# ECOLOGY AND PROTECTED SPECIES SURVEY

# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

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Scarborough Nixon Associates Limited

www.scarboroughnixonassociates.co.uk

Brookfield House
Chapel Lane
Tattershall Thorpe
Lincolnshire
LN4 4PG

Telephone:01526 344726 or 01205 723342
E-mail: helen@scarboroughnixonassociates.co.uk

Company registration number:8087266
VAT registration number:994957340


**Issued to:**
James Bramma
JB Architectural Design Services
24 Risegate Road
Gosberton
Spalding
Lincolnshire
PE11 4EZ

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| **Report to:** | James Bramma<br>JB Architectural Design Services<br>24 Risegate Road<br>Gosberton<br>Spalding<br>Lincolnshire<br>PE11 4EZ |
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The findings of these surveys will remain valid for a period of 12 months.

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# ECOLOGY AND PROTECTED SPECIES SURVEY
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## 1 INTRODUCTION

Scarborough Nixon Associates Ltd has been commissioned by James Bramma of JB Architectural Design Services to undertake an ecology and protected species survey of buildings at Leaves Lake Drove, West Pinchbeck, Lincolnshire. This survey is required in connection with plans to convert the buildings for residential use.

The daylight assessment was undertaken on 4th September 2017 by Ian Nixon (registered to use Natural England Class Licences WML-CL08 to survey great crested newts, WML-CL19 and WML-CL20 to survey bats and WML-CL29 to survey barn owls; registration numbers 2015-16823-CLS-CLS, 2015-12336-CLS-CLS, 2015-12338-CLS-CLS and CL29/00110 respectively) with an emergence survey being undertaken by a team of three surveyors led by Ian Nixon on 6th September 2017.

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

- Bats
- Badger
- 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 reptile species, common dormouse *Muscardinus avellanarius*, water vole *Arvicola amphibious* and otter *Lutra lutra* were highly unlikely to occur on the site due to lack of suitable habitat. There are no ponds on or within 500m of the survey site and the survey site is not thought to provide suitable terrestrial habitat for great crested newt *Triturus cristatus*. It is therefore considered unlikely that great crested newts are present on the survey site.

A note was made of any species which are local or national Biodiversity Action Plan (BAP) species/species of principal importance.

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 22nd August 2017 to search for sites with statutory and non-statutory designation and records of protected species within 2km of the survey site.

## 2.2 Bats

### 2.2.1 Preliminary roost assessment

In accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition (Collins J, 2016), a preliminary roost assessment was carried out on 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. Ladders, high-powered torches 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

The buildings were 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 required are as follows;

- Negligible – Negligible habitat 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 3rd 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.

### 2.2.3 Evening emergence survey

A team of three surveyors undertook a dusk emergence survey on 6th September 2017. The survey was carried out under suitable weather conditions with 8/8 cloud cover, a light breeze, 15.3 – 12.9°C, 72.9 – 85.8% relative humidity. The surveyors were positioned around the buildings such that they could be assessed for emergence with particular attention given to potential roost sites and exit/entry points.

The survey was started 15 minutes before sunset, and continued for 1.5 hours after sunset. A Pettersson D-1000x ultrasonic time expansion bat detector and Magenta Bat5 heterodyne bat detectors were used to assist the survey, and to enable acoustic species identification.

## 2.3 Badger

The site was searched for signs of use by badger *Meles meles* including setts, latrines, dung pits, pathways, hairs, footprints, snuffle holes and scratch marks on trees.

### 2.4 Birds

#### 2.4.1 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.

#### 2.4.2 Schedule 1 species

The buildings on site 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.

### 2.5 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, 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.

## 3 SITE ASSESSMENT

### 3.1 Location and grid reference

The survey site comprises a series of agricultural buildings and associated yard, located north of Leaves Lake Drove, West Pinchbeck in Lincolnshire - central grid reference TF190250.

The 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 (outlined in red)**

### 3.2 Building 1

This is the most northerly building and is constructed of a timber frame supporting a pitched roof covered with corrugated metal sheeting. The southern elevation is open whilst the remaining elevations are covered with horizontal timber boarding.



**Photograph 1: Southern elevation of Building 1**



**Photograph 2: Northern elevation of Building 1**

### 3.3 Building 2

A two-storey building constructed of solid brick walls supporting a timber pitched roof covered with corrugated fibre-cement sheeting. The ground floor on the eastern part of the north elevation of the building is an open fronted cart store. On the southern elevation, there is a

single-storey stable constructed of solid brick walls supporting a pitched timber roof covered with clay pantiles on lath and plaster.

On the western elevation, there is a single-storey lean-to constructed of a timber frame covered with corrugated metal sheeting and open on the northern elevation.



**Photograph 3: Southern elevation of Building 2**



**Photograph 4: Northern elevation of Building 2**



**Photograph 5: Western elevation of Building 2**

### 3.4 Building 3

A single-storey building constructed of solid brick walls supporting a pitched timber roof covered with corrugated metal sheeting. The northern elevation is open with the gable infilled with vertical timber boarding on a timber frame.



**Photograph 6: Northern elevation of Building 3**



**Photograph 7: Southern and western elevation of Building 3**

### 3.5 Building 4

A single-storey building constructed of solid brick walls supporting a pitched timber roof, hipped at one end, covered with unlined clay pantiles. There are the remains of further buildings on the northern elevation with a remining wall on the eastern boundary of the site.



**Photograph 8: Northern and eastern elevation of Building 4**



**Photograph 9: Southern elevation of Building 4**

### 3.6 Site boundaries and surrounding habitat

The area around the buildings are overgrown with elder *Sambucus nigra*, common ragwort *Senecio jacobaea*, cock's-foot *Dactylis glomerata* greater plantain *Plantago major*, wall barley *Hordeum murinum*, dandelion species *Taraxacum sp.*, common nettle *Urtica dioica*, weld *Reseda luteola*, fat-hen *Chenopodium album*, knotgrass *Polygonum aviculare*, sow-thistle species *Sonchus sp*, white dead-nettle *Lamium album*, groundsel *Senecio vulgaris*, bristly oxtongue *Helminthotheca echioides*, common mallow *Malva sylvestris*, rough meadow-grass *Poa trivialis,* black medick *Medicago lupulina*, black nightshade *Solanum nigrum*, dove's-foot

crane's-bill *Geranium molle,* broad-leaved willowherb *Epilobium montanum*, creeping thistle *Cirsium arvense*, dock species *Rumex sp.*, and redshank *Persicaria maculosa* recorded.

The southern, western and northern boundaries are undefined against the arable field margins and the eastern boundary comprises the brick wall mentioned previously and the access track.

Surrounding habitats consists of arable farmland with occasional residential properties and gardens beyond.



**Photograph 10: Arable fields around the buildings**



**Photograph 11: Further view of arable fields**




**Figure 2: Building locations**

# 4 RESULTS

## 4.1 Data search

The LERC data search did not identify any statutory sites within 2km of the survey site. There are three non-statutory sites within 2km of the survey site, including Local Wildlife Sites (LWS), and a Lincolnshire Wildlife Trust Reserve (LWT):

- Pinchbeck Fen Slipe (LWS and LWT)
- River Glen Corridor (LWS)
- Guthram Gowt (River Glen) (LWS)

The priority habitats of coastal and floodplain grazing marsh, eutrophic standing waters, ponds and reedbeds have been identified within 2km south of the survey site. Neither these habitats nor the above sites are within or adjacent to the survey site, so their nature conservation interest is not considered to be negatively impacted by the proposals.

There are records for several notable species within 2km of the survey site. The common amphibian species common frog *Rana temporaria* were recorded in the area in 2015 and smooth newt *Lissotriton vulgaris* were recorded in 2003. There are also records for great crested newt within 2km of the survey site from 2015. Grass snake *Natrix natrix* were recorded within the area in 2010.

Water vole and otter have been recorded in the area, including within the River Glen, as recently as 2015 and 2014, respectively. There are several records for bats within the area with the most recent records from 2014, as well as records for pipistrelle species *Pipistrellus sp.* and Daubenton's *Myotis daubentonii* from 2016, and common pipistrelle *Pipistrellus pipistrellus*, noctule *Nyctalus noctula* and an unidentified species from 2015. Soprano pipistrelle *Pipistrellus pygmaeus* were recorded in 2008. There are records for badger within the area from 2015. The Biodiversity Action Plan (BAP) species of brown hare *Lepus europaeus* and west European hedgehog *Erinaceus europaeus* have both been recorded in the area as recently as 2013 and 2006, respectively.

Several Schedule 1 bird species have been recorded within 2km of the survey site. Barn owl and marsh harrier *Circus aeruginosus* have been recorded in the area as recently as 2015. There are records for garganey *Anas querquedula* and osprey *Pandion haliaetus* from 2002 and kingfisher *Alcedo atthis* from 2001. Peregrine *Falco peregrinus* and ruff *Calidris pugnax* were recorded in the area in 2000, and little ringed plover *Charadrius dubius* in 1988. Please note that not all Schedule 1 birds listed in the data search may breed in Lincolnshire. There are also records for several BAP bird species including house sparrow *Passer domesticus*, tree sparrow

*Passer montanus*, swift *Apus apus* and starling *Sturnus vulgaris* from 2015.

Full details of the data search are given as Appendix 1.

## 4.2 Bats

### 4.2.1 Preliminary roost assessment

No evidence of the presence of bats was noted during the daylight assessment.

