

# ECOLOGY AND PROTECTED SPECIES SURVEY

## BARNES AT MAREHAM LANE, SPANBY, LINCOLNSHIRE

September 2021



**Issued to:**

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# ECOLOGY AND PROTECTED SPECIES SURVEY

## BARNs AT MAREHAM LANE, SPANBY, LINCOLNSHIRE

### 1 INTRODUCTION

Helen Scarborough has been commissioned by Mr Mark Jones to undertake an ecology and protected species survey of barns at Mareham Lane, Spanby Lincolnshire. The survey is required in connection with plans to convert the barns for residential use, with associated garage and annexe/home office/workshop.

The site was initially surveyed on 5th July 2021 by Helen Scarborough (registered to use Natural England Class Licences WML-CL08 to survey great crested newts; registration number 2016-20412-CLS-CLS, WML-CL19 and WML-CL20 to survey bats; registration numbers 2015-12691-CLS-CLS and 2015-12692-CLS-CLS respectively) and Sarah Vinters.

Further evening surveys were undertaken on the 5<sup>th</sup> July 2021, 4<sup>th</sup> August 2021 and 16<sup>th</sup> September 2021.

During the initial appraisal of the site the protected species considered likely to occur on site were identified. These were:

- Bats
- Common bird species
- Schedule 1 bird species

Certain protected species were scoped out of the survey; in particular it was considered that white-clawed crayfish *Austropotamobius pallipes*, common dormouse *Muscardinus avellanarius*, common reptiles and otter *Lutra lutra* were highly unlikely to occur on the survey site due to lack of suitable habitat.

No signs of use by badger *Meles meles* were noted in the environs of the buildings.

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No waterbodies were noted on or adjacent to the site. There are no records for specially protected amphibian species from within 1km of the site.

A note was made of any species which are priority species for conservation.

This report details the methods used, describes the species found on the site, discusses the results and makes recommendations for further work.

## **2 METHODS**

### **2.1 Data search**

Lincolnshire Environmental Records Centre (LERC) was consulted and commissioned on 1st September 2021 to search for sites with statutory and non-statutory designation and records of protected species within 1km of the survey site. Records of protected species more than 20 years old are not referred to in this report, but are included within the relevant appendix.

### **2.2 Bats**

#### **2.2.1 Preliminary roost assessment**

In accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> Edition (Collins J, 2016), a preliminary roost assessment was carried out on each of the buildings to determine whether any features were present that bats could use for entry/exit points and roosting, and to search for signs of bat presence. High-powered torches, ladders and binoculars were used to search for internal and external features including but not limited to;

- Gaps around windowsills, door frames and lintels
- Lifted rendering, paintwork, shiplap boarding
- Soffit boxes, weatherboarding and fascias
- Lead flashing, hanging tiles and lifted or missing tiles/slate
- Gaps >15mm in brickwork and stonework
- Bat specimens (live or dead)
- Bat droppings and urine staining
- Feeding remains (e.g. moth wings)
- Cobweb-free sections of ridge beam

Each building was then assigned a measure of potential suitability to determine the extent of future survey work needed. The categories of potential suitability and further survey effort

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required are as follows;

- Negligible – Negligible features on site likely to be used by roosting bats – no further survey work
- Low – A structure with one or more potential roost sites that could be used by individual bats opportunistically – one survey visit (dusk or dawn)
- Moderate – A structure with one or more potential roost sites that could be used by bats on a regular basis – two separate survey visits (one dusk and one dawn)
- High – A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a regular basis and for longer periods of time – three separate survey visits (one dusk, one dawn and one dusk or dawn).

### **2.2.2 Assessment of commuting and foraging habitats**

In accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> Edition (Collins J, 2016), the survey site and adjacent areas were assessed for their potential suitability for commuting and foraging bats and categorised as follows;

- Negligible – Negligible habitat features on site or in surrounding area likely to be used by commuting or foraging bats
- Low – Habitat features that could be used by small numbers of commuting bats such as a gappy hedgerow or small numbers of foraging bats such as a patch of scrub, but that are isolated from other habitat features
- Moderate – Continuous habitat connected to the wider landscape such as lines of trees that could be used by commuting bats or trees, grassland or water features that could be used by foraging bats
- High – Continuous, high-quality habitat that is well connected to the wider landscape for use by commuting and foraging bats such as river valleys, woodland, grassland and parkland.

## **2.3 Birds**

### **2.3.1 Common bird species**

All bird species noted on site were recorded. The survey site was searched for signs of use by nesting birds, typically old and active nests and concentrations of faecal deposits associated with a breeding site.

### 2.3.2 Schedule 1 species

The buildings were inspected for the presence of barn owl *Tyto alba* and the signs indicative of their past or present use including regurgitated pellets, concentrated accumulations of flattened pellets indicative of a nest site, faecal encrustation, eggs or eggshell remains, surplus prey items, bodily remains of chicks or infant down feathers. The site was not considered to provide suitable breeding opportunities for other Schedule 1 species.

