimbrel	<i>Numenius phaeopus</i>	BoCC Red, WCA1i	2019
House Sparrow	<i>Passer domesticus</i>	BoCC Red, UKBAP, S41	2018
Tree Sparrow	<i>Passer montanus</i>	BoCC Red, UKBAP, S41	2019
Grey Partridge	<i>Perdix perdix</i>	BoCC Red; S41, UKBAP	2020
Honey-buzzard	<i>Pernis apivorus</i>	WCA1i	2019
Black Redstart	<i>Phoenicurus ochrurus</i>	WCA1i	2020
Wood Warbler	<i>Phylloscopus sibilatrix</i>	BoCC Red; S41, UKBAP	2018
Marsh tit	<i>Poecile palustris</i>	BoCC Red; UKBAP	2018
Dunnock	<i>Prunella modularis</i>	UKBAP	2018
Bullfinch	<i>Pyrrhula pyrrhula</i>	UKBAP	2019
Firecrest	<i>Regulus ignicapilla</i>	WCA1i	2013

Whinchat	<i>Saxicola rubetra</i>	BoCC Red	2019
Woodcock	<i>Scolopax rusticola</i>	BoCC Red	2010
Garganey	<i>Spatula querquedula</i>	WCA1i	2018
Turtle dove	<i>Streptopelia turtur</i>	BoCC Red, UKBAP, S41	2021
Starling	<i>Sternus vulgaris</i>	BoCC Red, UKBAP	2018
Green Sandpiper	<i>Tringa ochropus</i>	WCA1i	2018
Redwing	<i>Turdus iliacus</i>	WCA1i	2019
Song thrush	<i>Turdus philomelos</i>	BoCC Red, UKBAP, S41	2011
Fieldfare	<i>Turdus pilaris</i>	BoCC Red, WCA1i	2021
Mistle Thrush	<i>Turdus viscivorus</i>	BoCC Red	2011
Barn Owl	<i>Tyto alba</i>	WCA1i	2019
Lapwing	<i>Vanellus vanellus</i>	BoCC Red, UKBAP, S41	2013

Appendix VI: Relevant Protected Species Legislation

International and national legislation, and policy context.

EC Habitats Directive

In 1992 the then European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring member states to introduce protection for these habitats and species of European importance. The mechanism for protection is through the designation of Special Areas of Conservation (SACs), both for habitats and for certain species listed within Annex II. There are several species listed within Annex II of the Habitats Directive that are present within the UK; these include four lower plant species, nine higher plant species, six species of molluscs, six species of arthropods, eight species of fish, two species of amphibian, and nine species of mammal.

The Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) came into force in 1982. The principal aims of the Convention 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 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) was adopted in Bonn, Germany 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 1 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 2 of the Convention), and by undertaking cooperative research activities.

Convention on Biological Diversity

The Convention on Biological Diversity (Biodiversity Convention or CBD) was adopted at the Earth Summit in Rio de Janeiro and entered into force in December 1993. It was the first treaty to provide a legal framework for biodiversity conservation. Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. However, it does not extend to Northern Ireland, the Channel Islands, or the Isle of Man. This legislation is how the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) are implemented in Great Britain.

Conservation of Habitats and Species Regulations 2010 (as amended)

In the UK the Council Directive 92/43/EEC has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), and the Regulations (Northern Ireland) 1995 (as amended). The Regulations came into force on 30 October 1994 and have been amended several times. Subsequently the Conservation of Habitats and Species Regulations 2010 was created which consolidates all the various amendments made to the 1994 Regulations in respect of England and Wales and is commonly known as the 'the Habitats Regulations'. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland. The Regulations contain five Parts and four Schedules and provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Table 12: Relevant Protected Species Legislation

Species	Legislation	Protection
Bats	<ul style="list-style-type: none"> ▪ Conservation of Habitats and Species Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) ▪ Wild Mammals Act (1996) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure or take any bat ▪ Intentionally or recklessly disturb a bat ▪ Intentionally or recklessly damage, destroy or obstruct access to a bat roost
Great Crested Newts	<ul style="list-style-type: none"> ▪ Conservation of Habitats and Species Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure or take a great crested newt ▪ Intentionally or recklessly disturb a great crested newt ▪ Intentionally or recklessly damage, destroy or obstruct access to any place used by a great crested newt for shelter or protection
Widespread Reptiles	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill or injure a reptile. ▪ Sell, offer or expose for sale, have in possession or transport for the purpose of sale any live or dead reptile or any part of, or anything derived from, a reptile
Birds	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981 (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure or take any wild bird ▪ Intentionally take, damage or destroy nests in use or being built ▪ Intentionally take, damage or destroy eggs <p>Species listed on Schedule 1 of the WCA (1981) are afforded additional</p>

protection, making it an offence to intentionally or recklessly disturb such species at, on or near an active nest

Appendix VII: Abbreviations

Table 13: List of abbreviations	
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CHSR	Conservation of Habitats and Species Regulations 2017
CIEEM	Chartered Institute of Ecology and Environmental Management
CROW	The Countryside Rights of Way Act 2000
CWS	County Wildlife Site
ECOW	Ecological clerk of works
eDNA	Environmental DNA
EIA	Ecological Impact Assessment
EPS	European Protected Species
GCN	Great crested newt
HPI	Habitat of Principal Importance
HSI	Habitat Suitability Index
HRA	Habitat Regulations Assessment
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPAs	Local Planning Authorities
MAGIC	Multi-Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities Act
NBIS	Norfolk Biodiversity Information Service
NE	Natural England
NERC	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	The National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRA	Preliminary Roost Assessment
PRF	Potential (bat) Roosting Feature
RAMs	Reasonable Avoidance Measures
SAC	Special Area of Conservation
SBAP	Suffolk Biodiversity Action Plan
SBIS	Suffolk Biodiversity Information Service
SPA	Special Protection Area
SSSI	Special Site of Scientific Interest
TAF	Temporary amphibian fencing
WCA	Wildlife and Countryside Act 1981 (as amended)
UKBAP	United Kingdom's Biodiversity Action Plan

Table 14: Abbreviations of bat species		
Abbreviations	Common name	Latin name
BARB	Barbastelle (bat)	<i>Barbastella barbastellus</i>
BLE	Brown long-eared (bat)	<i>Plecotus auritus</i>
CPIP	Common Pipistrelle bat	<i>Pipistrellus pipistrellus</i>
DAUB	Daubenton's bat	<i>Myotis daubentoniid</i>
LEI	Lesser noctule / Leisier's bat	<i>Nyctalus leiseri</i>
NATT	Natterer's bat	<i>Myotis nattereri</i>
NOC	Common noctule	<i>Nyctalus noctule</i>
NPIP	Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>
SERO	Serotine (bat)	<i>Eptesicus serotinus</i>
SPIP	Soprano pipistrelle (bat)	<i>Pipistrellus pygmaeus</i>

Appendix IX: Enhancement and mitigation examples designs.

Table 15: Compensation and enhancement Examples.	
	
<p>Photo 1: Woodstone Seville Box 28-32mm Hole.</p>	<p>Photo 2: Woodstone multichambered bat box</p>
	
<p>Photo 3: Eco-Kent bat box</p>	<p>Photo 4: Bat rocket box.</p>