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

**Table 1: Assessment of survey site to support roosting, foraging and commuting bats**

| Building/ Feature | Description | Site value for bats |
|---|---|---|
| Building 1 | Timber frame covered with timber boarding, open on southern elevation, unglazed windows on northern elevation<br><br>Pitched timber roof covered with corrugated metal sheeting – no loft void<br><br>High ambient light levels and draughty | Negligible potential for maternity, transient or hibernation roosting. |
| Building 2 | Solid brick walls with few gaps<br><br>Pitched timber roof covered with unlined clay pantiles – no loft void<br><br>Upper floor not able to be accessed due to H & S concerns<br><br>Some holes in roof, unglazed openings, generally high ambient light levels and draughty | Low potential for transient roosting. Negligible potential for maternity or hibernation roosting. |

| Building/ Feature | Description | Site value for bats |
|---|---|---|
| Building 3 | Solid brick walls with few gaps, open on northern elevation.<br><br>Pitched timber roof covered with corrugated metal sheeting – no loft void<br><br>Holes in roof and walls, high ambient light levels and draughty | Negligible potential for maternity, transient or hibernation roosting. |
| Building 4 | Solid brick walls with few gaps<br><br>Pitched timber roof covered with unlined clay pantiles – no loft void<br><br>Holes in roof and walls, high ambient light levels and draughty | Negligible potential for maternity, transient or hibernation roosting. |

### 4.2.2 Assessment of commuting and foraging habitats

It is very likely that bats will commute and forage over the site, as the residential properties and mature gardens all have good potential for use by commuting/foraging bats.

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

**Table 2: Assessment of surrounding habitats to support commuting and foraging bats**

| Feature | Description | Site value for bats |
|---|---|---|
| Immediate area (<500m) | Large fields of arable land with no hedgerows or ditches | Low potential for foraging and commuting bats |
| Wider surroundings (500m-3km) | Residential properties and mature gardens and large areas of arable land in wider landscape.<br><br>Few hedgerows and waterways that contribute to connectivity. | Moderate potential for foraging and commuting bats |

### 4.2.3 Evening emergence survey

No bats were seen to emerge from the buildings. Common pipistrelle bats were recorded foraging and commuting around the buildings during the survey.

The results of the evening emergence survey are presented in tabular form below:

**Table 3: Surveyor 1 located to the north of the Buildings 2 and 3**

| Time | Species | Notes/activity |
|---|---|---|
| 20:04 | Common pipistrelle | Single pass, social calling, along track south - north |
| 20:10 | Common pipistrelle | Three passes |
| 20:11 | Common pipistrelle | Foraging then left to north over the field |
| 20:13 | Common pipistrelle | From the north, foraging and social calling, then left to north |
| 20:18 – 20:25 | Common pipistrelle | From the north and foraging around the buildings |
| 20:37 – 20:53 | Common pipistrelle | Several passes, foraging and social calling |

**Table 4: Surveyor 2 located to the west of Building 2**

| Time | Species | Notes/activity |
|---|---|---|
| 20:10 | Common pipistrelle | Unseen single pass |
| 20:13 | Common pipistrelle | Unseen single pass |
| 20:20 | Common pipistrelle | Single pass unseen |
| 20:25 | Common pipistrelle | Single pass unseen |
| 20:38 | Common pipistrelle | Social calls heard for 10 mins |

**Table 5: Surveyor 3 located in the central yard**

| Time | Species | Notes/activity |
|---|---|---|
| 20:05 | Common pipistrelle | Into courtyard from north circled courtyard, exited south |
| 20:10 | Common pipistrelle | As above but opposite direction and circled 10 times foraging |
| 20:14 | Common pipistrelle | As above but from east circled 5 times and exited west |
| 20:19 | Common pipistrelle | As above, entered from north circled feeding for 3 mins exit south |

| Time | Species | Notes/activity |
|---|---|---|
| 20:23 | Common pipistrelle | Unseen single pass |
| 20:38 | Common pipistrelle | Arrived from east and circled foraging with social calls for 15 mins exit west |
| 20:55 | Common pipistrelle | Unseen circling for 3 mins with social calls |

### 4.3 Badger

No evidence of badger was noted during the survey. However, there are recent records for badger within the area, and as they are a mobile species it is therefore recommended that all site personnel stay vigilant for the presence of badgers. If the presence of badgers is suspected, further advice will be required from a consultant ecologist by calling 07833 674500, in order to ensure legal compliance.

### 4.4 Birds

#### 4.4.1 Common bird species

A number of common birds were seen on or flying over the site during the survey. These are listed below along with their current status as BAP species or Birds of Conservation Concern 4 (Eaton et al, 2015):

**Table 6: Common birds seen on site**

| English name | Scientific name | BAP | BoCC |
|---|---|---|---|
| woodpigeon | *Columba palumbus* | | Green |
| little owl | *Athene noctua* | | Green |
| robin | *Erithacus rubecula* | | Green |

Old blackbird *Turdus merula* nests were noted in Building 2 and a disused pigeon nest in Building 4. Two fresh and four old little owl pellets were noted in Building 4 and 2 further old little owl pellets noted in Building 1.



**Photograph 12: Blackbird nest in Building 2**



**Photograph 13: Little owl pellet in Building 4**

### 4.4.2 Schedule 1 species

A barn owl was noted leaving Building 2 during the daylight survey and there were five old and six very old pellets recalling those regurgitated by barn owl noted in the ground floor of Building 2 with c. 25 moderately fresh pellets and faecal splashing recorded in the upper floor. A further 2 very old pellets were noted in the single-storey section of Building 2. In the eastern half of Building 4 approximately 30 old barn owl pellets were noted. There is no evidence of a nest site, with the signs all typical of day roosting by individual owls. No other evidence of barn owl or other Schedule 1 species was found within the buildings.



**Photograph 14: Old barn owl pellets in Building 2**



**Photograph 15: Old barn owl pellets in Building 4**

### 4.5 Habitats and plant species

The habitats and plant species recorded on the site are common and widespread in the local area and in the country. The plant species recorded on the site are not listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). There are no species that are listed in the Vascular Plant Red Data List for Great Britain. The site would not meet the required criteria to

qualify as a Local Wildlife Site (LWS).

# 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 2010 – 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

There was no evidence to suggest that the buildings have ever been used by bats in the past and no bats were seen to emerge from them.

It is considered that the proposals to develop the existing buildings is unlikely to result in a breach in the legislation relating to bats and there is no requirement for a European Protected Species licence. All contractors working on the buildings will be briefed on the legal protection afforded to bats and their places of shelter and on how to proceed in the **unlikely** event that a bat is discovered during the course of the work. A procedure to follow in the unlikely event of discovering bats on site is given as Appendix 2.

The site provides some foraging habitats for bats within the local area, and it is recommended that the lighting scheme for the site is designed to ensure that dark unlit areas are retained where bats are likely to be foraging and commuting. It is recommended that lighting on site is kept to a minimum. If it is absolutely necessary to include some external lighting then these should be carefully designed to minimise disturbance to bats, by using down-lights rather than up-lights and using shields to limit light spill. Any external lighting used should emit minimal ultra-violet light, be narrow-spectrum (avoiding white and blue wavelengths) and should peak higher than 550nm. It should be remembered that artificial lighting disrupts and disturbs many animals, including birds and invertebrates, as well as bats.

## 5.2 Birds

### 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 for common bird species

The site has high potential to be used for nesting by species of common bird and disused nests were noted during the survey. Any site preparation/clearance work 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 they begin, and active nests should be protected until the young fledge.

### 5.2.3 Recommendations for Schedule 1 species

As no evidence of breeding by barn owls or other Schedule 1 species was found, the planned works would not cause disturbance to a specially protected species and no further work is legally required.

As barn owls are known to be present in the area and have visited the site it would be a positive

conservation measure to provide features for this species. The type of provision and recommendations for location/installation are given below:

- Barn owl tower – a brick built structure which should be constructed to overlook open countryside, the ideal position would be along the northern boundary facing over the open fields
- Pole mounted boxes – these can be difficult to erect but if used they are best placed along a boundary overlooking open countryside

Appendix 3 provides further details on some of these boxes/features. Further information about barn owl nest box designs and advice on installation can also be 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 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:

- In order to replace the **potential** roost areas lost when the site is redeveloped, 2 bat roost units or bat boxes should be installed on the site as part of the development. Bat brick features should be incorporated into the design as works progress. Bat boxes should be placed on the northern and southern elevations of the new building. Examples of bat roost units and bat boxes which could be used are given in Appendix 4.

- Avoid placing external lighting that illuminates the newly installed bat roost units.

- Any new trees and hedgerows planted on the site should comprise native locally appropriate species. If possible, species that provide pollen, nectar and fruit should form part of the landscaping in order to provide a food source for common birds. Species which could be considered include hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa,* dog rose *Rosa canina*, wayfaring tree *Viburnum lantana,* sweet-briar *Rosa rubiginosa*, dogwood *Cornus sanguinea*, common buckthorn *Rhamnus cathartica* and guelder rose *Viburnum opulus*.

- Consideration should be given to the provision of bird nest boxes of various designs within the development, which would also be a good conservation measure. In particular, boxes for house sparrows, features for swallows and a tree mounted box for barn owls would be appropriate for this site. Details of nest boxes suitable for use by a range of bird species can be obtained from Wildcare, Eastgate House, Moreton Road, Longborough, Gloucestershire GL56 0QJ (01451 833181), www.wildcareshop.co.uk.

## 6 SUMMARY

There are no major ecological constraints associated with the proposals.

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

- Best practice in relation to safeguarding badgers
- Appropriate timing with regards to nesting birds
- Provision of barn owl nest feature
- Provision of bird boxes
- Provision of bat boxes
- Use of native species and wildflowers in the landscaping scheme

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# ECOLOGY AND PROTECTED SPECIES SURVEY
# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

## APPENDIX 1

**Data search results**

# Lincolnshire Environmental Records Centre data search report

## Leaves Lake Drove, West Pinchbeck
## 22 August 2017

*Achieving more for nature*

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

# Report details

| | |
|---|---|
| Produced for | Rachel McNally, Scarborough Nixon Associates Ltd |
| Produced by | charliebarnes |
| Produced on | 22/08/2017 (expires 22/08/2018) |
| LERC reference | ARq-0561 |
| Aspects included in this report | Non-statutory sites ☑<br>Statutory sites ☑<br>Habitats ☑<br>Species ☑ |
| Search area (all aspects combined) | <br>Centre of search area:<br>E: 519050 N: 325050 |

# Terms and conditions

1. Copyright of all records remains with the recorder, and of the collated data with LERC.

2. No copies of data are to be made for use by third parties, without written permission from the original copyright owners of the data.