## 2.4 Habitats and plant species

An extended ecological assessment survey was undertaken, not only to identify the habitats present on the survey site, but also to include more detailed information on hedgerows and plant species on site, and undertake a further appraisal of the area as habitat for legally protected species. Plant species on site were assessed against the Vascular Plant Red Data List for Great Britain, and the site was assessed against the Local Wildlife Site (LWS) criteria for Lincolnshire. Any invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981, reviewed in 2010) were also noted.

### 2.4.1 Evening emergence surveys

A team of 2 surveyors undertook the surveys on the 5th July, 3 surveyors on the 4th August and 3 surveyors on the 16<sup>th</sup> September 2021. The surveys started 15 minutes before sunset and continued for 1.5 hours after sunset. The survey conditions for each visit are provided in tabular form below:

**Table 1 – Survey conditions**

Survey date	Temperature	Wind speed	Cloud cover	Precipitation
5 <sup>th</sup> July 2021	16°C	F2	6/8	Dry until 10.00pm, then rain
4 <sup>th</sup> August 2021	16.5-18°C	F1	3/8	Dry
16 <sup>th</sup> September 2021	17-18°C	F1	4/8	Dry

One surveyor was located on the north- west corner of the buildings, one surveyor at the south of the buildings, and the third surveyor on the western side of the buildings - such that all sides could be assessed for emergence with particular attention given to potential roost sites and exit/entry points. Pettersson D-240x ultrasonic time expansion bat detector, an Anabat Walkabout full spectrum detector, a bat box 3 heterodyne detector and an Echo meter touch pro were used to assist the surveys, and to enable acoustic species identification.



## 2.5 Survey constraints and limitations

The information contained in this report was accurate at the time of the survey; however, it should be noted that the status of mobile species such as badger, birds and bats can alter in a short period of time and any survey only represents a 'snapshot' of the site at one point in the season. There are no definitive guidelines relating to the longevity of an ecology report, however we recommend that the results are updated after 12 months if the development or proposed work has not commenced.

## 3 SITE ASSESSMENT

### 3.1 Location and grid reference

The survey site comprises a series of barns located at Mareham Lane, Spanby, Lincolnshire - central grid reference TF0896 3817

The buildings and habitats on site are described in detail below and representative photographs are included in the text. An aerial view of the site location is provided as Figure 1.



Figure 1: Aerial view of the survey site (buildings numbered and outlined in red)

**3.2 Building 1**

Building 1 is open fronted on its north elevation and has stone walls for its south, west and east elevations. It has a timber pitched, unfelted slate and corrugated metal roof. Some areas of the slate roof have gaps and holes.



**Photograph 1: Building 1 - northern elevation**



**Photograph 2: Building 1 - southern elevation**





**Photograph 3: Internal view of Building 1**

### **3.3 Building 2**

Building 2 is of stone and breezeblock construction with a hipped roof of slate laid onto underfelt; it has recently been reroofed and undergone repair work to the internal walls. The western end has an upper floor area with an open sided area below; elsewhere the building is single storey and open to the apex. All the upper floor windows and hatches have been boarded over. The doors on the northern elevation have gaps and areas where access for bats and birds is possible. Climbing ivy *Hedera helix* shrouds the western elevation.



**Photograph 4: Building 2 - northern elevation**



**Photograph 5: Building 2 - southern elevation**



**Photograph 6: Internal view of Building 2**





**Photograph 7: Upper floor of Building 2**



**Photograph 8: Lower floor area of Building 2**



**Photograph 9: Further view of lower floor area of Building 2**

### **3.4 Building 3**

Building 3 is constructed of both brick and stone. There are corrugated metal tin sheets fixed on its western elevation. The roof of the building comprises corrugated metal sheeting fixed to timbers. There is single door opening on the western elevation of the building and a boarded window on its east elevation. This building was once attached to other stone and brick buildings on its northern and southern elevation; these adjoining buildings have now mostly collapsed leaving small areas of walls still standing.





**Photograph 10: Building 3 - western elevation**



**Photograph 11: Building 3 - eastern elevation**

### 3.5 Collapsed buildings and yard area

On the southern and northern sides of Building 3 are the collapsed remains of further buildings; including remnants of corrugated metal and slate roof coverings. Some small areas of stone and brick wall are still standing. Elder *Sambucus nigra* and bramble *Rubus fruticosus agg* scrub occur around the collapsed buildings.

The yard area to the south and east of the building comprises rough grassland/ruderals with scrub. The species recorded are false oatgrass *Arrhenatherum elatus*, teasel *Dipsacus fullonum*, burdock species *Arctium spp*, creeping thistle *Cirsium arvense*, common nettle *Urtica dioica*, elder scrub *Sambucus nigra*, Yorkshire-fog *Holcus lanatus*, cock's-foot *Dactylis glomerata*, bramble *Rubus fruticosus agg*, dock *Rumex spp.*, great willowherb *Epilobium hirsutum*, hogweed *Heracleum sphondylium* and creeping buttercup *Ranunculus repens*.



**Photograph 12: Collapsed building south side of Building 3**





**Photograph 13: Collapsed building north side of Building 3**

### **3.6 Surrounding habitats**

To the east of the buildings is a residential property and its gardens. A gravel farm track with hedgerow runs around the buildings north and west, and a grass track with hedgerow runs to the south. A large modern, farm building is also located to the west of the buildings.

