

Preliminary Ecological Appraisal (PEA)

Meade Cowshed
Beyton Road
Drinkstone
Bury St Edmunds
IP30 9SS

*Report for
Mr & Mrs J Ferguson*

April 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 Mr & Mrs J Ferguson to undertake a Preliminary Ecological Appraisal (PEA) of Meade Cowshed, Beyton Road, Drinkstone, Bury St Edmunds, IP30 9SS (central grid reference TL95106216; hereafter referred to as 'the site').

The Site is approximately .01 hectares (ha) and comprised of a workshop referred to as the 'cow shed', hard standing, and ornamental vegetation / introduced scrub.

The proposed planning application (DC/22/06105) is for the conversion of the cow shed within the Site boundary into a dwelling.

A PEA was undertaken on 19th April 2023 by Duncan Sweeting LCG ((NE great crested newt class survey licence WML-CL08; NE bat class survey licence WML-CL18; barn owl survey licence WML-CL29) and Elizabeth Thurston (undergraduate) of DCS Ecology Ltd.

1.2 Methodology

Desk study

Records of protected/notable species and habitats were reviewed within a defined search area from the centre of the Site. The 10 km search radius included statutory designated sites of European significance, including Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Special Sites of Scientific Interest (SSSIs), and Ramsar sites. The 7 km search radius included records of bat licence returns. A 3 km search radius was used to identify ancient trees. A 2 km search radius was used in a standard data search for protected species records from the Suffolk Biodiversity Information Service (SBIS). A 2 km search radius was used to identify Local Nature Reserves (LNRs), National Nature Reserves (NNRs), and County Wildlife Sites. The 10 km radius statutory site search, 7 km licence return search, 2 km site search and 500 m pond searches were conducted using Multi-Agency Geographic Information for the Countryside (MAGIC) Map. The respective search radii were considered suitable for the scale and type of the proposed development.

Field survey

The survey was carried out following standard methodology published by the Joint Nature Conservation Committee (JNCC, 2010). This methodology is a standardised technique for rapidly obtaining baseline ecological information over a large area of land.

All habitat types present on-Site were recorded on a map, and dominant plant species were recorded in accordance with standard nomenclature.

Additional Information

In accordance with best practice, the standard survey methodology was extended to consider and include all protected/notable fauna and habitats suitable to support them. Any incidental records or evidence of species were target-noted, and each habitat was evaluated for its potential to support protected/notable species.

1.3 Results

No conservation designated areas were located within a 2km radius of site, although multiple SSSIs were located within 10km. Six CWS sites were recorded within 2km of site, none of

which were considered likely to be impacted by proposed works. There were 5 recorded licence applications, 15 class survey licence returns and 5 pond survey records for GCN within a 7km radius of site, none of which were within 1km of site. Six bat licence applications were retrieved from the data search, all of which involved common and widespread bat species and were situated over 4km from site.

The habitats and structures identified on-Site during the field survey included workshop referred to as the 'cow shed', hard standing, and ornamental vegetation / introduced scrub. These habitats currently provide low-moderate habitat potential for birds and small mammals, and negligible potential habitat for bats, amphibians, and badgers.

1.4 Recommendations

Statutory Sites of European Significance

The Conservation of Habitats and Species Regulations 2010 (as amended) require a Habitats Regulations Assessment (HRA) to be undertaken for any plan or project that may have a 'likely significant effect' on a European site. As the proposed development on this Site are for improving the habitats and biodiversity present on-Site, there will be no significant effects on any European sites.

Flora and Habitats

As only a minimal amount of vegetation was due to be impacted by works, further botanical survey is not considered necessary, nor were additional enhancement features; however, any mature trees within close proximity of the Site should be suitably protected from harm following guidance set out in BS5837 (2012).

Protected Species

Precautionary mitigation is recommended for amphibians, badgers, bats, birds, hedgehogs, invertebrates, and numerous small mammal species, to achieve a neutral development impact for these species and species groups.

Badgers, Hedgehogs and Other Mammals

No further survey is necessary; however, as a precautionary measure, construction works should have implemented several precautionary measures, including the following:

- Safe storage of materials that may harm animals
- Covering excavations overnight to prevent animals falling in, or the provision of an escape ramp
- Security lighting to be set on short timers to avoid disturbing nocturnal animals using the Site and immediate surrounding area, and in alignment with guidelines set out for bats (see below).

For hedgehogs, any potential nesting habitat (discarded building materials, log piles, dense vegetation) should have been removed outside the hibernation period (which is November to March) or under supervision of an ecologist.

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.

Works should be undertaken during daylight hours, and artificial lighting should be avoided wherever possible. Where this is not possible (i.e., during certain construction activities), light spillage onto any linear features should be avoided using directional lighting (e.g., the use of hoods and/or cowls).

Birds

No bird surveys are required. Any building demolition or clearance should be carried out outside the breeding bird season (which runs from March to September) or following a nesting bird survey by a suitably experienced ecologist – to prevent infringing legislation which protects all nesting birds.

Invertebrates

The Site contained minimal 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 survey is not considered necessary.

Reptiles and Amphibians

Any refugia removal (such as log, branch, or rubble piles), or actions that will impact upon refugia, should be carried out outside of the hibernation period (Nov-Feb). If works cannot be timed outside of the brumation season, a suitably experienced and licenced ecologist should be on-Site to overlook works and remove any amphibians and reptiles that may be found.

2 Introduction

2.1 Background

DCS Ecology Ltd. was commissioned by Mr & Mrs J Ferguson to undertake a Preliminary Ecological Appraisal (PEA) of Meade Cowshed, IP30 9SS (the Site; figure 1).

The proposed planning application is for the conversion of the cow shed within the Site boundary into a dwelling.

2.2 Aim of Study

This report provides a PEA of the Site following the completion of a desk study and Site visit. The aim of this survey was to:

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

2.3 Site Description

The Site is located 0.8 km north-west of the village of Drinkstone, 1.6 km north-east of the village of Hessett, and 1.9 km south-west of the village Woolpit, Suffolk. The proposed development zone is approximately 0.01 ha in extent and consisted of a workshop referred to as the 'cow shed', hard standing, and ornamental vegetation / introduced scrub.

Park Road runs to the south of the Site, and Drinkstone Road to the west. To the east and south of the Site are several rivers, ponds, and Drinkstone Lake; these provide foraging habitat for bats and wading birds. They may also provide habitat for frogs, toads, and newts during their aquatic phases, as well as additional foraging habitat for bats and grass snakes (*Natrix helvetica*), and a water source for mammals.

To the south are small areas of woodland and stretches of hedgerow which may be used by foraging and commuting mammals, including roosting habitat for bats. The majority of surrounding habitat is comprised of arable fields bordered by hedgerow, which may support populations of mammals, including deer, hedgehogs, and small mammals, as well as breeding birds and invertebrates.