3. Permission must be obtained in writing from LERC if the data supplied is to be used for any other purpose than that requested.

4. LERC shall be acknowledged in any report relating to data supplied, and one copy of any such report will be supplied free of charge.

5. Permission to use data expires 12 months after its supply. Applications to extend beyond this period should be made before the expiry date.

6. Data provided is as held by LERC. Past records of presence of a species or habitat do not guarantee continued occurrence.

*Any reuse of the GIS layers must include the relevant attribution statement.*

# About the Lincolnshire Environmental Records Centre

The Lincolnshire Environmental Records Centre (LERC) collates wildlife and geological information for Greater Lincolnshire from various sources and makes it available for various uses. This data is crucial to aid conservation management of sites, to help organisations prioritise action, and to understand the distribution of species and trends over time. For more information on LERC or to request a data search, visit the website at http://glnp.org.uk/partnership/lerc/

an ALERC accredited LRC
Association of Local Environmental Records Centres

*Lincolnshire Environmental Records Centre is an ALERC accredited LRC, meeting the standard level criteria*
*For more information on accreditation, see the ALERC website at http://www.alerc.org.uk/accreditation.html*

# Non-statutory sites

*Site citation sheets are available for Local Wildlife Sites, Local Geological Sites, Sites of Nature Conservation Interest and Regionally Important Geological and Geomorphological Sites. GIS boundaries are available for Local Wildlife Sites, Local Geological Sites, Sites of Nature Conservation Interest, Regionally Important Geological and Geomorphological Sites, Lincolnshire Wildlife Trust nature reserves and Roadside Nature Reserves. Distance is given as the shortest distance in kilometres from the unbuffered search area to the site.*

## Local Wildlife Sites (LWSs)

LWSs, along with biological Sites of Special Scientific Interest (SSSIs), are the most important places for wildlife at a local level. The GLNP seeks to identify every site that satisfies the selection criteria presented in the LWS guidelines, thus recognising a comprehensive suite of sites. Sites are selected by the Nature Partnership, based on recommendations made by its expert working group known as the LWS Panel and then submitted for inclusion within local authority planning policy. Identifying these sites helps local authorities meet their obligations under legislation and government guidance, including reporting on the number of sites in positive management for Single Data List Indicator 160-00.

*Attribution statement: Contains Ordnance Survey data © Crown copyright and database right 2016.*

| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| 622 | Pinchbeck Fen Slipe | Selected LWS | 518918 | 323451 | 0.98 |
| 932 | River Glen Corridor | Selected LWS | 518932 | 323518 | 0.96 |
| 4683 | Guthram Gowt (River Glen) | Selected LWS | 517276 | 322425 | 1.05 |

*3 site(s) found in the search area*

## Local Geological Sites (LGSs)

LGSs, along with geological Sites of Special Scientific Interest (SSSIs) are the most important places for geodiversity and heritage in the county. They have substantive geoconservation value and their function is to protect and manage such interest and, where possible, provide educational opportunities. The GLNP seeks to identify every site that satisfies the selection criteria presented in the LGS guidelines. Sites are selected by the Nature Partnership, based on recommendations made by its expert working group known as the LGS Panel and then submitted for inclusion within local authority planning policy. Identifying these sites helps local authorities meet their obligations under legislation and government guidance, including reporting on the number of sites in positive management for Single Data List Indicator 160-00.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Sites of Nature Conservation Interest (SNCIs)

The LWSs status supersedes that of Sites of Nature Conservation Importance (SNCIs), which were identified on the basis of local knowledge and were selected without consideration of any formal criteria. In Greater Lincolnshire, the GLNP aims to assess all existing SNCIs using the criteria outlined in LWS guidelines. To avoid confusion, until sites have been assessed against the LWS criteria they retain their SNCI status.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Regionally Important Geological and Geomorphological Sites (RIGSs)

The LGS status supersedes that of RIGS, which were identified on the basis of local knowledge and were selected without consideration of any formal criteria. In Greater Lincolnshire, the GLNP aims to assess all existing RIGSs using the criteria outlined in LGS guidelines. To avoid confusion, until sites have been assessed against the LGS criteria they retain their RIGS status.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Lincolnshire Wildlife Trust Reserves (LWT)

The Lincolnshire Trust for Nature Conservation, formed in 1948, (and now known as the Lincolnshire Wildlife Trust) is a charity dedicated to safeguarding the countryside and wildlife of the historic county. It is one of a network of Wildlife Trusts that together form the largest voluntary organisation in the UK devoted to all aspects of wildlife protection.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| R077 | Pinchbeck Fen Slipe | - | 518859 | 323426 | 0.98 |

*1 site(s) found in the search area*

## Roadside Nature Reserves (RNRs)

A scheme for the protection and management of roadside verges was set up in 1960 by the Lincolnshire Wildlife Trust and sites were originally termed "Protected Roadside Verges" (PRVs). Run in cooperation with Lincolnshire County Council, the Highways Division provides financial and advisory support with management is carried out by the Lincolnshire Wildlife Trust. There are 65 Roadside Nature Reserves, which total a distance of over 80 kilometres (50 miles). For each verge, the Trust appoints a voluntary 'Wayside Warden' to help look after the biological interest in liaison with the Divisional Surveyors and landowners.

*Attribution statement: Contains Ordnance Survey data © Crown copyright and database right 2016.*

| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Non-statutory sites within the search area




*Space restrictions on the map may result in some sites not being labelled. Please refer to the GIS layers or site citations for details.*

- Local Wildlife Site
- Local Geological Site (mine entrance)
- Local Geological Site
- Site of Nature Conservation Interest
- Regionally Important Geological/Geomorphological Site
- Lincolnshire Wildlife Trust Reserve
- Roadside Nature Reserve
- Search area
- LERC boundary

# Statutory sites

*Distance is given as the shortest distance in kilometres from the unbuffered search area to the site.*

## Sites of Special Scientific Interest (SSSIs)

SSSIs are part of the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations, and are currently designated under the Wildlife and Countryside Act 1981 (as amended in the Countryside Rights of Way Act 2000).

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## National Nature Reserves (NNRs)

NNRs represent many of the finest wildlife and geological sites in the country. They are selected from the Sites of Special Scientific Interest (SSSIs) and so each NNR has at least two designations.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Local Nature Reserves (LNRs)

LNRs are areas designated by the local authority, and protected through the Local Plan as of special wildlife interest that enhance public enjoyment of wildlife. The local authority either has ownership or a legal interest in the land.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Special Protection Areas (SPAs)

SPAs are areas of the most important habitat for rare (listed on Annex I of the Birds Directive) and migratory birds within the European Union. SPAs, together with SACs, form the Natura 2000 network. SPA designation is underpinned by SSSI designation in the UK.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Special Areas of Conservation (SACs)

SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II of the Habitats Directive. SACs, together with SPAs, form the Natura 2000 network. SAC designation is underpinned by SSSI designation in the UK.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Ramsar Sites (Ramsars)

Ramsar Sites are wetlands of international importance designated under the Ramsar Convention. Most Ramsar Sites are also classified as SPAs, with all terrestrial Ramsar Sites also notified as SSSIs.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Areas of Outstanding Natural Beauty (AONBs)

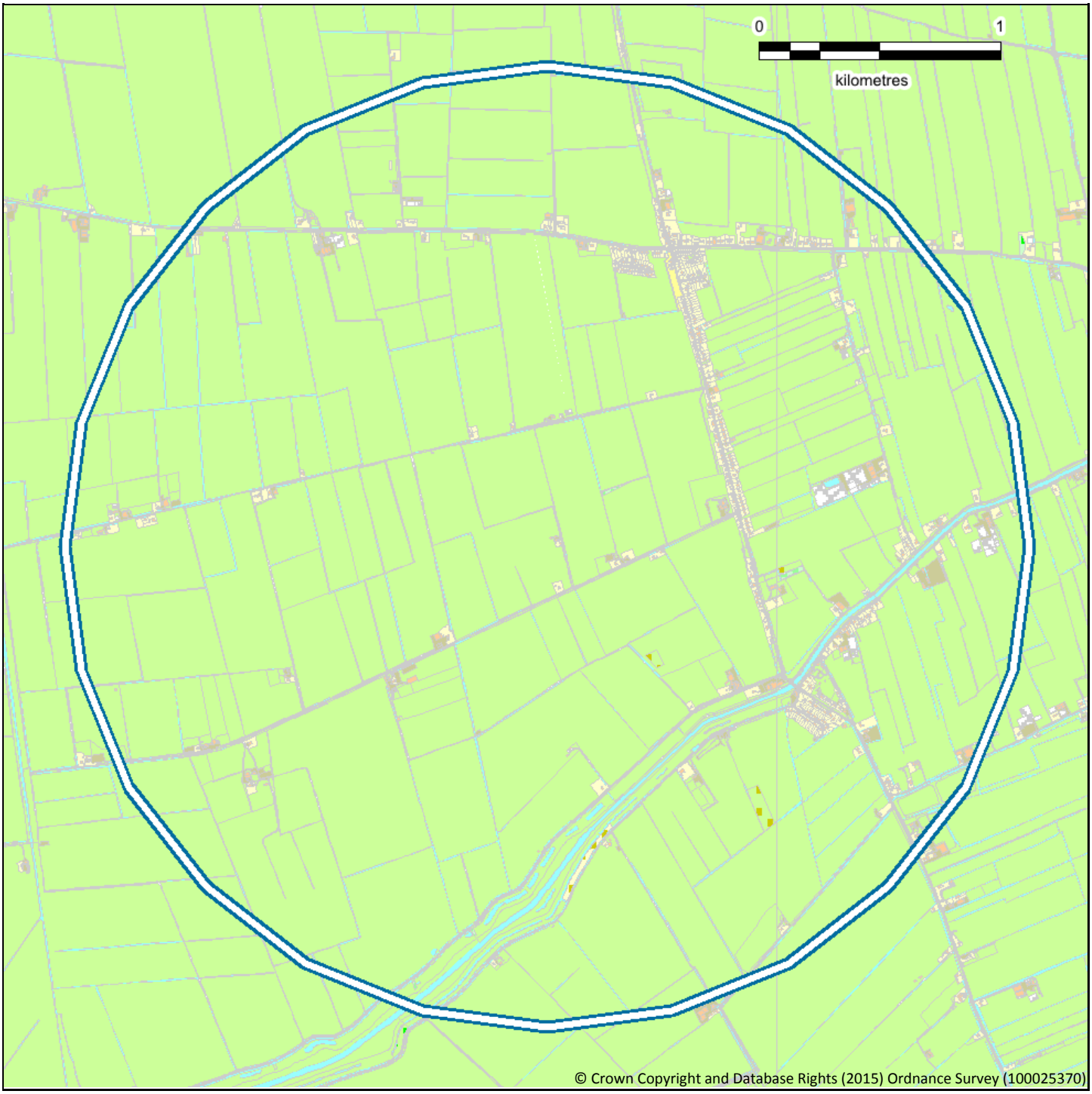
AONBs were created by legislation within the National Parks and Access to the Countryside Act of 1949. In Greater Lincolnshire there is one AONB, which is the Lincolnshire Wolds.