The wider landscape around the site is dominated by grass fields, arable land with hedgerows, the Highfields country fishing retreat and the village of Spanby.



**Photograph 14: Farm building located to the west**



**Photograph 15: Gravel track and hedgerow which runs north of the buildings**





**Photograph 16: Grass track south of the buildings**



**Photograph 17: Agricultural fields around the farm buildings**

## 4 RESULTS

### 4.1 Data search

The LERC data search identified no statutory sites and no non-statutory sites within 1km of the survey site.

### 4.2 Bats

There are only 3 records for bats (species unknown) within the search area. These records are dated from 1994 and 2003. The closest of these records to the survey site was recorded 243m east and dated 1994.

#### 4.2.1 Preliminary roost assessment

There are approximately 30 fresh bat droppings recalling those voided by brown long-eared bats *Plecotus auritus* and pipistrelle bats *Pipistrellus spp* recorded in Building 2. These were scattered in nature and not associated with any niche or gap. These were scattered on the floor of the single storey area and a small number (<5) were found on the upper floor area.

During the daylight survey in July 2021, a single Western Barbastelle *Barbastella barbastellus* was recorded roosting at the ridge beam of Building 2.

The results of the buildings assessment appear in tabular form below:

The buildings were assessed in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> Edition (Collins J, 2016) Table 4.1 page 35. The results of the assessment appear in tabular form below:

**Table 2: Assessment of survey site to support roosting bats**

<p>Building 1</p>	<p>Solid brick and stone walls with gaps                  No fascias and soffits                  slate roof, no felt and broken tiles                  Open fronted                  High ambient light levels and draughty within</p>	<p>Low potential for hibernation, maternity or transient roosting by bats.</p>
<p>Building 2</p>	<p>Solid brick and stone walls with gaps                  No fascias and soffits                  Pitched slate roof in good state of repair                  Upper floor area (bat droppings recorded)                  Open fronted north elevation                  Single Western Barbastelle bat recorded roosting at the ridge (July 2021)</p>	<p>Moderate potential for hibernation or transient roosting by bats</p> <p>Confirmed transient/day roost for Western Barbastelle bat</p> <p>Limited potential for maternity use – too draughty and cold</p>

<p>Building 3</p>	<p>Solid brick and stone walls with many gaps                  No facias and soffits                  Generally light and draughty</p>	<p>Moderate potential for transient and hibernation roosting by bats</p> <p>Confirmed transient/day roost for Common pipistrelle</p> <p>Negligible potential for use as a maternity roost site – too cold, draughty and exposed</p>
<p>Collapsed buildings</p>	<p>Brick and stone walls with gaps                  No roof coverings</p>	<p>Very low potential for transient roosting by bats</p> <p>Negligible potential for use as a maternity roost site – too cold, draughty and exposed</p>





**Photograph 18: Bat dropping recorded in Building 2**



**Photograph 19: Western Barbastelle bat at the ridge beam of Building 2**



**Photograph 20: Further view of Western Barbastelle bat at the ridge beam of Building 2**

#### 4.2.2 Evening emergence surveys

The results of the evening surveys are summarised in tabular form below.

**Table 3 – survey results**

Survey date	Building 1	Building 2	Building 3
5 <sup>th</sup> July 2021	No emergence	No emergence	No emergence
4 <sup>th</sup> August 2021	No emergence	1 common pipistrelle and 1 brown long-eared bat (Emerged at 21:14 and 21:28 respectively)	2 common pipistrelles (Emerged at 21:08 and 21:12)
16 <sup>th</sup> September 2021	No emergence	1 Western Barbastelle	No emergence

Common pipistrelles, a Western Barbastelle and a brown long-eared bat were recorded emerging from Buildings 2 and 3. These buildings are confirmed transient/day roosts for these species. The peak number of bats for each species is as follows:

Common pipistrelle – 3

Brown long-eared bat – 1

Western Barbastelle – 1

Common pipistrelle, brown long-eared bat and noctule bats were all recorded commuting past

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and over the buildings.

Western Barbastelle bat is a rare bat species; The worldwide IUCN status (2001) for this species is Vulnerable.



**Photograph 21: Brown long-eared bat and common pipistrelle emergence points (4<sup>th</sup> August 2021)**



**Photograph 22: Common pipistrelle emergence point (4<sup>th</sup> August 2021)**





**Photograph 23: Common pipistrelle emergence point (4<sup>th</sup> August 2021) – exiting via open doorway, bat is likely to have been roosting in one of the many internal gaps in stonework**



**Photograph 24: Access point used by Western Barbastelle (16<sup>th</sup> September 2021)**

#### **4.2.3 Assessment of commuting and foraging habitats**

The surrounding hedgerows connect the survey site with the wider area, which comprises

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mainly arable land and farm buildings and residential dwellings. Approximately 900m south west of the survey sits is Highfield Country Fishing Retreat which is surrounded by large wooded areas.