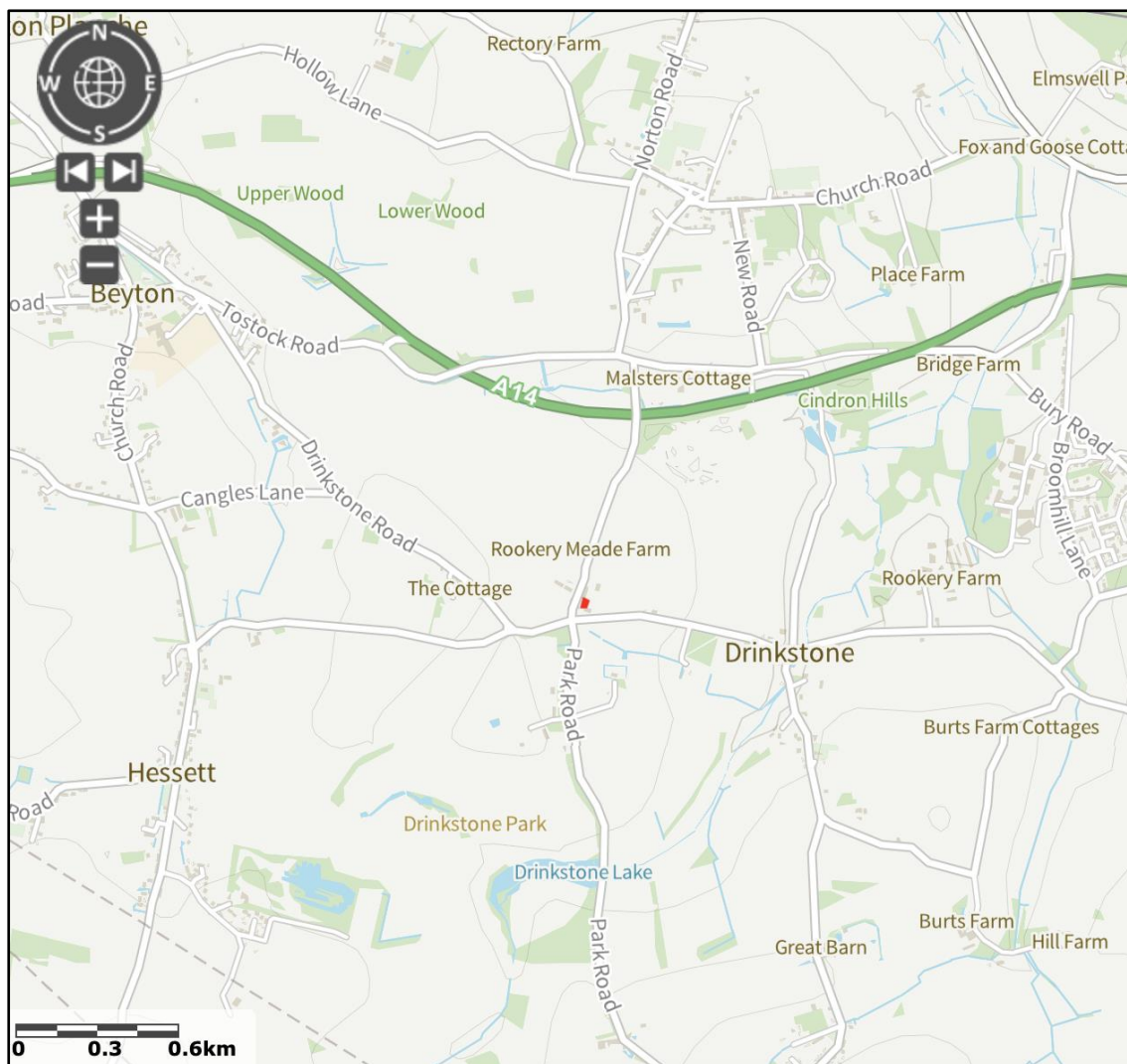


Figure 1. Site location outlined in red (1:25000). © Crown copyright and database rights 2022. Ordnance Survey licence 100064616.

2.4 **Relevant Legislation**

Relevant wildlife and countryside legislation have been used along with planning policy guidance and the UK Biodiversity Framework to inform this assessment. Their context and applicability are explained as appropriate in the relevant sections of the report and additional details are presented in Appendix V.

The key articles of relevance are:

- The Wildlife and Countryside Act (WCA) 1981, as amended
- The Protection of Badgers Act 1992
- The Hedgerow Regulations 1997
- The Countryside and Rights of Way (CROW) Act 2000
- The Natural Environment and Rural Communities (NERC) Act 2006

- The Conservation of Habitats and Species Regulations 2010, as amended (Habitats Regulations)
- UK Post-2010 Biodiversity Framework (2011-2020)
- National Planning Policy Framework (NPPF) 2021
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services
- Suffolk Biodiversity Action Plan.

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 (WCA 1981, as amended; 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) 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.

3 Methodology

3.1 *Desk Study*

Data obtained from the Suffolk Biodiversity Information Service (SBIS) was used to conduct a standard search for any information regarding records of protected and priority species within a 2 km radius of the Site. Data from SBIS was received on 23/02/23.

Records of protected/notable species and habitats were reviewed within a defined search area from the centre of the Site. The 10 km search radius included statutory designated sites of European significance, including Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Special Sites of Scientific Interest (SSSIs), and Ramsar sites. The 7 km search radius included records of bat licence returns. A 3 km search radius was used to identify ancient trees. A 2 km search radius was used in a standard data search for protected species records from the Suffolk Biodiversity Information Service (SBIS). A 2 km search radius was used to identify Local Nature Reserves (LNRs), National Nature Reserves (NNRs), and County Wildlife Sites. The 10 km radius statutory site search, 7 km licence return search, 2 km site search and 500 m pond searches were conducted using Multi-Agency Geographic Information for the Countryside (MAGIC) Map.

The respective search radii were considered suitable for the scale and type of the proposed development.

3.2 *Field Survey*

A PEA was undertaken by Duncan Sweeting LCG (NE great crested newt class survey licence WML-CL08; NE bat class survey licence WML-CL18; barn owl survey licence WML-CL29) and Lizzie Thurston BSc (Undergraduate) on 19th April 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 were 80% cloud cover, BF level 2, and

a temperature of 12.6 °C. The Site was traversed slowly by the surveyors, mapping habitats, and making notes on dominant flora and fauna. 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, and areas of the Site to be enhanced for increased biodiversity.

3.3 Survey Limitations

4 Results

4.1 Data Search

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.

European conservation sites (AONB, SACs, SPAs, SSSIs or Ramsar sites) within a 10 km radius of the Site:

AONB sites:

There were no AONB sites.

SAC sites:

There were no SAC sites.

Ramsar sites:

There were no Ramsar sites.

SPAs:

There were no SPA sites.

SSSIs:

- Thorpe Morieux Woods (6.5 km south, 43.6 ha): The ground flora of the wood contains several uncommon species and is notable for large populations of oxlip (*Primula elatior*), a scarce local species. Other species are indicators of ancient woodland, including early purple orchid (*Orchis mascula*).
- Norton Wood (2.8 km north-east, 24.2 ha): This ancient wood has ground flora including several uncommon plants and a characteristic flora, including oxlip, nettle-leaved bellflower (*Campanula trachelium*), herb paris (*Paris quadrifolia*), and ramsons (*Allium ursinum*).
- The Gardens, Great Ashfield (7.4 km north-east, 3.7 ha): The site consists of four floristically-rich ancient meadows. It supports a wide variety of grasses and herbs, including common twayblade (*Listera ovata*), and flowers including green-winged orchid (*Orchis morio*) and bee orchid (*Ophrys apifera*).

- Stanton Woods (8.9 km north, 62.87 ha): The woodlands have a rich ground flora, including enchanter's nightshade (*Circaea lutetiana*), bluebell (*Hyacinthus non-scriptus*), creeping cinquefoil (*Potentilla reptans*), and early purple orchid (*Orchis mascula*).
- Pakenham Meadows (6.6 km north-west, 5.8 ha): The meadow and surrounding habitats are unusually species rich: blunt-flowered rush (*Juncus subnodulosus*), bog pimpernel (*Anagallis tenella*), and marsh marigold (*Caltha palustris*).
- The Glen Chalk Caves, Bury St Edmunds (8.9 km west, 1.58 ha): The site consists of tunnels excavated in chalk, totalling approximately 200 m in length, and contain a disused lime-kiln. Five species of bats often use the tunnels and kiln for hibernation between September and April: Daubenton's bat (*Myotis daubentoni*), Natterer's bat (*Myotis nattereri*), brown long-eared bat (*Plecotus auritus*), whiskered bat (*Myotis mystacinus*) and Brandt's bat (*Myotis brandti*). Barbastelle bat (*Barbastella barbastellus*), common pipistrelle (*Pipistrellus pipistrellus*), and lesser horseshoe (*Rhinolophus hipposideros*) have been observed infrequently.
- Bradfield Woods (4.4 km south, 83 ha): These woods are almost entirely ancient; over 370 species of plants have been recorded, including bluebells. Wildlife species observed include white admiral (*Limenitis camilla*), green hairstreak (*Callophrys rubi*), and purple hairstreak butterflies (*Neozephyrus quercus*); breeding nightingales (*Luscinia megarhynchos*), and hazel dormice (*Muscardinus avellanarius*).

European Protected Species within a 7 km radius:

Table 1. MAGIC Map European Protected Species (EPS) licence applications data within a 7 km radius of the Site. See map in Appendix VII (data extracted on 24/2/23).

EPS Reference	Species	Grid Reference	Location
2017-29138-EPS-AD2	Great crested newt	TL96736241	Woolpit
2017-29138-EPS-AD2-1			
2017-29138-EPS-AD2-2			
2017-29138-EPS-AD2-3			
2017-31568-EPS-MIT	Great crested newt	TL99906310	Little London
2018-38137-EPS-MIT	Brown long-eared bat Common pipistrelle Soprano pipistrelle	TL99125712	Mill Green
2015-11624-EPS-BDX	Brown long-eared bat Common pipistrelle	TL90926169	Kingshall Street
2016-25086-EPS-MIT	Brown long-eared bat Common pipistrelle Serotine Soprano pipistrelle	TL89896142	Rushbrooke
2016-25086-EPS-MIT-1			
2016-25086-EPS-MIT-2			
2020-45491-EPS-MIT	Brown long-eared bat Common pipistrelle	TL89096132	Rushbrooke

There were five GCN licence applications; the nearest was 1.6 km east of the Site (TL96736241) and allowed the destruction of a resting and breeding place. There were 15 GCN class survey licence returns. The closest was 1.4 km east of the Site (TL96506241). There were five pond surveys; the nearest pond survey was 1.2 km north of the Site (TL9525763374); the HSI was 0.84 (Excellent) and GCN were confirmed to be present.

There were six bat licence applications; the nearest licences were 4.1 km west of the Site (TL90926169) and allowed destruction of a breeding site. The survey identified two species: brown long-eared bat (*Plecotus auritus*) and common pipistrelle (*Pipistrellus pipistrellus*).