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| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| | | | | | |

*no sites found in the search area*

## Statutory sites within the search area




*Space restrictions on the map may result in some sites not being labelled. Please refer to the GIS layers or site citations for details.*

- Site of Special Scientific Interest
- National Nature Reserve
- Local Nature Reserve
- Special Protection Area
- Special Area of Conservation
- Ramsar
- Area of Outstanding Natural Beauty
- Search area
- LERC boundary

# Habitats

## Ancient Woodland Sites

The Ancient Woodland Inventory (AWI), maintained by Natural England, is a provisional list of woodland sites over 2ha in size that have had continuous woodland cover since at least 1600AD. This includes ancient semi-natural woodland (ASNW) and ancient replanted woodland (ARW - also known as plantation on ancient woodland sites or PAWS).

*Attribution statement: Ancient Woodland © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2016.*

| HABITAT | Area (ha) |
|---|---|
| | |

*no polygons found in the search area*

## Priority Habitats

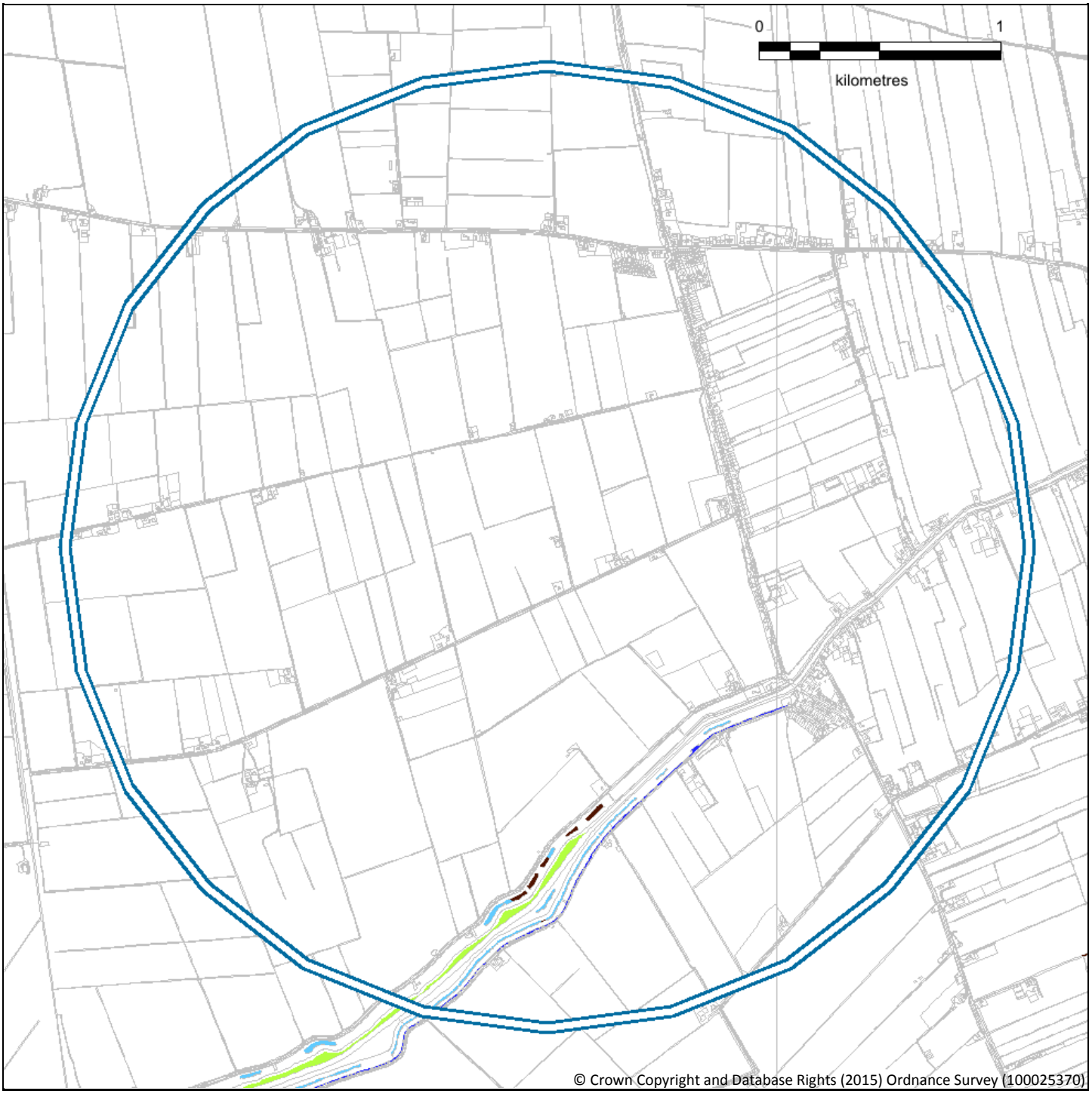
Priority habitats are those identified as being the most threatened and requiring conservation action in the UK. The data presented is the most up-to-date of the data collated by the GLNP; further historic data and non-Priority habitat data may also be available.

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| HABITAT | Area (ha) |
|---|---|
| Coastal and floodplain grazing marsh | 1.59 |
| Eutrophic standing waters | 0.59 |
| Ponds | 1.27 |
| Reedbeds | 0.91 |

*4.36 hectare(s) found in the search area*

## Habitats within the search area




- Arable field margins
- Coastal and floodplain grazing marsh
- Coastal saltmarsh
- Coastal sand dunes
- Eutrophic standing waters
- Hedgerows
- Intertidal mudflats
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Lowland mixed deciduous woodland
- Lowland raised bog
- Open mosaic habitats on previously developed land
- Peat and clay exposures
- Ponds
- Purple moor-grass and rush pastures
- Reedbeds
- Rivers
- Sabellaria spinulosa reefs
- Saline lagoons
- Traditional orchards
- Wet woodland
- Wood-pasture and parkland
- Ancient Replanted Woodland
- Ancient & Semi-Natural Woodland
- Search area
- LERC boundary

# 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. Depending on the parameters of the data search, additional records may be available. Confidential data, data at poorly defined geographic resolutions and data pending validation and/or verification may also be excluded from this report.

Grid references are limited to 100m accuracy, although higher resolutions may be available. Location data for the following record types are further limited to avoid environmental harm: badger setts, bat roosts. Release of enhanced data is dealt with on a case-by-case basis and confidential records are provided separately.

The following organisations have contributed data to this report:

- Biological Records Centre
- Black Sluice IDB
- Environment Agency
- Greater Lincolnshire Nature Partnership
- Lapwings Consultants
- Lincolnshire Bat Group
- Lincolnshire Bird Club
- Lincolnshire Naturalists' Union
- Lincolnshire Wildlife Trust
- People's Trust for Endangered Species
- Royal Society for the Protection of Birds

*Data is converted for use in the LERC database and may not exactly match the source data.*

The results of the species search have been broken down into 1 separate data output(s), which are summarised on the following pages. Zero abundance records are excluded from these summaries, but are included in the spread sheets (these can be identified by having abundance values of '0 Present (Count: Exact)').