The results of the assessment of the surrounding habitats appear in tabular form below:

**Table 4: Assessment of surrounding habitats to support commuting and foraging bats**

Feature	Description	Site value for bats
Immediate area (<500m)	Grassland and a residential garden	Moderate potential for foraging and commuting bats
Wider surroundings (500m-3km)	Arable fields Highfield Country Fishing Retreat Large areas of woodland South Forty Foot Drain Hedgerows contribute to connectivity.	Moderate potential for commuting and foraging bats

#### 4.3 Schedule 1 bird species

The data search shows 6 records from within 1km of the survey site for barn owls. The records are dated from 1999-2016. A large number of degraded barn owl pellets were noted during the daylight survey within Building 2. This suggests that prior to its reroofing works, this building was used on a regular basis by barn owls.





**Photograph 25: Degraded barn owl pellets within Building 2**



**Photograph 26: Degraded barn owl pellets within Building 2**

#### **4.4 Birds**

##### **4.4.1 Common bird species**

A number of disused nests were noted during the survey within Buildings 1, 2 & 3.

Active swallow nests were noted in the ground floor areas of Building 2. Juvenile pied wagtails were also noted on the roof of Building 2 during the survey.

The buildings are considered to have high potential for nesting by common bird species.



**Photograph 27: Disused nest found within Building 2**





**Photograph 28: Disused nest recorded in Building 1**



**Photograph 29: Active swallow nest in Building 2**

## 5 DISCUSSION AND RECOMMENDATIONS

### 5.1 Bats

#### 5.1.1 Legal protection

In England, Scotland and Wales, all bats are strictly protected under the Wildlife and Countryside Act 1981 (and as amended); in England and Wales this legislation has been amended and strengthened by the Countryside and Rights of Way (CroW) Act 2000. Bats are also protected by European legislation; the EC Habitats Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 – often referred to as ‘The Habitat Regs’. Taken together, all this legislation makes it an offence to:

- Deliberately capture (or take), injure or kill a bat
- Intentionally or recklessly disturb a group of bats where the disturbance is likely to significantly affect the ability of the animals to survive, breed, or nurture their young or likely to significantly affect the local distribution or abundance of the species whether in a roost or not.
- Damage or destroy the breeding or resting place of a bat
- Possess a bat (alive or dead) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost
- Sell (or offer for sale) or exchange bats (alive or dead) or parts of bats

A roost is defined as being ‘any structure or place that is used for shelter or protection’, and since bats regularly move roost site throughout the year, a roost retains such designation whether or not bats are present at the time.

#### 5.1.2 Recommendations

The results of the surveys indicate that the site is used a transient roost for common pipistrelle bats, brown long-eared bats and Western Barbastelle bats.

The current proposals to develop the site for residential and an annexe/home office with garage, would result in a high risk of injuring or killing bats whilst they are occupying roosts and the destruction of bat roosts, which would constitute a breach of the legislation. Under such circumstances, in order that work may proceed in a lawful manner, a Natural England EPS (European Protected Species) licence would be required. A low impact licence is not appropriate for this site due to the presence of a Western Barbastelle bat (a rare Annex 2 species).

The required licence application will require the preparation of a mitigation strategy. This will include a Method Statement which will need to demonstrate that the bats will remain at a 'favourable conservation status' and requires a well-considered mitigation strategy that ensures that the bats will suffer no adverse effects as a result of the works.

An outline mitigation strategy is detailed below. It comprises consideration of appropriate timing, pre-development checks and appropriate roost provision as well as post development monitoring to assess the success of the mitigation. The strategy aims to satisfy the 'favourable conservation status' test.

The key points for bats will be to ensure that the works are timed correctly, appropriate pre works checks are undertaken and roost niches/areas are reinstated. The elements of the mitigation strategy are considered in turn below.

### **Timing**

The site does not support a maternity roost and therefore there is no reason why the work cannot be undertaken throughout the summer months. The site has some potential for hibernation (although many areas of the site are exposed and draughty) – therefore as a precaution, commencing work in the winter should be avoided. Ideally an Autumn or early Spring start would satisfy the ecological constraints presented by both bats and birds.

### **Roost provision**

The mitigation strategy will include the following roost provision:

- a) Six integral bat boxes shall be included within the development work – these will be positioned on the northern and southern elevation in order to provide a range of conditions suitable for use by roosting bats throughout the season
- b) A small bat loft will be provided above the garage building. It will be lined with bituminous felt, have attic trusses to provide an uncluttered void and have two access points (one on each roof slope) – bat slates would be an appropriate type of access.

The roof coverings must be lined with bituminous felt. **No breathable membranes can be used** – recent research suggests that these are very detrimental to bat populations. Natural England will not grant licences where breathable membrane is proposed.



### **Pre-development checks**

All contractors working on the site will be briefed on the legal protection afforded to bats and their places of shelter and on how to proceed if a bat is discovered during the course of the work.

The roof strips of the buildings (most likely to be just Building 1 and 3) will be timed to occur in early Spring or early Autumn and the project ecologist will attend site on the day when the roof strips commence to undertake a search for bats prior to the works commencing.

The project ecologist will also be present if any external repointing works are planned, to check suitable gaps greater than 20mm using an endoscope and mirrors for the presence of bats.