Ancient trees within a 3 km radius:

Woodland Trust Ancient Tree Inventory (3 km radius)

The Site is surrounded by >30 veteran pedunculate oaks (*Quercus robur*) with a variety of Potential Roosting Features (PRFs). They are spread out within the 3 km radius surrounding the Site, and are surrounded by footpaths, arable fields, hedgerow, and sections of woodland. The presence of woodland and hedgerow around these trees provides bats with habitat within which to commute. It is possible that are additional notable trees within the 3 km radius which may have PRFs, providing additional habitat for bats and invertebrate prey populations.

SBIS (2 km radius)

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

Species	Distance from Site (km)
Cedar (<i>Cedrus spp.</i>)	1.8
Cedar (<i>Cedrus spp.</i>)	1.8
Ash (<i>Fraxinus excelsior</i>)	1.7
Pedunculate oak (<i>Quercus robur</i>)	1.9
Pedunculate oak (<i>Quercus robur</i>)	1.6
Pedunculate oak (<i>Quercus robur</i>)	1.4
Pedunculate oak (<i>Quercus robur</i>)	1.5
Pedunculate oak (<i>Quercus robur</i>)	1.8

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. From the photographs on the website, all these trees appear to have a minimum of one PRF which may support bat roosts however this cannot be confirmed without a formal survey of the trees.

County Wildlife Sites within a 2 km radius:

- Lower Wood (1.6 km north-west, 1.63 ha): This small woodland is comprised of large old oaks, coppice, and other tree species, with an abundance of dead wood which provides habitat for invertebrates and hole-nesting birds.
- Tostock Pond and the Leys (1.15 km north, 0.84 ha): The pond is situated on 'The Leys' village green. The pond is a valuable habitat with a scrub perimeter. Scarce plants include greater (*Ranunculus flammula*) and lesser spearwort (*Ranunculus lingua*), tubular water-dropwort (*Oenanthe fistulosa*) and water-plantain (*Alisma plantago-aquatica*). The pond also supports a population of great crested newts.
- Bridge Farm Wood (1.25 km north-east, 3.31 ha): This ancient wood is comprised of various species and provides valuable habitat for hole nesting birds, including woodpeckers. The ground flora consists of tall rank vegetations characterised by plants associated with disturbed soils.
- Drinkstone Meadow (1.09 km east, 1.99 ha): The meadow is composed of a mosaic of plant communities with an area of semi-improved grassland and 2 meadows of marshy grassland and ditches with species characteristic of wet ground conditions.
- Pumping Station Meadow (1.89 km south-east, 0.84 ha): This small meadow is dominated by meadowsweet (*Filipendula ulmaria*), and there are various wetland and wildflower plants present, including betony (*Stachys officinalis*).
- Hessett Nature Reserve (1.62 km south-west, 10.03 ha): It contains a mosaic of habitats including water bodies, woodland, grassland, and scrub with excellent structural diversity. Several disused gravel pits which are now filled with water support a good range of water birds. The adjacent grassy banks and meadows are species-rich with many bee orchids recorded. Other scarce plants include grass vetchling (*Lathyrus nissolia*) and common broomrape (*Orobanche minor*).

Local Nature Reserves (LNRs):

There were no LNR sites within a 2 km radius of the Site.

National Nature Reserves (NNRs):

There were no NNR sites within a 2 km radius of the Site.

4.2 Field Survey Results

The site consisted of a former cow shed, surrounded by hardstanding and ornamental plants. Structural materials forming the cow shed consisted of brick and breezeblock with painted weatherboarding on the southern and western elevations, brick and flintstone on the eastern elevation, and wooden slats on the northern elevation. The roofing lined with ridge and pan tiles on the eastern half of the building, and corrugated sheet roofing (potentially asbestos) on the western half. The interior was a single-space unit without

roof voids or other forms of segmentation., and supported by timber and metal framework.

It was noted that support beams were in place to stabilise the rafters, and that the roofing was in poor condition, with tears in the felt that was lining the eastern roof section and had numerous holes / missing tiles.

Surrounding the building was hardstanding and small areas of ornamental planting.

Multiple openings were present, including a doorway and wooden slats on the northern elevation, holes in the roofing felt and missing ridge tiles. The cow shed lacked a roof void or other enclosed spaces, and was relatively well lit.

To the west of the cow shed was a hardstanding courtyard area and driveway, containing ornamental plants (most of which were non-native) and bordered by brick and breeze block walls and adjacent buildings. Many of the plants were in raised flowerbed that were inaccessible to hedgehogs, amphibians, and other species with poor mobility. The southern wall of the cowshed was partially-clad in brambles (*Rubus fruticosus*).

Rodenticide command blocks and inactive mammal traps were found within the property.

To the north and east of the cow shed was a rural garden contained cultivated plants and ornamental hedgerows of predominately yew (*Taxus baccata*). The site boundary extends 2 metres into the garden area from the cow shed, which includes a small area of shrubs (predominately ornamental) and mowed amenity grassland.

A map showing the habitat types on Site can be seen in Appendix IV.

4.3 **Protected and Priority Species**

Flora

The SBIS 2 km radius data returned 30 records of 24 protected flowering plant species. The closest (IL953634) was one record of tubular water-dropwort (*Oenanthe fistulosa*), 1.3 km north of the site.

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

Flora recorded onsite or immediately adjacent to site was minimal. Aside from several generalist species such as brambles (*Rubus fruticosus*), the majority of plants were ornamental, such as Mediterranean spurge (*Euphorbia characias*) and Lavendar (*Lavandula*) with no uncommon, rare, or protected species being noted. The total vegetation area was minimal, isolated and offered poor foraging and sheltering opportunities for invertebrates and other fauna.

A full list of plant species identified during the survey can be found in Appendix III.

Fungi

SBIS returned no records of protected or priority fungi species. No rare or protected fungi were seen onsite.

Badgers

SBIS returned one record of badgers (*Meles meles*), 1.2 km north-west of the Site (TL93986238).

The majority of site was hardstanding / building area, and was unsuitable for badgers. The western perimeter of site was partially isolated from surrounding habitats via a network of brick walls, breezeblock walls, and buildings, particularly to the west. No visible evidence of the presence of badgers (*Meles meles*), including setts, footprints, latrines, and snuffle marks, were found during the survey. Arable fields in the wider area and a mixed woodland copse ~100m south-west of site did offer potential foraging and sheltering habitats for badgers, but these are unlikely to be directly or indirectly impacted by works.

Bats

The site comprised of a disused cowshed surrounded by a courtyard and garden area, which 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, none of which were found during the survey.

The building had **negligible roost potential** due to the following reasons:

- High degree of light ingress from openings in the roof, glass windows in the southern elevation, open access doorways, wooden slats and opaque roof sheets.
- Aside from a small number of minor potential roost features (lifted / missing ridge and pan tiles upon roof felt), there were few crevices / voids / openings present to provide roosting opportunities for bats.
- No signs of bats (droppings, urine stains, feeding remains etc.) were found during the survey.
- Other environmental conditions such as draughty conditions and poor insulation reduced the suitability of the site further.

No trees were present onsite, and no trees containing bat roost potential were found within close vicinity of site. Garden containing amenity grassland, trees, and shrub adjacent to site had moderate potential to be used by commuting and foraging bats, which could potentially be impacted by light pollution from proposed works if no lighting plans are implemented. However, no suitable foraging habitat was to be lost as part of works, and works will not interrupt / separate surrounding linear features, hence development proposals, will not negatively impact foraging, commuting or roosting bats.

SBIS search returned 19 records of bats, including the following:

- Brown long-eared bat (*Plecotus auritus*)
- Bat (Chiroptera)
- Common pipistrelle (*Pipistrellus pipistrellus*)

- *Plecotus spp.*
- *Myotis spp.*
- Noctule
- *Pipistrellus spp.*
- Serotine (*Eptesicus serotinus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Western barbastelle (*Barbastella barbastellus*)

The closest record (TM073453) was of a brown long-eared bat, 1.7 km south of the Site.

Birds

SBIS returned 471 records of 59 bird species (see appendix VII). These included BoCC red listed, SPI and Local Biodiversity Action Plan (LBAP) species, the closest record (TM075481) was of a house sparrow (*Passer domesticus*), 1.1 km north of the site.

No bird nests were found within the site boundary. The cowshed did have several openings that provided internal access for roosting and nesting birds, although few ledges/ beams/ crevices that were present to provide suitable nesting structures. Several shrubs north and east of the cowshed did offer potential nesting opportunities for birds.

No evidence of barn owls (*Tyto alba*), including pellets, droppings, nests, and feathers, was identified on Site during the survey. However, 11 records of barn owls were returned in the SBIS search; the closest record was within the Site, 1.4 km south of the centre of the Site (TM075456).

Hazel Dormice

SBIS did not return any records of hazel dormice (*Muscardinus avellanarius*).

The Site was considered unsuitable for hazel dormice as the Site did not contain and was not connected to substantial areas of woodland, and no hazel trees, their preferred food source, was found onsite. Additionally, the site lacked connectivity to areas of woodland that could support a viable population of dormice.

No evidence of hazel dormice was identified on the Site during the survey.