# Search #1

## Search parameters

| Designations: | Taxonomic groups: | Geographic area: |
|---|---|---|
| Badgers-1992<br>BAP-2007<br>GBNNSIP<br>HabReg-Sch2<br>HabReg-Sch4<br>HabReg-Sch5<br>LBAP:3<br>WACA-Sch1_part1<br>WACA-Sch1_part2<br>WACA-Sch5_sect9.1(kill/injuring)<br>WACA-Sch5_sect9.1(taking)<br>WACA-Sch5_sect9.2<br>WACA-Sch5_sect9.4.a<br>WACA-Sch5_sect9.4b<br>WACA-Sch5_sect9.5a<br>WACA-Sch5_sect9.5b<br>WACA-Sch5Sect9.4A*<br>WACA-Sch5Sect9.4c<br>WACA-Sch8 | *all taxonomic groups* |  |

## Summary

| Amphibian (3 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Common Frog, *Rana temporaria* | 7 | 1998 - 2015 | Bern3, HSD5, WCA5/9.5a |
| Great Crested Newt, *Triturus cristatus* | 5 | 2003 - 2015 | Bern2, FEP7/2, HabRegs2, HSD2p, HSD4, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Smooth Newt, *Lissotriton vulgaris* | 4 | 1997 - 2003 | Bern3, LBAP:3, WCA5/9.5a, WO5 |

| Bird (53 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Barn Owl, *Tyto alba* | 28 | 1988 - 2015 | Bern2, CITESA, FEP7/2, LBAP:3, LBCSchedule1, ScotBL, WCA1i, WCA9, WO1i |
| Bewick's Swan, *Cygnus columbianus* | 1 | 1971 - 1971 | BAmb, BD1, Bern2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, ScotBL, WCA1i, WO1i |
| Black Swan, *Cygnus atratus* | 5 | 2002 - 2003 | GBNNSIP, Non-native |
| Blue-headed Wagtail, *Motacilla flava subsp. flava* | 1 | 1985 - 1985 | Bern2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL, WO1i |
| Bullfinch, *Pyrrhula pyrrhula* | 1 | 2008 - 2008 | BoCC4-Amber, FEP7/2, LBAP:3, ScotBL |
| Canada Goose, *Branta canadensis* | 8 | 1980 - 1989 | BD2.1, CMS_A2, GBNNSIP, Non-native, WCA9 |
| Collared Dove, *Streptopelia decaocto* | 22 | 1982 - 2015 | BD2.2, GBNNSIP |
| Common Crossbill, *Loxia curvirostra* | 1 | 2008 - 2008 | Bern2, WCA1i, WO1i |
| Corn Bunting, *Emberiza calandra* | 19 | 1982 - 2010 | BoCC4-Red, FEP7/2, LBAP:3, ScotBL, WO1i |
| Cuckoo, *Cuculus canorus* | 12 | 1982 - 2015 | BoCC4-Red, BRed, ScotBL, Sect.41, Sect.42, UKBAP |
| Curlew, *Numenius arquata* | 7 | 1981 - 2003 | BD2.2, BoCC4-Red, CMS_A2, CMS_AEWA-A2, FEP7/2, LBAP:3, RLGLB.NT, ScotBL, Sect.41, Sect.42, UKBAP |
| Fieldfare, *Turdus pilaris* | 35 | 1982 - 2015 | BD2.2, BoCC4-Red, BRed, WCA1i, WO1i |
| Gadwall, *Anas strepera* | 46 | 1987 - 2015 | BAmb, BD2.1, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, GBNNSIP, Non-native, WO1ii |
| Garganey, *Anas querquedula* | 2 | 1998 - 2002 | BAmb, BD2.1, BoCC4-Amber, CITESA, CMS_A2, CMS_AEWA-A2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Goldeneye, *Bucephala clangula* | 18 | 1997 - 2012 | BAmb, BD2.2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, Non-native, WCA1ii, WO1ii |

| | | | |
|---|---|---|---|
| Green Sandpiper, *Tringa ochropus* | 4 | 1997 - 2002 | BAmb, Bern2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, ScotBL, WCA1i |
| Greenshank, *Tringa nebularia* | 14 | 1998 - 2002 | BAmb, BD2.2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, WCA1i, WO1i |
| Grey Partridge, *Perdix perdix* | 8 | 1982 - 2015 | BD2.1, BoCC4-Red, FEP7/2, GBNNSIP, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |
| Greylag Goose, *Anser anser* | 10 | 1997 - 2015 | BAmb, BD2.1, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, Non-native, WCA1ii |
| House Sparrow, *Passer domesticus* | 15 | 1988 - 2015 | BoCC4-Red, BRed, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |
| Kingfisher, *Alcedo atthis* | 7 | 1982 - 2001 | BD1, Bern2, BoCC4-Amber, FEP7/2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Lapwing, *Vanellus vanellus* | 33 | 1980 - 2015 | BD2.2, BoCC4-Red, CMS_A2, CMS_AEWA-A2, FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |
| Lesser Redpoll, *Acanthis cabaret* | 1 | 2014 - 2014 | BoCC4-Red, ScotBL, Sect.41, Sect.42, UKBAP |
| Linnet, *Linaria cannabina* | 23 | 1982 - 2015 | Bern2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL |
| Little Owl, *Athene noctua* | 9 | 2001 - 2012 | Bern2, CITESA, GBNNSIP, Non-native |
| Little Ringed Plover, *Charadrius dubius* | 1 | 1988 - 1988 | Bern2, CMS_A2, CMS_AEWA-A2, LBCSchedule1, WCA1i |
| Marsh Harrier, *Circus aeruginosus* | 13 | 1997 - 2015 | BD1, BoCC4-Amber, CITESA, CMS_A2, FEP7/2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Mute Swan, *Cygnus olor* | 109 | 1980 - 2015 | BAmb, BD2.2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, GBNNSIP |
| Osprey, *Pandion haliaetus* | 3 | 1987 - 2002 | BAmb, BD1, BoCC4-Amber, CITESA, CMS_A2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Peregrine, *Falco peregrinus* | 1 | 2000 - 2000 | BD1, Bern2, CITESA, CMS_A2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Pheasant, *Phasianus colchicus* | 21 | 1987 - 2015 | BD2.1, GBNNSIP |
| Pochard, *Aythya ferina* | 14 | 1982 - 2010 | BD2.1, BoCC4-Red, BRed, CMS_A2, CMS_AEWA-A2, GBNNSIP, ScotBL, WO1ii |
| Red-legged Partridge, *Alectoris rufa* | 12 | 1987 - 2015 | BD2.1, GBNNSIP, Non-native |
| Redshank, *Tringa totanus* | 21 | 1980 - 2009 | BD2.2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, FEP7/2, LBAP:3 |
| Red-throated Diver, *Gavia stellata* | 1 | 1997 - 1997 | BD1, Bern2, CMS_A2, CMS_AEWA-A2, ScotBL, WCA1i, WO1i |
| Redwing, *Turdus iliacus* | 23 | 1997 - 2015 | BD2.2, BoCC4-Red, BRed, ScotBL, WCA1i |
| Reed Bunting, *Emberiza schoeniclus* | 40 | 1980 - 2015 | Bern2, BoCC4-Amber, FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |
| Rock Dove, *Columba livia* | 2 | 2007 - 2009 | BD2.1, CITESA, GBNNSIP, Non-native |
| Ruff, *Calidris pugnax* | 5 | 1998 - 2000 | BD1, BD2.2, BoCC4-Red, CMS_A2, CMS_AEWA-A2, FEP7/2, LBCSchedule1, ScotBL, WCA1i, WO1i |
| Skylark, *Alauda arvensis* | 23 | 1982 - 2015 | BD2.2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL, Sect.41 |
| Slavonian Grebe, *Podiceps auritus* | 3 | 1997 - 1998 | BD1, Bern2, BoCC4-Red, BRed, CMS_A2, CMS_AEWA-A2, ScotBL, WCA1i |
| Snipe, *Gallinago gallinago* | 62 | 1980 - 2015 | BD2.1, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, FEP7/2, LBAP:3 |
| Song Thrush, *Turdus philomelos* | 17 | 1982 - 2015 | BD2.2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL |
| Spotted Flycatcher, *Muscicapa striata* | 4 | 1982 - 2010 | Bern2, BoCC4-Red, CMS_A2, FEP7/2, ScotBL, Sect.41, Sect.42, UKBAP |
| Starling, *Sturnus vulgaris* | 26 | 1982 - 2015 | BD2.2, BoCC4-Red, FEP7/2, LBAP:3 |
| Swift, *Apus apus* | 17 | 1982 - 2015 | BAmb, BoCC4-Amber, LBAP:3, ScotBL |
| Tree Sparrow, *Passer montanus* | 29 | 1998 - 2015 | BoCC4-Red, FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |
| Turtle Dove, *Streptopelia turtur* | 50 | 1982 - 2015 | BD2.2, BoCC4-Red, CITESA, FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WO1i |
| Whooper Swan, *Cygnus cygnus* | 13 | 1971 - 2014 | BD1, Bern2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, FEP7/2, GBNNSIP, Non-native, ScotBL, WCA1i, WO1i |
| Wigeon, *Anas penelope* | 103 | 1997 - 2015 | BAmb, BD2.1, BoCC4-Amber, CITESC, CMS_A2, CMS_AEWA-A2, GBNNSIP, WO1ii |
| Wood Sandpiper, *Tringa glareola* | 6 | 1999 - 2000 | BAmb, BD1, Bern2, BoCC4-Amber, CMS_A2, CMS_AEWA-A2, ScotBL, WCA1i |
| Yellow Wagtail, *Motacilla flava* | 41 | 1980 - 2015 | Bern2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL, WO1i |
| Yellowhammer, *Emberiza citrinella* | 27 | 1982 - 2015 | Bern2, BoCC4-Red, FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP |

| Bony Fish (actinopterygii) (3 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Brown/Sea Trout, *Salmo trutta* | 1 | 1987 - 1987 | ScotBL, Sect.41, Sect.42, UKBAP |
| European Eel, *Anguilla anguilla* | 13 | 1988 - 2015 | LBAP:3, OSPAR, RLGLB.CR, ScotBL, Sect.41, Sect.42, UKBAP |
| Spined Loach, *Cobitis taenia* | 7 | 0 - 2015 | Bern3, HSD2p, LBAP:3, Sect.41, UKBAP |

| Crustacean (1 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| *Crangonyx pseudogracilis* | 5 | 2003 - 2004 | GBNNSIP, NE_EA_INNS, Non-native |