### **Lighting**

The site will require an appropriate lighting scheme which ensure that all boundary features close to the site i.e. hedgerows to the north and south, remain unilluminated. The new provision of integral bat roost units and the bat loft must also remain in a dark area with no artificial light. An appropriate lighting scheme must be shown on the Masterplan.

### **Monitoring**

It is important to evaluate the success of mitigation strategies and the work will include two years of monitoring post works. This will involve evening visits timed for spring/summer to determine the presence and status of the bats in the new roost provision. This will include daylight inspections and also evening surveys with the use of ultrasonic bat detectors. The results of these monitoring surveys will be passed onto the Local Environmental Records Centre.

### **Summary**

Summary of mitigation which will form the basis of the bat licence application:

- Ecologist presence during roof strips
- Ecologist to check niches wider than 20mm with an endoscope prior to work commencing
- Work timed to avoid the hibernation season
- Use of bitumen roof felt
- Re-instatement of roost niches within the buildings
- Provision of a small bat loft within the development work (potentially above the garage)

- Appropriate lighting scheme
- Post works monitoring

## **5.2 Bird species**

### **5.2.1 Legal protection**

All common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended). Under this legislation it is an offence to:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

### **5.2.2 Recommendations – common birds**

The buildings have high potential to be used for nesting by species of common bird.

Any works to the buildings should commence outside the active nesting season which typically runs from March through to late August. If work commences during the bird breeding season, a search for nests should be carried out before it begins, and active nests should be protected until the young fledge.

Consideration should be given to the provision of nest boxes within the development. This would be a good conservation measure and will replace the nesting habitats that will be lost through the conversion of the buildings. Provision for swallows and sparrow species is recommended. Details of nest boxes suitable for use by a range of common bird species can be obtained from [www.wildcare.co.uk](http://www.wildcare.co.uk).

### **5.2.3 Barn owls**

At the time of survey a large number of very aged barn owl pellets were noted in Building 2. It is likely that this building was used as a roost site for barn owls before it was reroofed and was rendered inaccessible for this species.

Mitigation measures are required in order to mitigate for the loss of a roost site for this specially protected bird species.

In order to comply with the relevant legislation, the following Method Statement must be adhered to. It is expected that this Method Statement will form the basis of a planning condition.

### **Barn Owl Method Statement**

Prior to starting work on the buildings, the following works must be undertaken as soon as possible:

- Erect two tree or pole mounted nest boxes close to the buildings **as soon as possible**, ideally positioned looking north or west over open countryside. A specification for a tree/pole mounted box can be provided on request; or the boxes can be purchased via NHBS/Wildcare supplies.
- The floor of the nesting chambers of the newly erected boxes should be covered in a layer of compost to simulate the broken-down pellets that are used as nest material.
- Prior to any of the building works there should be a search of the survey buildings in order to check that there is no nesting attempt underway – ideally building works should commence in early Spring or Autumn. **Early April or September/October would be an ideal time to commence work in terms of bats and birds.**

Further advice relating to the positioning and installation of features for barn owls can be provided on request or sourced from The Barn Owl Trust, Waterleat, Ashburton, Devon, TQ13 7HU (e-mail: info@barnowltrust.org.uk).

### **5.3 Recommendations for ecological enhancement**

In addition to the legislation which is in place to safeguard protected species, there is also legislation and policy which imposes duties to take account of statutorily protected species and also to undertake action to prevent loss of biodiversity and species/habitats which have been identified as priorities in the UK. In England and Wales, the Natural Environment and Rural Communities (NERC) Act 2006, imposes a duty on all public bodies (including Local Authorities and statutory bodies) to conserve biodiversity – including restoring and enhancing a population

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or habitat. In addition, government planning policy guidance throughout the UK, provided in the National Planning Policy Framework and OPDM Circular 06/2005, requires local planning authorities to take account of protected species issues prior to determination of planning applications.

In order to enhance biodiversity and provide some 'ecological gain' on site and fulfil the Local Planning Authorities obligations under the NERC Act 2006, the following measures are recommended;

- Removal of the hedgerows adjacent to the site should be avoided where possible and kept to a minimum if unavoidable. Any removal of hedgerows should be compensated for by re-planting at least the amount that is lost using native species such as blackthorn *Prunus spinosa*, common hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, field maple *Acer campestre*, midland hawthorn *Crataegus laevigata*, wild cherry *Prunus avium* and bird cherry *Prunus padus*. Hedgerows should be appropriately managed with traditional techniques where possible to maximise their benefit for wildlife using hedge-laying rather than flailing or trimming. If trimming is necessary, ensure it is carried out every 2 to 3 years and in sections so that not all parts of the hedgerow are cut at the same time.
- In order to provide suitable habitats on site to encourage high invertebrate activity, including declining pollinators, some grassed areas on the site should be seeded with appropriate wildflower mixes. Seeding of any amenity areas should use a flowering lawn mixture, such as Emorsgate Seeds EL1 mix ([www.wildseed.co.uk](http://www.wildseed.co.uk)), which is resistant to regular mowing. Any areas of longer grass could be seeded with a general wildflower mix such as Emorsgate EM1 mix (basic all-purpose meadow mix). It is recommended that any wildflower areas are cut once a year, in late summer/early autumn and the arisings removed after 7 days to enable the wildflowers to flourish. Details of how to adequately prepare the ground prior to seeding as well as ongoing management can also be found on the Emorsgate website.
- Any tree planting on the site should comprise native species, such as field maple *Acer campestre*, rowan *Sorbus aucuparia*, hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, crab apple *Malus sylvestris*, holly *Ilex aquifolium* and wild cherry *Prunus avium*, which provide foraging opportunities for various bird species.
- Plant flower borders within any landscaped areas of the site to include night scented flowers in order to attract moths and other night flying insects (which will provide foraging opportunities for bats). Species should include evening primrose *Oenothera*