Great Crested Newts

SBIS returned three records of GCN (*Triturus cristatus*). The closest record was 2 km south-west of the Site.

Habitats on Site had sub-optimal sheltering and hibernating opportunities GCN and other amphibians during terrestrial phases (such as several discarded items, such as rubber tyres and broken roof sheets), but these were surrounded by hardstanding, adjacent buildings, and brick walls, and were essentially isolated from surrounding ponds. In addition, the area was shaded by surrounding infrastructure, and was unlikely to receive adequate levels of direct sunlight for hibernating amphibians.

Shrubland to the north and east of site had the potential to be used by GCN during terrestrial phases, but brick-based walls extending across the majority of the northern and eastern elevations restrict access for amphibians to site, and as the site itself is predominately

hardstanding, there is little incentive for amphibians to enter site and thus are unlikely to be impacted by works.

Six ponds in total were identified within a 250 m radius of the Site (see Appendix IV for a map of pond locations). The nearest pond, pond 1, was located 150m east of site beyond an area of amenity grassland.

Hedgehogs

SBIS returned three records of hedgehogs (*Erinaceus europaeus*); the closest record (TM0658546141) was 1.3 km south-west of the Site.

The Site was considered unsuitable for hedgehogs, as it lacked adequate foraging and hibernation opportunities, such as woodpiles, and woodland. Dense scrub bordering the access driveway and in the garden beyond the north-east of site offered limited foraging opportunities for hedgehogs, but as the potential loss of habitat was limited to several ornamental plants, the proposed plans are highly unlikely to impact local hedgehog populations.

Although no evidence of hedgehogs was recorded during the survey, the data search returned 43 records of hedgehog within 2km of the Site from 2006 to 2021. These records were predominantly sighted in urban gardens within the town of Debenham, with most of the remaining records being sighted along roads (likely deceased). The closest record was approximately 830m north of site on Bewell Road. There were no signs of hedgehog (such as droppings, runs, nests, skins and animals) found during the survey.

No evidence of hedgehogs, including droppings, runs, nests and skins, was found on Site.

Invertebrates

SBIS returned 78 records of 47 species of invertebrate. The closest record (TM076480) was of a white-letter hairstreak moth (*Satyrrium w-album*) 1 km south of the Site.

Habitats onsite were predominately hardstanding and buildings, and while there were small areas of shrub, the majority was comprised of ornamental planting and was not sufficient in area to have a significant impact on local invertebrate populations. Amenity grassland, trees and shrubs to the north-east of site offered greater potential for foraging and sheltering invertebrates, but these habitats adjacent to site are unlikely to possess rare or protected species.

Reptiles

SBIS did not return any records of reptiles.

Habitats onsite were considered unsuitable for reptiles, due to the lack of foraging, sheltering and breeding opportunities such as compost heaps, long grass, scrub, or ponds. A few items of debris were noted, such as tyres and broken roofing material, but due to the isolation from adjoining habitats and relative shade of the courtyard area, these were unlikely to be used by sheltering reptiles.

No evidence of reptiles, including droppings and sloughs, was found on-Site during the survey.

Other Protected Species

SBIS returned two records of European otters (*Lutra lutra*); the closest record (TM0755845759) was 1.2 km south of the Site. The presence of connective hedgerow habitat, wooded areas, and scrub growth along tributaries of the River Gipping to the south of the Site are likely suitable for sheltering otters. There were no signs of otters (spraint, holts, paw prints, feeding remains) on the Site.

There were three records of water voles (*Arvicola amphibius*); the closest record (TM0768648848) 1.9 km north of the Site. There were no signs of water voles (droppings, feeding remains, burrows) on the Site.

There was one record of a harvest mouse (*Micromys minutus*) 1.5 km south-east (TM0869645916), and one of a polecat (*Mustela putorius*), 2.8 km south-west of the Site.

There were also two records of smooth newts (*Lissotriton vulgaris*). The closest record (TM05744652) was of a smooth newt 1.9 km west of the Site. As GCN and smooth newts often share the same habitats, if the Site was enhanced to attract GCN, it is possible that smooth newts would also become more abundant within the Site.

5 Potential Impacts and Biodiversity Enhancement Recommendations

5.1 Statutory Designated Areas

The Site falls within three SSSI Impact Risk Zones. As the Site is very small, and planning is for the development of the barn into a residential dwelling (including biodiversity enhancements), the developments will not impact the status of any surrounding SSSIs.

5.2 Flora and Habitats

The proposed development includes the conversion of a former cow shed. This will result in the loss of existing niches within the structures and likely the removal/ replacement of shrubs within the courtyard (a list plant species recorded onsite can be found in Appendix III). The lost habitat is not listed within the Section 41 of the NERC Act 2006 as being of principle important to the conservation of biodiversity within the UK.

No trees were present within the proposed construction zone, and trees in adjacent habitats, i.e., the garden north-east of site, were considered to be small / of a sufficient distance from site and will not be impacted by works. If proposals were to be altered to include trees that may be impacted by works, then tree surveys may need to be conducted and advice should be sought by a suitably experienced ecologist.

As only a minimal amount of vegetation was due to be impacted by works, further botanical survey is not considered necessary, nor were additional enhancement features; however, any mature trees within close proximity of the Site should be suitably protected from harm following guidance set out in BS5837 (2012).

5.3 Protected species

Badgers

Habitats on the Site were considered unsuitable for badger foraging; no badger signs were observed during this survey, and no records were returned within the data search.

No further survey is necessary; however, as a precautionary measure, construction works should have implemented several precautionary measures, including the following:

- Safe storage of materials that may harm badgers and other animals
- Covering excavations overnight to prevent animals falling in, or the provision of an escape ramp
- Wildlife-sensitive lighting, following the 'Bats and artificial lighting in the UK' guidelines as set out by the Bat Conservation Trust (BCT, 2018).

Bats

Structures onsite assessed for roost suitability (the cowshed) was considered to have negligible potential for supporting roosting bats, **and no further survey is necessary.**

Although habitats onsite were predominately hardstanding and a building, adjacent habitats including trees, shrubland, ponds, hedgerow and amenity grassland did offer some foraging and commuting opportunities for bats. As these habitats were in close proximity to site, 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

No bird nests were identified onsite, although nesting opportunities were present via ledges and beams within structures onsite and dense shrubs lining the driveway.

The SBIS 2 km data search also returned numerous species for which the habitat on Site is suitable for foraging, sheltering, and breeding (Appendix VII). Although no signs were observed during the survey, SBIS returned nearby records of barn owls, which may use the Site as foraging grounds.

No bird surveys are required. Any building demolition or clearance should be carried out outside the breeding bird season (which runs from March to September) or following a nesting bird survey by a suitably experienced ecologist – to prevent infringing legislation which protects all nesting birds.

If bird nests are found onsite, temporary exclusion zones will be set up to be placed around them until such time that the dependent young have fledged and left the area. The distance of which would depend on the species recorded. The peak bird breeding season extends between March and August (inclusive of these months), although active nests can theoretically be encountered at any time of the year.

Great Crested Newts

Although some areas within the Site were suitable for hibernating GCN, no GCN were identified on Site during the survey.

Although potential breeding ponds were present within 250m of Site, the habitats within itself the Site provided only minimal foraging and sheltering opportunities for amphibians during terrestrial phases. Three records of GCN were returned in the 2 km radius SBIS data search, none of which were within 1km of site. No GCN were identified during the site survey.

As the site was considered unsuitable for GCN, and the proposed development size was small (less than 0.01ha), **no surveys will be required.**

Hazel Dormice

No hazel dormice were identified on Site during the survey, and no SBIS records were returned. No further survey effort was considered necessary.

Hedgehogs

Further survey is not considered necessary, however, as there are nearby records of this species, and the adjacent habitats were likely suitable, **any potential nesting habitat (discarded building materials, log piles, dense vegetation) 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 at the Site boundaries allows movement of hedgehogs throughout the Site post-development.

Invertebrates

The Site contained minimal 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 survey is not considered necessary.**

Reptiles

No signs of reptiles were seen during the survey, and no records were returned in the SBIS 2 km data search. Due to the habitat types present, shaded conditions, the size of site and relative isolation from habitats with greater suitability for reptiles, the risk to reptiles is considered minimal and **no further survey is required.**

Other Protected Species

No further survey is required (due to habitat types being lost and overall size) would not be significantly impacted any protected species.

6 Enhancement

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)¹

- “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.

Enhancement

- **Bat boxes**, such as Kent bat boxes and bat tiles would increase roosting opportunities for bats within the site. Exact models and locations should be determined by a suitably experienced ecologist.
- **New and replacement plantings** within the proposed development should constitute at least 50% native species by area. Ornamental species should include a preponderance of species of known value to wildlife, such as fruiting species, and of species providing a nectar source which are attractive to insects. All planting should be structurally diverse, with areas of dense scrub as well as open areas.
- At least two **bird boxes** are recommended, such as Robin FSC Nest Box or WoodStone Seville Box, erected on either the gable ends of the cow shed or nearby suitable trees / structures, which would provide additional nesting opportunities for local bird populations.