| Flowering Plant (38 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| American Willowherb, *Epilobium ciliatum* | 1 | 2016 - 2016 | GBNNSIP, Non-native |
| Apple, *Malus pumila* | 1 | 2016 - 2016 | GBNNSIP, Non-native |
| Barren Brome, *Bromus sterilis* | 1 | 2016 - 2016 | GBNNSIP |
| Bramble, *Rubus armeniacus* | 1 | 2015 - 2015 | GBNNSIP, Non-native |
| Bristly Oxtongue, *Picris echioides* | 5 | 2012 - 2016 | GBNNSIP |
| Canadian Waterweed, *Elodea canadensis* | 1 | 2016 - 2016 | GBNNSIP, NE_EA_INNS, Non-native, WCA9 |
| Charlock, *Sinapis arvensis* | 2 | 2016 - 2016 | GBNNSIP, ScotBL |
| Common Field-speedwell, *Veronica persica* | 2 | 2012 - 2012 | GBNNSIP, Non-native |
| Common Mallow, *Malva sylvestris* | 4 | 2012 - 2012 | GBNNSIP |
| Common Poppy, *Papaver rhoeas* | 1 | 2016 - 2016 | GBNNSIP |
| Common Vetch, *Vicia sativa subsp. segetalis* | 2 | 2016 - 2016 | GBNNSIP, Non-native |
| *Crepis vesicaria subsp. taraxacifolia* | 1 | 2016 - 2016 | GBNNSIP |
| Cut-leaved Crane's-bill, *Geranium dissectum* | 1 | 2016 - 2016 | GBNNSIP |
| Flixweed, *Descurainia sophia* | 1 | 2014 - 2014 | FEP7/3, GBNNSIP |
| Ground-elder, *Aegopodium podagraria* | 1 | 2014 - 2014 | GBNNSIP |
| Hedge Mustard, *Sisymbrium officinale* | 1 | 2016 - 2016 | GBNNSIP |
| Hemlock, *Conium maculatum* | 1 | 2016 - 2016 | GBNNSIP |
| Horse-radish, *Armoracia rusticana* | 4 | 2012 - 2012 | GBNNSIP, Non-native |
| Italian Rye-grass, *Lolium multiflorum* | 1 | 2016 - 2016 | GBNNSIP, Non-native |
| Least Duckweed, *Lemna minuta* | 1 | 2016 - 2016 | GBNNSIP, NE_EA_INNS, Non-native |
| Mugwort, *Artemisia vulgaris* | 2 | 2012 - 2012 | GBNNSIP |
| Nuttall's Waterweed, *Elodea nuttallii* | 8 | 2012 - 2012 | GBNNSIP, NE_EA_INNS, Non-native, WCA9 |
| Osier, *Salix viminalis* | 1 | 2016 - 2016 | FEP1, GBNNSIP |
| Prickly Lettuce, *Lactuca serriola* | 7 | 2012 - 2016 | GBNNSIP |
| Scented Mayweed, *Matricaria chamomilla* | 1 | 2016 - 2016 | GBNNSIP |
| Scentless Mayweed, *Tripleurospermum inodorum* | 1 | 2016 - 2016 | GBNNSIP, Non-native |
| Shepherd's-purse, *Capsella bursa-pastoris* | 1 | 2016 - 2016 | GBNNSIP, Non-native |
| Small Nettle, *Urtica urens* | 1 | 2014 - 2014 | GBNNSIP |
| Snowberry, *Symphoricarpos albus* | 1 | 2014 - 2014 | GBNNSIP, Non-native |
| Snowdrop, *Galanthus nivalis* | 1 | 2016 - 2016 | CITESB, GBNNSIP |
| Stag's-horn Sumach, *Rhus typhina* | 1 | 2014 - 2014 | GBNNSIP |
| Sun Spurge, *Euphorbia helioscopia* | 2 | 2012 - 2012 | CITESB, GBNNSIP, ScotBL |
| Sycamore, *Acer pseudoplatanus* | 3 | 2012 - 2016 | GBNNSIP |
| Tubular Water-dropwort, *Oenanthe fistulosa* | 2 | 2016 - 2016 | RLGB.VU, ScotBL, Sect.41, Sect.42, UKBAP |
| Wall Barley, *Hordeum murinum* | 1 | 2016 - 2016 | GBNNSIP |
| White Dead-nettle, *Lamium album* | 5 | 2012 - 2016 | GBNNSIP |
| White Willow, *Salix alba* | 1 | 2016 - 2016 | FEP1, GBNNSIP |
| Wild-oat, *Avena fatua* | 1 | 2016 - 2016 | GBNNSIP |

| Insect - Butterfly (1 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Small Heath, *Coenonympha pamphilus* | 2 | 1998 - 2003 | RLGB.Lr(NT), ScotBL, Sect.41, Sect.42, UKBAP |

| Insect - Moth (1 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Cinnabar, *Tyria jacobaeae* | 2 | 2007 - 2013 | ScotBL, Sect.41, Sect.42, UKBAP |

| Mollusc (4 taxa) | Number of records | Date range recorded | Designations |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Bladder snails, *Physa fontinalis* | 6 | 1996 - 2012 | GBNNSIP, Non-native |
| Jenkins' Spire Snail, *Potamopyrgus antipodarum* | 4 | 1972 - 1994 | GBNNSIP, Non-native |
| Large-mouthed Valve Snail, *Valvata macrostoma* | 1 | 1969 - 1969 | Sect.41, UKBAP |
| Striped Snail, *Cernuella (Cernuella) virgata* | 1 | 2003 - 2003 | GBNNSIP, Non-native |

| **Reptile (1 taxa)** | Number of records | Date range recorded | Designations |
|---|---|---|---|
| Grass Snake, *Natrix natrix* | 2 | 2007 - 2010 | Bern3, Sect.41, Sect.42, UKBAP |

| **Terrestrial Mammal (18 taxa)** | Number of records | Date range recorded | Designations |
|---|---|---|---|
| American Mink, *Neovison vison* | 2 | 2012 - 2014 | GBNNSIP, NE_EA_INNS, Non-native, WCA9 |
| Bats, Chiroptera | 56 | 1937 - 2014 | Bern2, Bern3, CMS_A2, CMS_EUROBATS-A1, FEP7/2, HabRegs2, HSD2p, HSD4, LBAP:3, RLGLB.NT, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Brown Hare, *Lepus europaeus* | 10 | 1977 - 2013 | FEP7/2, ScotBL, Sect.41, Sect.42, UKBAP |
| Brown Rat, *Rattus norvegicus* | 7 | 1977 - 2009 | GBNNSIP, Non-native |
| Chinese Muntjac, *Muntiacus reevesi* | 4 | 2012 - 2015 | Bern3, GBNNSIP, Non-native, WCA9 |
| Common Pipistrelle, *Pipistrellus pipistrellus sensu stricto* | 9 | 2007 - 2015 | CMS_A2, CMS_EUROBATS-A1, HabRegs2, LBAP:3, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Daubenton's Bat, *Myotis daubentonii* | 4 | 2015 - 2016 | Bern2, CMS_A2, CMS_EUROBATS-A1, FEP7/2, HabRegs2, HSD4, LBAP:3, ScotBL, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Eastern Grey Squirrel, *Sciurus carolinensis* | 4 | 1996 - 2015 | GBNNSIP, Non-native, WCA9 |
| Eurasian Badger, *Meles meles* | 6 | 2001 - 2015 | Bern3, PBA, WO5 |
| European Otter, *Lutra lutra* | 2 | 2006 - 2014 | Bern2, CITESA, FEP7/2, HabRegs2, HSD2p, HSD4, RLGLB.NT, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| European Rabbit, *Oryctolagus cuniculus* | 10 | 1977 - 2003 | GBNNSIP, Non-native |
| European Water Vole, *Arvicola amphibius* | 59 | 1977 - 2015 | FEP7/2, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4.a, WCA5/9.4b, WCA5/9.4c |
| Harvest Mouse, *Micromys minutus* | 2 | 1974 - 1996 | Sect.41, Sect.42, UKBAP |
| Noctule Bat, *Nyctalus noctula* | 2 | 1992 - 2015 | Bern2, CMS_A2, CMS_EUROBATS-A1, FEP7/2, HabRegs2, HSD4, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Pipistrelle Bat species, Pipistrellus | 9 | 1999 - 2016 | Bern2, Bern3, CMS_A2, CMS_EUROBATS-A1, FEP7/2, HabRegs2, HSD4, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Soprano Pipistrelle, *Pipistrellus pygmaeus* | 2 | 2005 - 2008 | Bern2, CMS_A2, CMS_EUROBATS-A1, HabRegs2, HSD4, LBAP:3, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| Unidentified Bat, Myotis | 2 | 2015 - 2015 | Bern2, CMS_A2, CMS_EUROBATS-A1, FEP7/2, HabRegs2, HSD2p, HSD4, LBAP:3, RLGLB.NT, ScotBL, Sect.41, Sect.42, UKBAP, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a |
| West European Hedgehog, *Erinaceus europaeus* | 4 | 1977 - 2006 | Bern3, ScotBL, Sect.41, Sect.42, UKBAP |

Greater Lincolnshire Nature Partnership
Banovallum House
Manor House Street
Horncastle
Lincolnshire
LN9 5HF

Tel: 01507 528398
Email: info@glnp.org.uk
Web: www.glnp.org.uk

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# ECOLOGY AND PROTECTED SPECIES SURVEY
# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

## APPENDIX 2

**Procedure to follow in the event of finding bats on site**

# ECOLOGY AND PROTECTED SPECIES SURVEY
# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

Procedure to follow if bats are discovered during works

- If at any point during the works, bats are discovered then contractors must stop work immediately and telephone Scarborough Nixon Associates either Helen Scarborough on 01526 344726 or 07979 833524 or Ian Nixon on 01205 723342 or 07833 674500.

- Scarborough Nixon Associates will either provide an appropriately licensed bat worker to the site or provide a member of staff who will liaise directly with Natural England. Actions will then be taken following advice given. This may include removal of bats, but only where direct written or verbal permission is gained from Natural England.

- Only when Natural England is satisfied that there is no further risk to bats will works recommence.

- Should it transpire that the operation being carried out is of more risk to bats than was originally thought, then works will be stopped until they can be supervised by an appropriately licensed bat worker.

- If a bat is found under a tile or any other aperture, works will stop immediately (as above). If the bat does not voluntarily fly out, then the aperture will be carefully covered over to protect the bat(s) from the elements, leaving a small gap for the bat to escape voluntarily. Any covering should be free from grease or other contaminants, and should not be a fibreglass-based material.