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*biennis*, sweet rocket *Hesperis matronalis*, honeysuckle species *Lonicera sp*, lavender *Lavendula sp*, white jasmine *Jasminum officinale*, night-scented catchfly *Silene noctiflora*, night-scented stock *Matthiola longipetala* and soapwort *Saponaria officinalis*.

## 6 SUMMARY

The buildings at Mareham Lane, Spanby were surveyed in connection with plans to convert into a residential dwelling with associated garage and office/annexe/workshop.

Significant signs of use by bats were noted during the surveys. Two of the buildings surveyed support transient bat roosts for up to three species of bat. A European Protected Species (EPS) licence will be required before work to convert the buildings can commence. This will require an update survey and the development of a mitigation strategy. Autumn 2022 is likely to be the next available time for commencing work.

Building 2 has been utilised by barn owls in the past. Provision of nest boxes is required to mitigate for the loss of a roosting site. Details of nest box provision is provided within the report.

Precautionary measures and ecological enhancements are required in order to ensure legal compliance and no net loss to biodiversity. These are as follows:

- Appropriate timing with regards to nesting birds
- Provision of nesting features for common birds, including swallows and sparrow species
- Appropriate landscaping using native species

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**ECOLOGY AND PROTECTED SPECIES SURVEY  
BARNs AT MAREHAM LANE, SPANBY,  
LINCOLNSHIRE**

**APPENDIX 1 - Data search results**



# LERC Search Summary Report

**Grid Reference: TF 089 381**  
**Buffer: 1km**

**Date of publication: 01/09/2021**  
**Expires: 01/09/2022**

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## Report Details

Produced for	
Search area	

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## Species

Lincolnshire Environmental Records Centre holds records on the following species within or overlapping the search area. Data shown is as held by LERC; past records of presence of a species does not guarantee continued occurrence and absence of records does not imply absence of a species, merely that no records are held. Confidential data, zero abundance records, data at poorly defined geographic resolutions and data pending validation and/or verification are also excluded from this report. A number of different datasets have been consulted to produce this report - a summary of attribution statements is available at <https://glnp.org.uk/images/uploads/services/lincolnshire-environmental-records-centre/species%20attribution.pdf>

### Amphibian (2 taxa)

Common Frog, <i>Rana temporaria</i>	2	1977 - 2013	Protected
Common Toad, <i>Bufo bufo</i>	1	1977 - 1977	Protected, Priority

### Bird (29 taxa)

Barn Owl, <i>Tyto alba</i>	6	1999 - 2016	Protected, Local Priority
Bullfinch, <i>Pyrrhula pyrrhula</i>	12	2013 - 2014	Local Priority
Corn Bunting, <i>Emberiza calandra</i>	3	2009 - 2010	Local Priority
Cuckoo, <i>Cuculus canorus</i>	2	2006 - 2014	Priority
Fieldfare, <i>Turdus pilaris</i>	26	1998 - 2017	Protected
Grey Partridge, <i>Perdix perdix</i>	1	2013 - 2013	Priority, Non-native
Hobby, <i>Falco subbuteo</i>	1	2013 - 2013	Protected
House Sparrow, <i>Passer domesticus</i>	5	2008 - 2019	Priority
Kingfisher, <i>Alcedo atthis</i>	2	2013 - 2013	Protected
Lapwing, <i>Vanellus vanellus</i>	16	1998 - 2014	Priority, Local Priority
Lesser Redpoll, <i>Acanthis cabaret</i>	2	2013 - 2013	Priority
Linnet, <i>Linaria cannabina</i>	6	2013 - 2014	Local Priority
Little Owl, <i>Athene noctua</i>	31	2004 - 2014	Non-native
Peregrine, <i>Falco peregrinus</i>	1	2014 - 2014	Protected
Pheasant, <i>Phasianus colchicus</i>	1	2012 - 2012	Non-native
Pink-footed Goose, <i>Anser brachyrhynchus</i>	1	2013 - 2013	Non-native
Red Kite, <i>Milvus milvus</i>	24	2013 - 2017	Protected
Redwing, <i>Turdus iliacus</i>	3	2014 - 2017	Protected
Reed Bunting, <i>Emberiza schoeniclus</i>	6	2014 - 2014	Priority, Local Priority
Skylark, <i>Alauda arvensis</i>	21	2012 - 2014	Local Priority
Snipe, <i>Gallinago gallinago</i>	1	2010 - 2010	Local Priority
Song Thrush, <i>Turdus philomelos</i>	6	2013 - 2014	Local Priority
Spotted Flycatcher, <i>Muscicapa striata</i>	3	1998 - 2009	Priority
Starling, <i>Sturnus vulgaris</i>	1	2012 - 2012	Local Priority
Swift, <i>Apus apus</i>	4	2007 - 2013	Local Priority
Tree Sparrow, <i>Passer montanus</i>	5	2008 - 2010	Priority