¹ 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.

- Brash piles from removed shrubs and branches (if ornamental shrubs are to be removed), are an excellent source of nesting material for many bird species, and can provide good sheltering and hibernating opportunities for hedgehogs and many herpetofauna species
- Further enhancements (such as providing deadwood, or compost areas) would provide foraging opportunities for a range of bird species.

7 Conclusions

7.1 Overview

The Preliminary Ecological Appraisal found the Site to have low-moderate potential for nesting birds and foraging / commuting bats, and negligible potential for great crested newts, bats, and reptiles. The site was found to be predominately building area and hardstanding, with small areas of ornamental vegetation and raised flower beds, which were found to have and although there were nesting opportunities for birds within the cowshed and shrubs onsite, it was unlikely that other protected species would be using site.

As adjacent habitats were more likely to support protected species (particularly hedgehogs, and foraging / commuting bats), several precautionary recommendations have been made regarding those species groups.

7.2 Recommendations

The following recommendations are made to minimise the risk of harm to individual animals:

- Sensitive lighting measures for bats.
- Covering of excavations and/or provision of exit ramps 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 (dense scrub) is carried out outside the breeding bird season (which runs from March to September) or following a nesting bird survey by a suitably experienced ecologist.
- Any fencing at the Site boundaries allows movement of hedgehogs throughout the Site post-development.

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.

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

7.3 Recommendations for Biodiversity Enhancements

Enhancement features, such as bat boxes, wild planting and bird boxes, will be incorporated into the final designs and therefore provide additional breeding, foraging, and sheltering opportunities for a range of wildlife.

8 Validation

Table 3. Validity duration of the data.

Information Source	Date Undertaken	Valid Until	Comments
PEA	19/04/23	19/04/25 (2 years)	Providing there are no changes to current planning applications, no further surveys will be required – only advisory recommendations.

9 References

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<http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>





<https://www.nature.scot/doc/guidance-badgers-artificial-sett-construction>

10 Appendices



10.1 Appendix I. Site photographs.




Site Photographs	
	
<p>Photo ref 1 -Western elevation of cow shed</p>	<p>Photo ref 2- Cow shed (left), adjacent building (right).</p>
	
<p>Photo ref 3- Shrubs within the courtyard, isolated from other habitats due to surrounding hardstanding.</p>	<p>Photo ref 4- Interior, facing south</p>
	
<p>Photo ref 5- Hardstanding courtyard to the west of the cow shed, containing disused flowerbeds with short ruderal plants.</p>	<p>Photo ref 6- southern elevation of cow shed</p>
	

<p>Photo ref 7 –Owing to the layer of dust present, the majority of the items within the cow shed had likely been present for an extended period of time. None of these surfaces contained bat droppings or other signs.</p>	<p>Photo ref 8- Owing to the layer of dust present on the window the majority of the items within the cow shed had likely been present for an extended period of time. None of these surfaces contained bat droppings or other signs.</p>
	
<p>Photo ref 9- Crevices between the eastern and southern walls. Light ingress penetrating through the wall and loose flintstones made these areas unlikely to be used by roosting bats.</p>	<p>Photo ref 10- Surfaces in the cowshed contained no bat droppings or other signs of bats.</p>
	
<p>Photo ref 11- Eastern elevation of cow shed.</p>	<p>Photo ref 12- Several missing bricks, were present, but holes created were shallow and lacked roost potential.</p>
	
<p>Photo ref 13- Northern elevation of cow shed</p>	<p>Photo ref 14- Gaps underneath a section of concrete flooring could potentially be used by rodents, but was shaded and surrounded by exposed hardstanding.</p>

	
<p>Photo ref 15- The cow shed was currently being used as a workshop / storage area, containing items such as packaged timber.</p>	<p>Photo ref 16- Light ingress from ridge of cow shed roof</p>
	
<p>Photo ref 17- Interior of cow shed, facing south-east. Mammal traps were</p>	<p>Photo ref 18- Interior of cow shed, facing north</p>

10.2 Appendix II. Target (T) photographs and notes.

Target Photographs	
	
<p>Target Note 1- Courtyard area, facing south. Isolated from habitat with no to little potential habitat for wildlife.</p>	<p>Target Note 2- Interior of cow shed, facing south. The barn was exposed to a high degree of light ingress no suitable bat habitat</p>

	
<p>Target Note 3- Missing ridge tiles and missing pan tiles (see TN4) were noted on the building checked with endoscope no bat or bird signs found.</p>	<p>Target Note 4- Lifted ridge tiles close to northern gable end of roof. checked with endoscope no bat or bird signs found</p>
	
<p>Target Note 5- Roofing material that provided potential refugia but no signs of protected species were found.</p>	

10.3 Appendix III. Species list

Table 4: List of species found onsite. Signs such as burrows, nests, casts or faeces that can be confidently identified have been included and taken as evidence of the presence of certain species.

Species List		
Group	Common name/s	Latin name
Plants	Bramble	<i>Rubus fruticosus</i>
	Butter cup*	<i>Ranunculus bulbosus</i>
	Clematis*	<i>Clematis spp.</i>
	Comfrey*	<i>Symphytum</i>
	Common chickweed	<i>Stellaria media</i>
	Common daisy*	<i>Bellis perennis</i>
	Common dandelion	<i>Taraxacum officinale</i>
	Common ivy	<i>Hedera helix</i>
	Common vetch	<i>Vicia sativa</i>
	Cuckoo pint / Lords & Ladies	<i>Arum maculatum</i>
	Daffodil (non-native hybrid)	<i>Narcissus spp.</i>
	Eucalyptus*	<i>Eucalyptus</i>
	Forsythia*	<i>Forsythia spp.</i>
	Forget me nots	<i>Myosotis spp.</i>
	Grape hyacinths	<i>Muscari spp.</i>
	Groundsel	<i>Senecio vulgaris</i>
	Hebe	<i>Hebe spp.</i>
	Hellebore	<i>Helleborus spp.</i>
	Holly*	<i>Ilex aquifolium</i>
	Honeysuckle*	<i>Lonicera</i>
	Iris*	<i>Iridaceae spp.</i>
	Lavender	<i>Lavandula</i>
	Lesser celandine*	<i>Ficaria verna</i>

	Lords & Ladies	<i>Arum maculatum</i>
	Mediterranean spurge	<i>Euphorbia characias</i>
	Oriental poppy	<i>Papaver orientale</i>
	Primrose	<i>Primula vulgaris</i>
	Prunus species	<i>Prunus spp.</i>
	Pyrenean fritillary	<i>Fritillaria pyrenaica</i>
	Red Dead Nettle	<i>Lamium purpureum</i>
	Rose	<i>Rosa spp.</i>
	Silver birch	<i>Betula pendula</i>
	Strawberry	<i>Fragaria vesca</i>
	Tulips	<i>Tulipa</i>
	Yew*	<i>Taxus baccata</i>
Birds	Eurasian blue tit*	<i>Cyanistes caeruleus</i>
	Great tit*	<i>Parus major</i>
	Song thrush*	<i>Turdus philomelos</i>
	Wood pigeon	<i>Columba palumbus</i>
Mammals	Reeve's muntjac*	<i>Muntiacus reevesi</i>
Invertebrates	Garden snail	<i>Cornu aspersum</i>
	Hairy Footed Flower Bee*	<i>Anthophora plumipes</i>
	Honey Bee*	<i>Apis spp.</i>
	Peacock butterfly	<i>Aglais io</i>

*These species were identified adjacent to site / on the site boundary in the garden area to the north-west, within an area not scheduled to be impacted by works.