- Any injured bats should be gently placed in a secure ventilated box in a cool, quiet dark place (e.g. cardboard box with a sealed lid) by the contractor for the bat's protection whilst awaiting the arrival of the licensed person.

# ECOLOGY AND PROTECTED SPECIES SURVEY
# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

**APPENDIX 3**

**Barn owl features**

# Barn Owl Towers

An advisory leaflet for farmers, developers and local authorities

Creative Conservation

Wildlife Conservation Partnership

## Why are Barn Owls vulnerable?

### Causes of their decline

By the mid 1980's agricultural intensification, urbanisation and road building had led to the loss of rough grassland and the fragmentation of this habitat on a nation-wide scale.

In England and Wales alone, Barn Owls declined from an estimated 12,000 breeding pairs in 1932 to just 3,800 breeding pairs by 1985. By the mid 1990's the population had begun to stabilise and in recent years has increased where special conservation efforts have been made.

The Barn Owl remains a scarce bird in many parts of the UK. It is both 'Amber Listed' and a Red Data Book species listed in Category 5, which means there is cause for concern for its declining numbers. As such the Barn Owl is also a Priority Species in over 40 Local/Regional Biodiversity Action Plans.

### Legislation

Barn Owls like all wild birds, are protected by law in the UK making it an offence to intentionally kill, injure or take them or damage, take or destroy their nest or eggs. The Barn Owl is protected further making it unlawful to intentionally or recklessly disturb it while preparing to breed or is at a nest with eggs or young, or to disturb its dependent young.

Breach of this legislation can give rise to a criminal offence, a maximum fine of £5000 and/or a custodial sentence of up to six months.

### Local plan policy and guidance (PPS9)

Because Barn Owls are specially protected while breeding the use of owl towers, owl lofts and nestboxes often form part of a Planning Condition or Obligation. The purpose of these are to prevent harm to Barn Owls from any adverse effects of a development.

## What are we doing to help?

### Habitat enhancement and creation

A programme to conserve Barn Owls throughout the UK was instigated in 1988 when we set up Priority Protection Areas.

As a result, habitat restoration work, coupled with the introduction of Government agri-environment schemes, has led to the widespread restoration of rough-grassland, a habitat whose importance to Barn Owls and many other species, had previously gone unrecognised.



We specifically targeted field margins and the banks of watercourses for our habitat restoration programme in order to provide a countywide network of prey-rich grassland corridors to help repair the fragmentation and isolation of Barn Owl communities.

These new and extensive networks of natural and semi-natural habitats have helped restore Barn Owl numbers not only by creating new feeding places, but most importantly by providing habitat connectivity, aiding the successful dispersal of young owls, farm to farm and county to county.

As these feeding habitats have increased, nesting sites have continued to decline. Because of this, concerted efforts are made every year to install more artificial nest sites, protect and conserve traditional breeding sites and compensate for those which are being lost to development or decay.

## Design Specifications

Barn Owl tower using reclaimed bricks and pantiles.




Dimensions are approximate and depend upon thickness of bricks used. Based on 9" x 4½" x 2½" bricks (1200 No.) in this example.

**Wildlife Conservation Partnership**
Email: colinshawyer@aol.com
Tel: 01582 832182

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Bob Sheppard and Gus Grant (concept and design).
Bob Sheppard, Colin Shawyer, Graham Gomer, and Alan Ball (photographs and drawings).

## What do Barn Owls need?

### Feeding and hunting

Barn Owls feed on small mammals, primarily field voles, shrews and woodmice. They usually breed in the same place every year feeding and roosting, within 1.5 km of the nest and up to 5 km in winter.

To breed successfully a pair of owls and their young need to find about 10,000 small mammals a year. To achieve this they require extensive lengths (15 km long and 3 m to 6 m wide) of rank, tussocky grassland along field margins or the banks of rivers, streams and ditches. Fields of largely unmanaged grass, totalling 35 ha, are also used when prey-rich field edges are the preferred places for hunting.



### Nesting and roosting

Barn Owls nest in old farm buildings, hay stacks, large tree hollows and occasionally in the cavities of cliffs and quarries. Since 1988 and the instigation of our national conservation strategy for this bird, nestboxes in trees and on poles, have become the most common breeding sites in the UK.



### Providing an innovative and permanent nest site for Barn Owls

This was the dream of a farmer who wanted a purpose-made structure which would complement the surrounding farmland, attract Barn Owls and provide a long-lasting monument to a lifetime's devotion to farming and wildlife.

This became a reality in 2003 when the first owl tower was used by breeding Barn Owls.



Since then owl towers have now not only attracted the interest of farmers and other conservationists but also developers and local authorities, keen to use this new concept within their farm plans for Environmental Stewardship and as a permanent means of mitigating for the loss of traditional breeding sites following, for example, the demolition or development of farm buildings.

### About owl towers

In response to farmers, landowners and planning authorities for artificial nest structures of a permanent nature, Barn Owl specialist Bob Sheppard and a local farmer, Gus Grant, designed an owl tower which could be constructed in brick or stone.



### Accommodating Little Owls, Kestrels and other species

The owl tower incorporates nest sites for Little Owls and Kestrels. Small cavity nesting birds such as tits, sparrows and flycatchers as well as bats can also be accommodated (contact us for advice).

Our experience has shown that these species will breed and roost happily alongside one another inside their own self-contained nestboxes.





***Please Remember:***

- On agricultural units of land of 5 hectares or more, the erection of a building for agricultural purposes is permitted. If in doubt, seek guidance from your local authority.
- Build the owl tower in the open a kilometre or more from a major road, close to a field margin or watercourse.
- Line all nest chambers with 1" of wood chippings.

**Let us know about the success of your owl tower or other Barn Owl nestbox, it helps us to determine the value of our conservation initiatives.**

### Design and installation of nestboxes

Our research over the last 25 years has led to the manufacture of three different styles of Barn Owl nestbox and owl loft for installation in or on buildings, trees or poles. Our large nestboxes have been specifically designed to maximise this bird's chances of breeding successfully.





Our nestboxes are used by leading conservationists, farmers and landowners and are designed to be installed easily and safely and allow inspection and maintenance. They use non-metallic fixings and are made of marine-grade plywood. This material is used exclusively because it is durable, biodegradable and has low thermal conductivity, thereby maintaining consistent temperatures and humidity within the nestbox.

**The Barn Owl Trust**
Waterleat, Ashburton
Devon TQ13 7HU
Tel 01364 653026
email info@barnowltrust.org.uk

# Nestboxes for use on vertical tree trunks

LEAFLET No 2

Reg. Charity No 299 835

***This leaflet describes how to make and erect a Barn Owl nestbox suitable for erection on a vertical tree trunk. This box design can also be used on the outside wall of a building or on a tall pole, but this is not recommended unless there is no other option available.***

***The information includes plans, dimensions, materials and safety advice.***

## Suitability of the area

The Barn Owl is not a woodland bird. It hunts mainly by flying over areas of rough grassland, ditches, hedgerows, young tree plantations etc. that support a high population of small mammals. In areas with an abundance of food but a shortage of suitable sites, nestboxes can be of great benefit. They should always be placed in areas with some good Barn Owl habitat or they are unlikely to be used. For further information, see *Habitat Management* (leaflet no.1).

Most nestboxes for Barn Owls are provided within buildings; see *Nestboxes for use in Barns and other Buildings* (leaflet no.3). However, where a suitable location for an indoor box is not available, outdoor nestboxes are often the next-best option.

## Construction

The basic box should be built using rot-resistant or treated sheet material. The Barn Owl Trust uses 9 or 12mm tanalised (⅜"-½") softwood ply, 25 x 50mm (2" x 1") tanalised batten and 30mm (1¼ ") rust resistant screws. Please avoid using hardwood ply, unless it is stamped "FSC Approved". You may use any type of preservative on the box where tanalised ply is not available, but always follow the product instructions and always ensure the box is completely dry before erection. The dimensions are given as a guide, variations of + or - 10% are quite acceptable.

The front of the box should have an access panel to enable nest debris to be cleared out periodically. Under the Wildlife and Countryside Act 1981, it is an offence to disturb breeding Barn Owls so nestboxes should only be cleaned out between November and January. The top of the box should be covered with heavy duty roofing felt and it is advisable to use a waterproof sealant in all the wood joints to increase weather protection. Do ensure that large drainage holes (20mm - ¾" - diameter) are drilled in the floor of the box. The front, back and sides **MUST** overhang the floor of the box.

## Selecting a suitable tree

Having found a suitable area and gained the landowner's consent, you should carefully select the most suitable tree. Do not rush this. The success of your nestbox will depend partly on the size and shape of the tree, its position, and the position of the box when erected.

An isolated tree near an area of good habitat is ideal. Whenever possible, choose a tree with rough bark to enable owlets to climb back up to the box should they fall out. A tree on the outside of a copse is acceptable but avoid trees within woodland. Avoid siting your box within 1km (½ mile) of a dual-carriageway, motorway or similar modern road. If possible, choose a deciduous tree or a Scots Pine. Often there is no choice, but do have a good look around. Time spent in reconnaissance is seldom wasted.

The ideal tree is old and very big. Pick a tree where the box will be visible below the crown (twigs/leaves) of the tree so that Barn Owls can see it and can fly in and out from various directions without having to negotiate small branches in the dark. Old Oak trees and Scots Pines are particularly accommodating in this respect.

If ivy is growing on the tree, it will probably obscure the entrance hole to the box within a few years. Anything that makes the hole less visible will reduce the chances of the box being used.

Old-style boxes with a low entrance (such as that shown in leaflet no. 4) must be situated within the branches of the tree. The box design in this leaflet (with the entrance hole high above the nest level) has a number of advantages over the low entrance boxes, as they can be attached either within the tree branches or on the side of a vertical tree trunk.

The main advantage of the box described in this leaflet is that it's fairly difficult for the young to get out. This reduces the chances of them falling from the box before they can fly and dying as a result of neglect or predation.