**Bird (29 taxa)**

Turtle Dove, <i>Streptopelia turtur</i>	1	2008 - 2008	Priority
Yellow Wagtail, <i>Motacilla flava</i>	10	2013 - 2014	Local Priority
Yellowhammer, <i>Emberiza citrinella</i>	23	2010 - 2014	Priority, Local Priority

**Flowering Plant (83 taxa)**

American Willowherb, <i>Epilobium ciliatum</i>	2	2015 - 2015	Non-native
Apple, <i>Malus pumila</i>	2	2015 - 2015	Non-native
Barren Brome, <i>Bromus sterilis</i>	3	2014 - 2015	Non-native
Black Horehound, <i>Ballota nigra</i>	2	2013 - 2015	Non-native
Black-bindweed, <i>Fallopia convolvulus</i>	2	2013 - 2015	Non-native
Black-grass, <i>Alopecurus myosuroides</i>	4	2013 - 2015	Non-native
Bluebell, <i>Hyacinthoides non-scripta x hispanica = H. x massartiana</i>	2	2016 - 2016	Non-native
Bluebell, <i>Hyacinthoides non-scripta</i>	1	2014 - 2014	Protected
Borage, <i>Borago officinalis</i>	1	2015 - 2015	Non-native
Bread Wheat, <i>Triticum aestivum</i>	1	2015 - 2015	Non-native
Bristly Oxtongue, <i>Picris echinoides</i>	4	2013 - 2015	Non-native
Butterfly-bush, <i>Buddleja davidii</i>	1	2015 - 2015	Non-native
Canadian Fleabane, <i>Conyza canadensis</i>	1	2015 - 2015	Non-native
Charlock, <i>Sinapis arvensis</i>	2	2015 - 2015	Non-native
Cherry Plum, <i>Prunus cerasifera</i>	2	2016 - 2016	Non-native
Common Field-speedwell, <i>Veronica persica</i>	4	2013 - 2015	Non-native
Common Fumitory, <i>Fumaria officinalis</i>	1	2015 - 2015	Non-native
Common Mallow, <i>Malva sylvestris</i>	3	2013 - 2015	Non-native
Common Poppy, <i>Papaver rhoeas</i>	4	2013 - 2015	Non-native
Common Vetch, <i>Vicia sativa subsp. segetalis</i>	1	2015 - 2015	Non-native
Crepis vesicaria subsp. taraxacifolia, <i>Crepis vesicaria subsp. taraxacifolia</i>	1	2014 - 2014	Non-native
Cut-leaved Crane's-bill, <i>Geranium dissectum</i>	3	2014 - 2015	Non-native
Duke of Argyll's Teaplant, <i>Lycium barbarum</i>	1	2015 - 2015	Non-native
Dwarf Mallow, <i>Malva neglecta</i>	1	2015 - 2015	Non-native
Equal-leaved Knotgrass, <i>Polygonum arenastrum</i>	2	2015 - 2015	Non-native
Feverfew, <i>Tanacetum parthenium</i>	1	2015 - 2015	Non-native
Field Forget-me-not, <i>Myosotis arvensis</i>	3	2013 - 2015	Non-native
Field Pansy, <i>Viola arvensis</i>	2	2013 - 2015	Non-native
Field Penny-cress, <i>Thlaspi arvense</i>	1	2015 - 2015	Non-native
Field Pepperwort, <i>Lepidium campestre</i>	1	2014 - 2014	Non-native
Fig-leaved Goosefoot, <i>Chenopodium ficifolium</i>	1	2013 - 2013	Non-native
Flax, <i>Linum usitatissimum</i>	1	2015 - 2015	Non-native
Fox-and-cubs, <i>Pilosella aurantiaca</i>	1	2015 - 2015	Non-native