10.4 Appendix IV. Figures

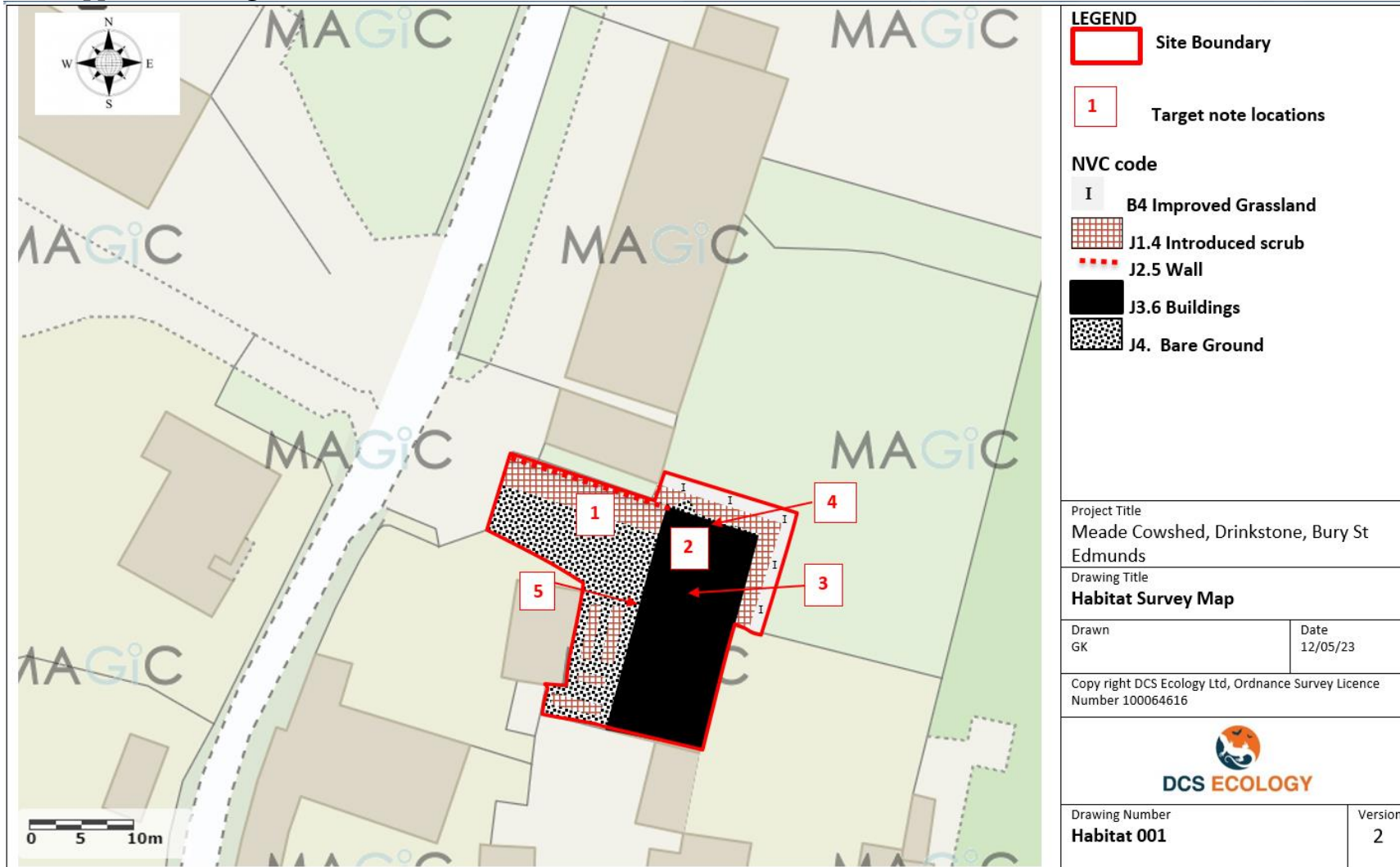


Figure 2: Phase 1 Habitat map (according to JNCC).

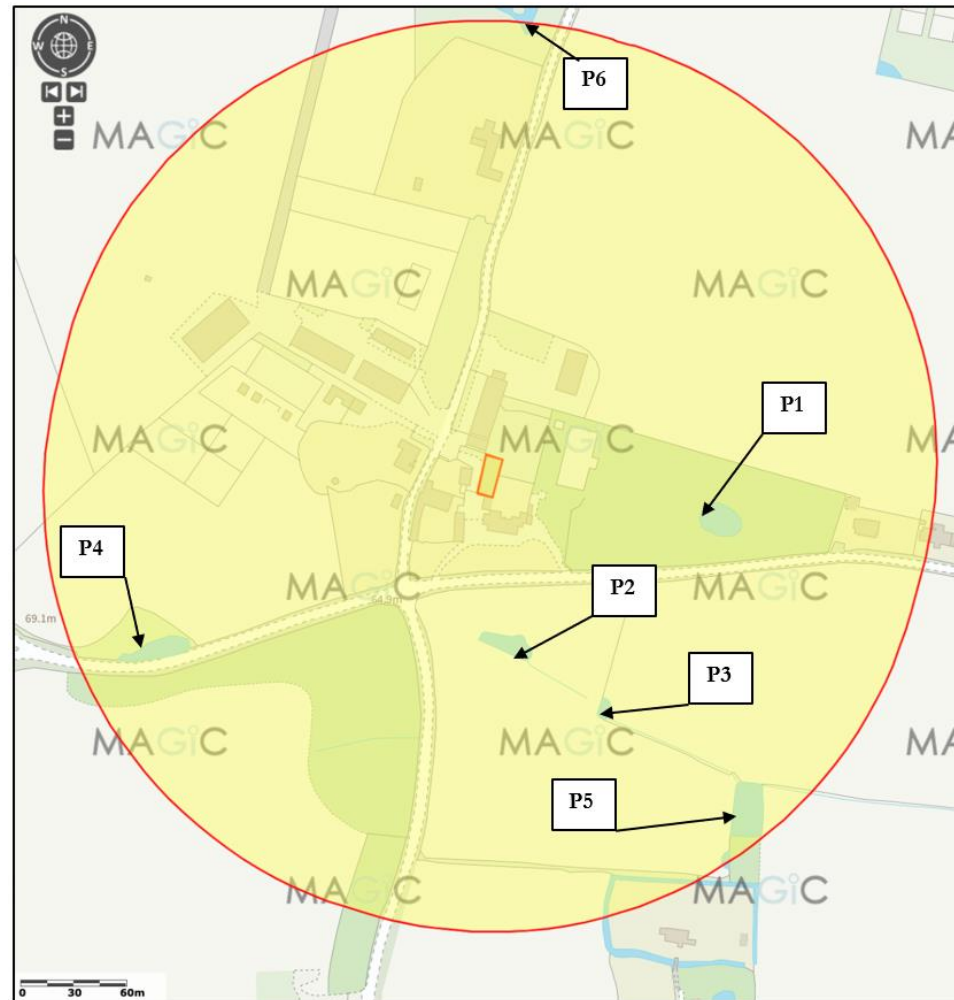
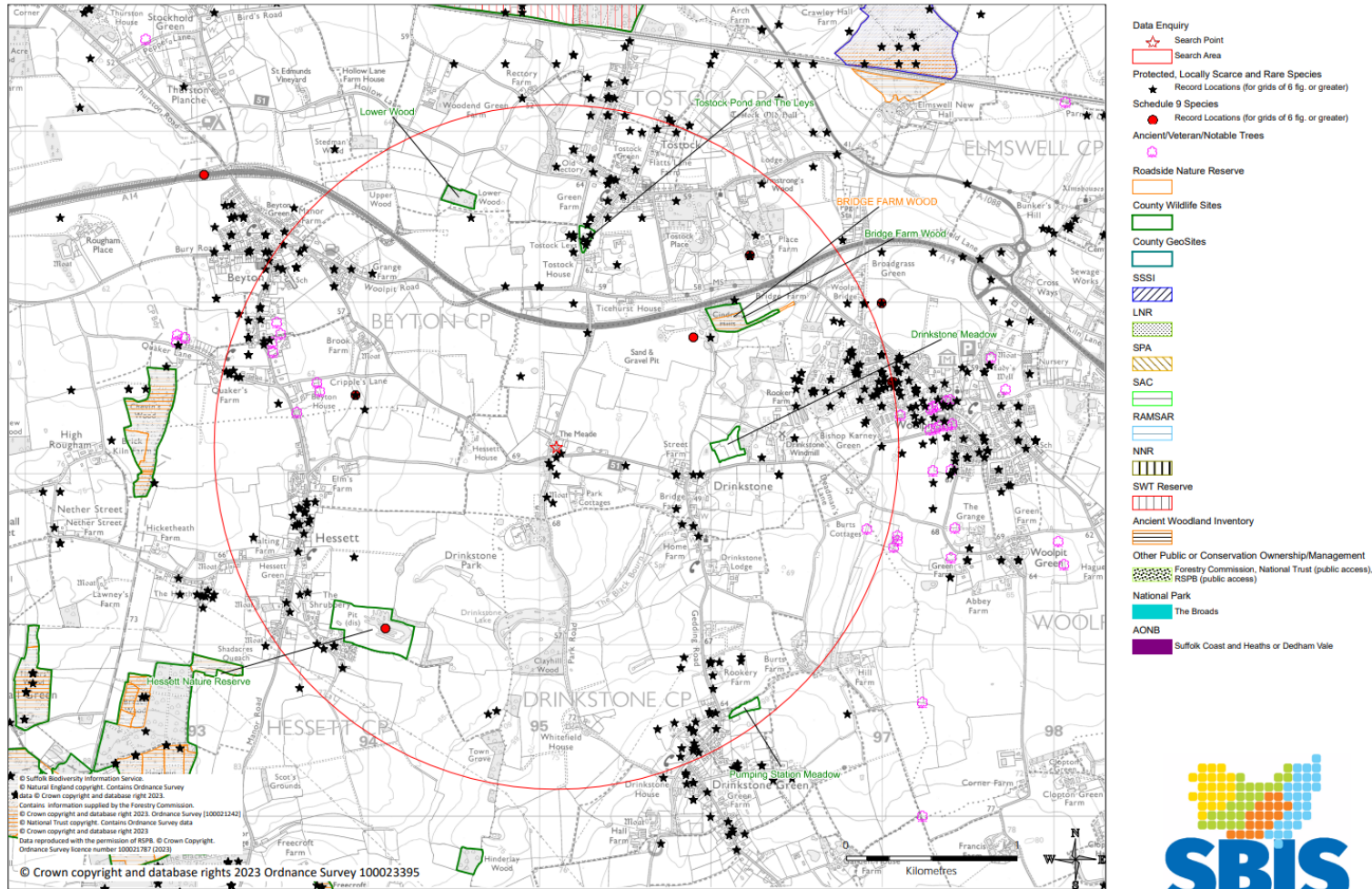


Figure 3 Great Crested Newt Habitat Suitability Index Map 250m, showing standing water within 250m of site. Contains Ordnance Survey data © Crown copyright and database right 2023, under licence 100064616.



DCS Ecology (Meade Barn, Drinkstone TL95106216) 2km Data Enquiry



Date: 23/02/2023 | Drawn by: Jane Mason

Figure 4. European Protected Species within 2 km of the Site (data from SBIS).

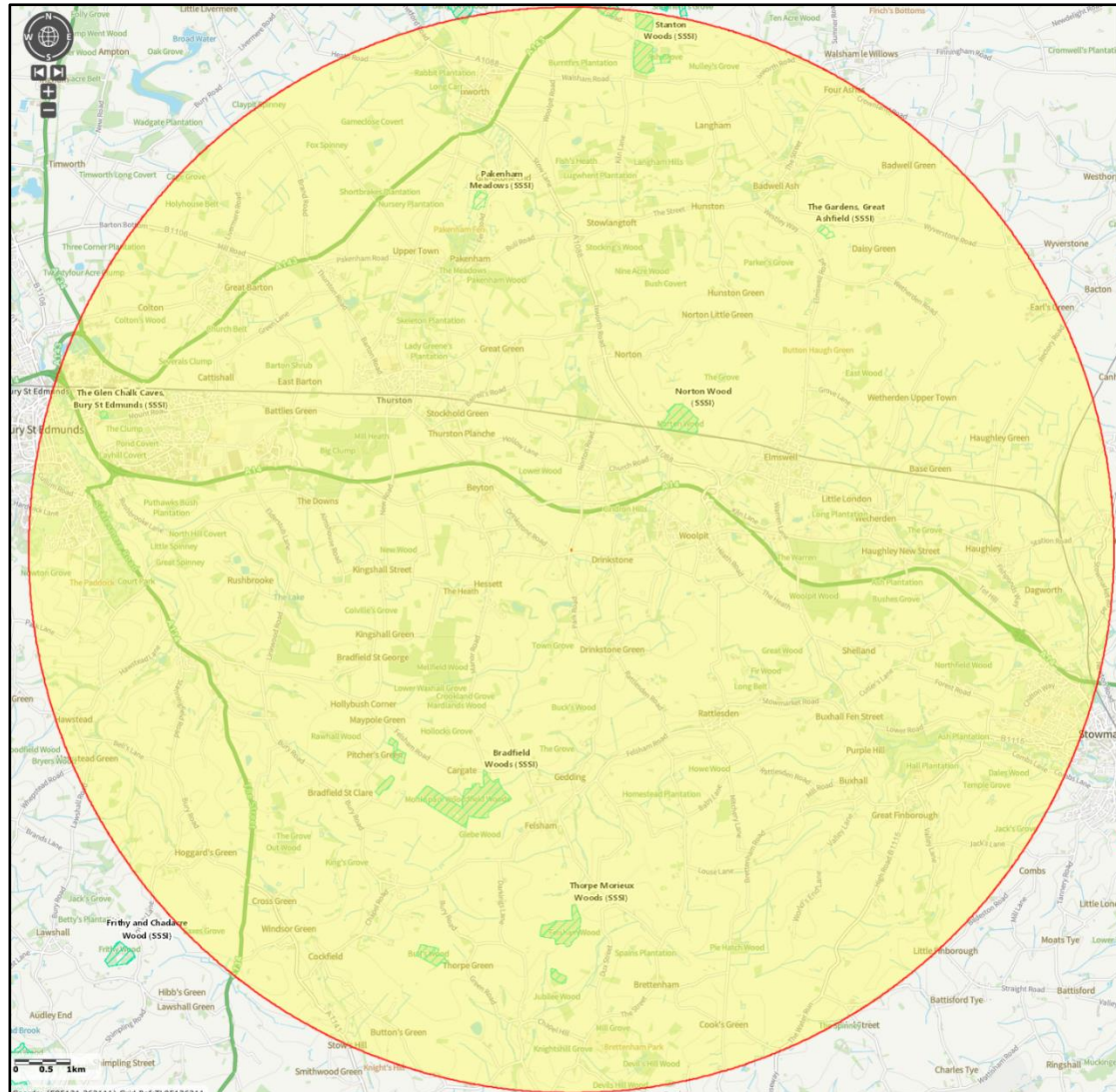


Figure 5. European Conservation Sites within 10 km of the Site (1:50000). Contains Ordnance Survey data © Crown copyright and database right 2023, under licence 100064616.

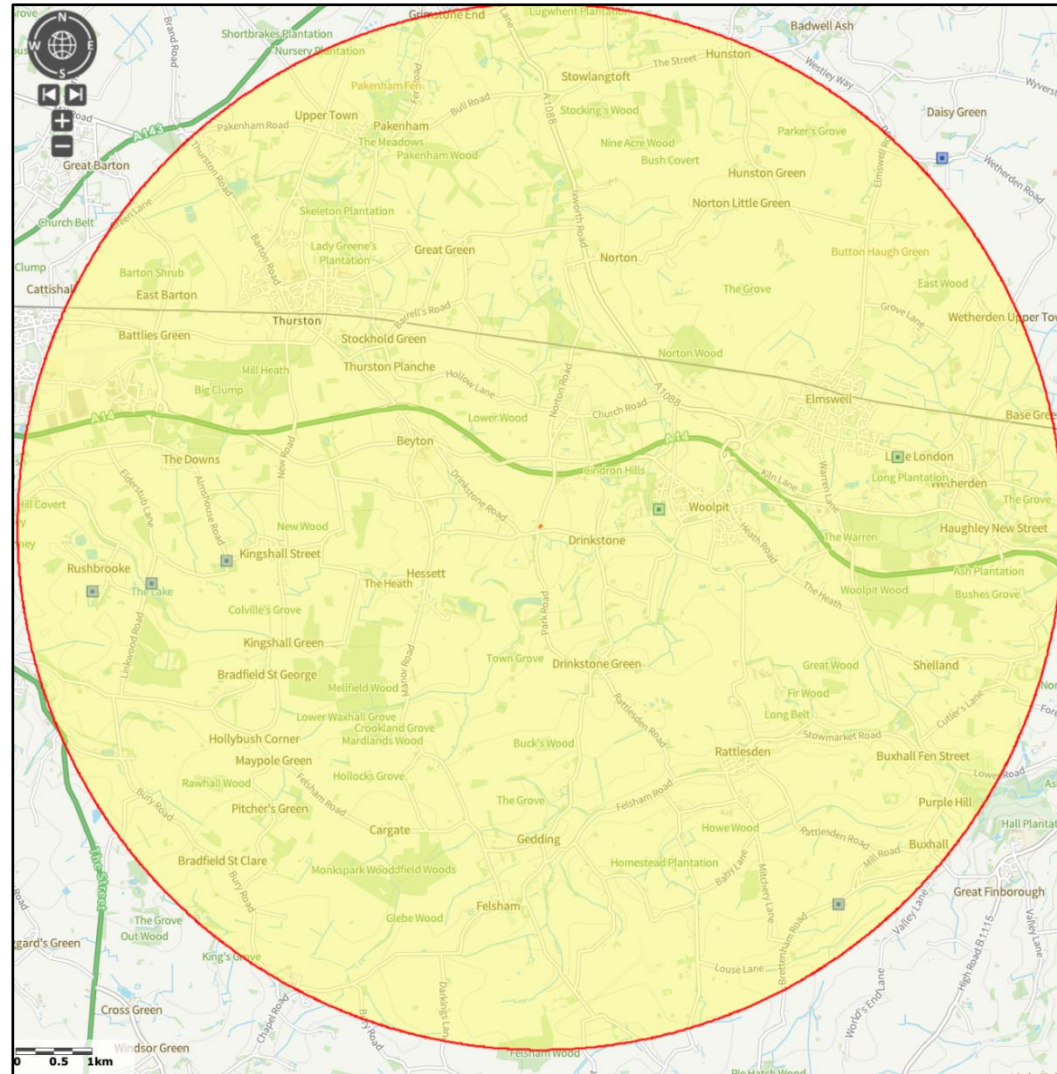


Figure 6. Protected species recorded on MAGIC Map within 7 km of the Site (1:50000). Contains Ordnance Survey data © Crown copyright and database right 2023, under licence 100064616.