Flowering Plant (83 taxa)			
Greater Burdock, <i>Arctium lappa</i>	3	2013 - 2015	Non-native
Greater Periwinkle, <i>Vinca major</i>	1	2015 - 2015	Non-native
Green Alkanet, <i>Pentaglottis sempervirens</i>	1	2014 - 2014	Non-native
Ground-elder, <i>Aegopodium podagraria</i>	3	2013 - 2016	Non-native
Hedge Mustard, <i>Sisymbrium officinale</i>	4	2013 - 2015	Non-native
Hedgerow Crane's-bill, <i>Geranium pyrenaicum</i>	1	2015 - 2015	Non-native
Hemlock, <i>Conium maculatum</i>	4	2013 - 2015	Non-native
Honesty, <i>Lunaria annua</i>	2	2016 - 2016	Non-native
Horse-chestnut, <i>Aesculus hippocastanum</i>	3	2014 - 2015	Non-native
Horse-radish, <i>Armoracia rusticana</i>	2	2015 - 2015	Non-native
Hybrid Black-poplar, <i>Populus nigra x deltoides = P. x canadensis</i>	2	2013 - 2015	Non-native
Indian Balsam, <i>Impatiens glandulifera</i>	2	2013 - 2015	Non-native
Ivy-leaved Speedwell, <i>Veronica hederifolia</i>	3	2015 - 2016	Non-native
Japanese Knotweed, <i>Fallopia japonica</i>	1	2014 - 2014	Non-native
Least Duckweed, <i>Lemna minuta</i>	1	2015 - 2015	Non-native
Many-seeded Goosefoot, <i>Chenopodium polyspermum</i>	2	2015 - 2015	Non-native
Medium-flowered Winter-cress, <i>Barbarea intermedia</i>	1	2016 - 2016	Non-native
Mugwort, <i>Artemisia vulgaris</i>	4	2013 - 2015	Non-native
Oil-seed Rape, <i>Brassica napus subsp. oleifera</i>	2	2015 - 2016	Non-native
Opium Poppy, <i>Papaver somniferum</i>	1	2015 - 2015	Non-native
Petty Spurge, <i>Euphorbia peplus</i>	1	2015 - 2015	Non-native
Pineappleweed, <i>Matricaria discoidea</i>	3	2013 - 2015	Non-native
Populus nigra 'Italica', <i>Populus nigra 'Italica'</i>	1	2015 - 2015	Non-native
Prickly Lettuce, <i>Lactuca serriola</i>	2	2013 - 2015	Non-native
Procumbent Yellow-sorrel, <i>Oxalis corniculata</i>	1	2015 - 2015	Non-native
Rape, <i>Brassica napus</i>	1	2014 - 2014	Non-native
Rat's-tail Fescue, <i>Vulpia myuros</i>	1	2015 - 2015	Non-native
Red Dead-nettle, <i>Lamium purpureum</i>	2	2015 - 2015	Non-native
Red Oak, <i>Quercus rubra</i>	1	2014 - 2014	Non-native
Red Valerian, <i>Centranthus ruber</i>	1	2015 - 2015	Non-native
Russian Comfrey, <i>Symphytum officinale x asperum = S. x uplandicum</i>	1	2015 - 2015	Non-native
Scented Mayweed, <i>Matricaria chamomilla</i>	2	2013 - 2015	Non-native
Scentless Mayweed, <i>Tripleurospermum inodorum</i>	3	2013 - 2015	Non-native
Shepherd's-purse, <i>Capsella bursa-pastoris</i>	4	2013 - 2015	Non-native
Slender Speedwell, <i>Veronica filiformis</i>	1	2013 - 2013	Non-native
Small Nettle, <i>Urtica urens</i>	1	2015 - 2015	Non-native
Snapdragon, <i>Antirrhinum majus</i>	1	2015 - 2015	Non-native
Snowberry, <i>Symphoricarpos albus</i>	1	2013 - 2013	Non-native



**Flowering Plant (83 taxa)**

Snowdrop, <i>Galanthus nivalis</i>	3	2016 - 2017	Non-native
Sun Spurge, <i>Euphorbia helioscopia</i>	3	2013 - 2015	Non-native
Sweet-William, <i>Dianthus barbatus</i>	1	2015 - 2015	Non-native
Swine-cress, <i>Lepidium coronopus</i>	3	2014 - 2015	Non-native
Sycamore, <i>Acer pseudoplatanus</i>	4	2013 - 2015	Non-native
Wall Barley, <i>Hordeum murinum</i>	4	2013 - 2015	Non-native
Weld, <i>Reseda luteola</i>	2	2014 - 2015	Non-native
White Champion, <i>Silene latifolia</i>	4	2013 - 2015	Non-native
White Dead-nettle, <i>Lamium album</i>	4	2013 - 2015	Non-native
White Poplar, <i>Populus alba</i>	1	2015 - 2015	Non-native
Wild-oat, <i>Avena fatua</i>	2	2015 - 2015	Non-native
Winter Aconite, <i>Eranthis hyemalis</i>	2	2016 - 2016	Non-native

**Terrestrial Mammal (8 taxa)**

Brown Hare, <i>Lepus europaeus</i>	6	1977 - 1996	Priority
Brown Rat, <i>Rattus norvegicus</i>	4	1977 - 1977	Non-native
Eastern Grey Squirrel, <i>Sciurus carolinensis</i>	3	1977 - 1998	Non-native
Eurasian Badger, <i>Meles meles</i>	4	1977 - 2011	Protected
European Rabbit, <i>Oryctolagus cuniculus</i>	7	1977 - 1998	Non-native
European Water Vole, <i>Arvicola amphibius</i>	2	1977 - 1977	Protected, Priority
House Mouse, <i>Mus musculus</i>	1	1977 - 1977	Non-native
West European Hedgehog, <i>Erinaceus europaeus</i>	7	1977 - 2019	Priority

**Terrestrial Mammal (bat) (1 taxa)**

Bats, <i>Chiroptera</i>	3	1994 - 2003	Protected, Priority
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