10.5 Appendix V. 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.

10.6 Appendix VI. Relevant UK legislation to flora and fauna highlighted in the PEA.

Species	Legislation	Protection
Bats	<ul style="list-style-type: none"> • Conservation of Habitats and Species Regulations 2010 (as amended) • Wildlife and Countryside Act 1981, Schedule 5 (as amended) • Wild Mammals Act 1996 	It is an offence to: <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 (GCN)	<ul style="list-style-type: none"> • Conservation of Habitats and Species Regulations 2010 (as amended) • Wildlife and Countryside Act 1981, Schedule 5 (as amended) 	It is an offence to: <ul style="list-style-type: none"> • Intentionally kill, injure, or take a GCN. • Intentionally or recklessly disturb a GCN. • Intentionally or recklessly damage, destroy or obstruct access to any place used by a GCN for shelter or protection.
Badgers	<ul style="list-style-type: none"> • Wildlife and Countryside Act 1981 (as amended), Schedule 5 as amended • Protection of Badgers Act 1992 	It is an offence to: <ul style="list-style-type: none"> • Intentionally take, injure, or kill badgers. • Be cruel towards badgers. • Interfere with badger setts. • Sell and possess live badgers. • Mark and ring badgers.
Birds	<ul style="list-style-type: none"> • Wildlife and Countryside Act 1981 (as amended) 	It is an offence to: <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 protection, making it an offence to intentionally or recklessly disturb such species at, on or near an active nest.</p>

10.7 Appendix VII. List of abbreviations.

BAP	Biodiversity Action Plan
BARB	Barbastelle (bat)
BCT	Bat Conservation Trust
BLE	Brown long-eared (bat)
BoCC	Birds of Conservation Concern
CHSR	Conservation of Habitats and Species Regulations 2017
CIEEM	Chartered Institute of Ecology and Environmental Management
C. PIP	Common pipistrelle (bat)
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
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPAs	Local Planning Authorities
MAGIC	Multi-Agency Geographic Information for the Countryside
NATT	Natterer's (bat)
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
S. PIP	Soprano pipistrelle (bat)
SSSI	Special Site of Scientific Interest
WCA	Wildlife and Countryside Act 1981 (as amended)
UKBAP	United Kingdom's Biodiversity Action Plan

10.8 Appendix VIII. Protected and priority bird species records within 2 km of the Site.

Species	Status	Most Recent Record
Lesser redpoll (<i>Acanthis cabaret</i>)	ScotBL, Sect.41, UKBAP	2008
Mealy redpoll (<i>Acanthis flammea flammea</i>)	Bern2, BRed	2007
Goshawk (<i>Accipiter gentilis</i>)	CITESA, CMS_A2, WCA1i	2008
Sparrowhawk (<i>Accipiter nisus</i>)	BAmb, CITESA, CMS_A2	2020
Marsh warbler (<i>Acrocephalus palustris</i>)	BRed, Sect.41, UKBAP, WCA1i	2008
Sedge warbler (<i>Acrocephalus schoenobaenus</i>)	BAmb	2011
Mandarin duck (<i>Aix galericulata</i>)	CMS_A2	2011
Skylark (<i>Alauda arvensis</i>)	BD2.2, BRed, ScotBL, Sect.41, UKBAP	2020
Kingfisher (<i>Alcedo atthis</i>)	BD1, Bern2, ScotBL, WCA1i	2021
Teal (<i>Anas crecca</i>)	BAmb, BD2.1, CITESC, CMS_A2, CMS_AEWA-A2	2017
Mallard (<i>Anas platyrhynchos</i>)	BAmb, BD2.1, CMS_A2, CMS_AEWA-A2	2017
White-fronted goose (<i>Anser albifrons</i>)	BD2.2, BRed, CMS_A2, CMS_AEWA-A2, ScotBL, UKBAP	2020
Greylag goose (<i>Anser anser</i>)	BAmb, BD2.1, CMS_A2, CMS_AEWA-A2, WCA1ii	2018
Pink-footed goose (<i>Anser brachyrhynchus</i>)	BAmb, BD2.2, CMS_A2, CMS_AEWA-A2	2008
Meadow pipit (<i>Anthus pratensis</i>)	BAmb, Bern2	2020
Swift (<i>Apus apus</i>)	BRed, ScotBL	2020
Great white egret (<i>Ardea alba</i>)	BAmb, Bern2, CITESA, CMS_AEWA-A2	2021
Grey heron (<i>Ardea cinerea</i>)	CMS_AEWA-A2	2018
Little owl (<i>Athene noctua</i>)	Bern2, CITESA	2021
Pochard (<i>Aythya ferina</i>)	BD2.1, BRed, CMS_A2, CMS_AEWA-A2, ScotBL	2008
Tufted duck (<i>Aythya fuligula</i>)	BD2.1, CMS_A2, CMS_AEWA-A2	2018

Scaup (<i>Aythya marila</i>)	BD2.2, BRed, CMS_A2, CMS_AEWA-A2, ScotBL, Sect.41, UKBAP, WCA1i	2020
Canada goose (<i>Branta canadensis</i>)	BD2.1, CMS_A2	2017
Barnacle goose (<i>Branta leucopsis</i>)	BAmb, BD1, Bern2, CMS_A2, CMS_AEWA-A2, ScotBL	2015
Cattle egret (<i>Bubulcus ibis</i>)	BAmb, CITESA, CMS_AEWA-A2	2017
Goldeneye (<i>Bucephala clangula</i>)	BD2.2, BRed, CMS_A2, CMS_AEWA-A2, WCA1ii	2012
Buzzard (<i>Buteo buteo</i>)	CITESA, CMS_A2	2020
Little ringed plover (<i>Charadrius dubius</i>)	Bern2, CMS_A2, CMS_AEWA-A2, WCA1i	2021
Black tern (<i>Chlidonias niger</i>)	BD1, Bern2, CMS_AEWA-A2, WCA1i	2009
Greenfinch (<i>Chloris chloris</i>)	Bern2, BRed	2017
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	BAmb, BD2.2, CMS_AEWA-A2, ScotBL	2020
Dipper (<i>Cinclus cinclus</i>)	BAmb, Bern2	2016
Marsh harrier (<i>Circus aeruginosus</i>)	BAmb, BD1, CITESA, CMS_A2, ScotBL, WCA1i	2016
Hen harrier (<i>Circus cyaneus</i>)	BD1, BRed, CITESA, CMS_A2, ScotBL, Sect.41, WCA1i	2015
Hawfinch (<i>Coccothraustes coccothraustes</i>)	Bern2, BRed, ScotBL, Sect.41, UKBAP	2017
Rock dove (<i>Columba livia</i>)	BD2.1, CITESA	2017
Stock dove (<i>Columba oenas</i>)	BAmb, BD2.2	2018
Rook (<i>Corvus frugilegus</i>)	BAmb, BD2.2	2019
Cuckoo (<i>Cuculus canorus</i>)	BRed, ScotBL, Sect.41, UKBAP	2021
Whitethroat (<i>Curruca communis</i>)	BAmb	2020
Mute swan (<i>Cygnus olor</i>)	BD2.2, CMS_A2, CMS_AEWA-A2	2022
House martin (<i>Delichon urbicum</i>)	Bern2, BRed	2016
Lesser spotted woodpecker (<i>Dryobates minor</i>)	Bern2, BRed, UKBAP	2008

Little egret (<i>Egretta garzetta</i>)	BD1, Bern2, CITESA, CMS_AEWA-A2	2018
Corn bunting (<i>Emberiza calandra</i>)	BRed, ScotBL, UKBAP	2008
Yellowhammer (<i>Emberiza citrinella</i>)	Bern2, BRed, ScotBL, Sect.41, UKBAP	2021
Reed bunting (<i>Emberiza schoeniclus</i>)	BAmb, Bern2, ScotBL, Sect.41, UKBAP	2017
Peregrine (<i>Falco peregrinus</i>)	BD1, Bern2, CITESA, CMS_A2, ScotBL, WCA1i	2021
Hobby (<i>Falco subbuteo</i>)	Bern2, CITESA, CMS_A2, ScotBL, WCA1i	2019
Kestrel (<i>Falco tinnunculus</i>)	BAmb, Bern2, CITESA, CMS_A2, ScotBL	2020
Brambling (<i>Fringilla montifringilla</i>)	ScotBL, WCA1i	2008
Coot (<i>Fulica atra</i>)	BD2.1, CMS_AEWA-A2	2017
Snipe (<i>Gallinago gallinago</i>)	BAmb, BD2.1, CMS_A2, CMS_AEWA-A2	2003
Moorhen (<i>Gallinula chloropus</i>)	BAmb, BD2.2, CMS_A2, CMS_AEWA-A2	2017
Oystercatcher (<i>Haematopus ostralegus</i>)	BAmb, BD2.2, CMS_AEWA-A2	2017
White-tailed sea eagle (<i>Haliaeetus albicilla</i>)	BAmb, BD1, CITESA, CMS_A1, CMS_A2, ScotBL, WCA1i	2020
Little gull (<i>Hydrocoloeus minutus</i>)	BD1, Bern2, CMS_AEWA- A2, WCA1i	2009
Herring gull (<i>Larus argentatus</i>)	BD2.2, BRed, CMS_AEWA-A2, ScotBL, UKBAP	2020