Another advantage of this style of box over some other designs, is that it provides an exercise area outside the box for the young and the flat roof allows the young to hop from the tray to the roof and then to the tree to exercise, and the reverse if they fall and need to climb back up. Many nestbox designs are impossible for the young to get back into unless they are already able to fly.

## Siting the nestbox

Having found an area of good habitat and a suitable tree for your box, again take your time in deciding where in the tree you are going to put it. Several factors need to be considered. The box must face open ground so that the entrance hole is obvious to a passing owl. Do not hide it behind the tree - if the hole cannot be seen the box is unlikely to be used. Try to avoid facing the entrance into the prevailing wind and rain. Generally this means avoiding the west or south-west. South-east is generally a good direction. If you have no option but to face the entrance to the west/south-west, try to find another tree!

Barn Owls have used hollows entered from the top of the trunk down to ground level, so from the owl's point of view height may not be very important. However, an important consideration is that the nestbox is safe from interference by man. If a ladder is required in order to reach the box this will help deter the inquisitive passer-by. A height in the region of 4.5-7 metres (14'-24') may be achieved depending on the tree concerned. It is a good idea to ensure that, when erected, the box is slightly lower at the front. This will help prevent rain water splashing in through the entrance hole.

Although young Barn Owls do not start to fly until eight weeks old, they begin to walk at only three weeks. There is often an age difference of two weeks between the oldest and the youngest owlet. As the oldest ones become more and more mobile they emerge from the nestbox to stretch, flap their wings and attempt short flights within the tree. It is at this stage that an owlet is most likely to fall to the ground. The chances of this can be reduced by positioning the box so that the owlet can jump easily from the tray or roof of the box into nearby branches The box may need to be inspected or cleaned out in future so position the box so that this can be done safely.

## Erecting the box

An outdoor box is quite heavy to lift single-handed and using ladders is potentially dangerous. The most important thing when erecting the box is your own safety (for which you are responsible). Please do not work alone and consider using two ladders. Tanalised 50mm x 50mm (2"x2") timber and galvanised nails can be used to secure the box; often this is the only practical option. Alternatively you can drill holes and use nylon bolts.

A piece of tanalised timber 50mm x 50mm x 750mm (2" x 2" x 30") should be attached to the trunk of the tree, making sure that it is level and VERY secure. This should have 'hooks' made out of 25mm x 50mm (1"x 2") tanalised timber attached to each end. These should be approximately 75mm (3") long and the top 25mm (1") will protrude above the top of the ends of the 50mm x 50mm timber (see diagram). The purpose of this is to enable the box to be placed so that it is held in place by the hooks, allowing the person erecting the box to have both hands free whilst attaching it.

A second piece of 50mm x 50mm tanalised timber should be attached firmly to the back of the box approximately 200mm (8") from the top (see diagram). This should be attached from the inside of the box through to the timber, not through the timber into the box! This joint will take all the weight of the box so it needs to be very secure. The piece that is attached to the box will rest on the piece that is attached to the tree. Holes should be drilled to enable the two pieces to be nailed or screwed together when the box is in position. Bear in mind that it will be difficult to get at some parts of the timber to hammer or screw once the box is in position so drill the holes close to each end.

## Safety

Before you erect your nestbox take time to consider the hazards you might face and what steps you could take to minimise the risks. Hazards might include an injury at a remote location; falling from a ladder; injury from heavy lifting; dropping a nestbox onto another person; or poor positioning of a box resulting in additional hazards for anyone monitoring the box at a later date. The following are examples of precautions you should take to reduce the risks.

1. Ideally take a companion. If erecting your nestbox at an isolated site alone, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one.
2. Time spent in reconnaissance and preparation is seldom wasted. Never carry a box up into position until all preparatory work is complete. Double-check your measuring to confirm that the box will fit.
3. Ensure that your ladder is secure before climbing it. If possible tie it off at the top and bottom before climbing up with a nestbox.
4. Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably.
5. When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely.
6. When carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of both you and the ladder so that it pulls you towards the ladder - never hold a nestbox behind or above you.
7. You are responsible for your own safety - assess all the risks and be careful.

## Nestboxes on poles

In areas with plenty of good habitat but no suitable trees or buildings it is possible to provide boxes on poles. It is illegal (and dangerous) to erect a box on an operational telegraph/electricity pole without the express permission of the pole owner. Erecting your own pole is a lot of work and can be expensive. With this type of project the boxes used are normally much bigger and of an entirely different design incorporating two separate cavities in one box.

## Occupation by other species

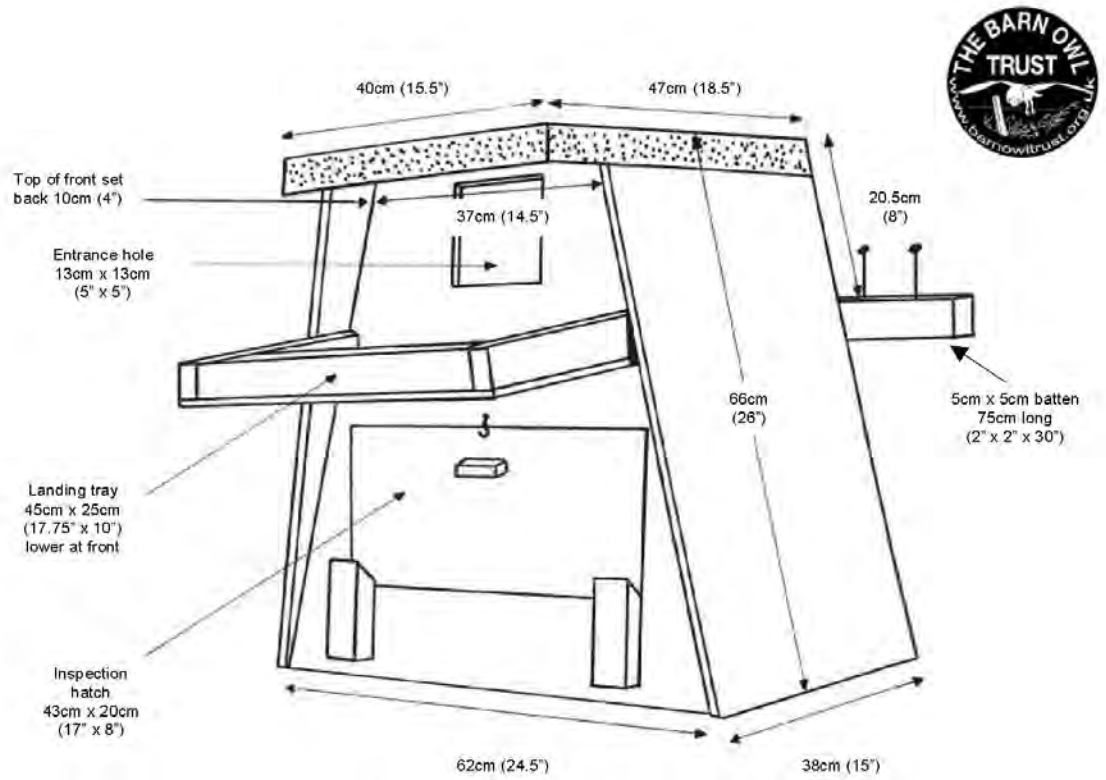
The outdoor box described in this leaflet is designed specifically for Barn Owls but it is possible that jackdaws, stock doves, tawny owls, little owls or some other species could use it. Jackdaws can be a problem in some areas as they tend to take over all available sites, and can fill boxes with sticks. These should be cleaned out before the following February.

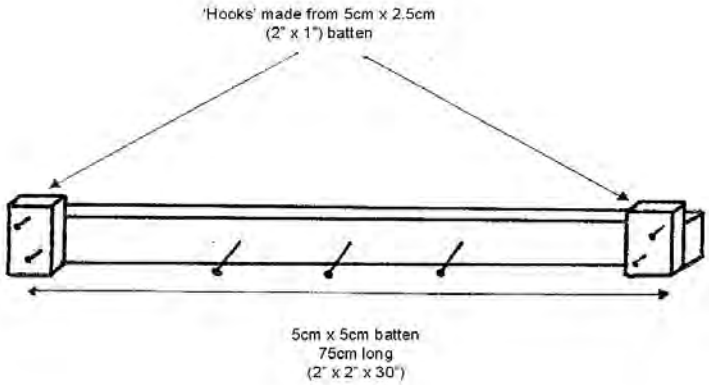
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2/2


THE BARN OWL TRUST
www.barnowltrust.org.uk
40cm (15.5")
47cm (18.5")
Top of front set back 10cm (4")
37cm (14.5")
20.5cm (8")
Entrance hole 13cm x 13cm (5" x 5")
66cm (26")
5cm x 5cm batten 75cm long (2" x 2" x 30")
Landing tray 45cm x 25cm (17.75" x 10") lower at front
Inspection hatch 43cm x 20cm (17" x 8")
62cm (24.5")
38cm (15")


'Hooks' made from 5cm x 2.5cm (2" x 1") batten
5cm x 5cm batten 75cm long (2" x 2" x 30")

2/3

**The Barn Owl Trust**
Waterleat, Ashburton
Devon TQ13 7HU
Tel 01364 653026
email info@barnowltrust.org.uk

# Erecting your nestbox

LEAFLET No 45

Reg. Charity No 299 835

***This leaflet provides information on how and where to place Barn Owl nestboxes, including advice on trees, buildings and safety.***

## Good Barn Owl habitat

Nestboxes are best placed close to areas of good habitat. Food supply and therefore habitat is one of the main factors governing Barn Owl numbers. The best habitat for Barn Owls is rough grassland supporting a high Field Vole population. Damp, tussocky grassland in fallow or lightly grazed pasture is ideal. Ditch sides, hedge banks, young tree plantations, forest rides and (unfortunately) roadside verges and railway embankments are often good hunting grounds. Some areas are good at certain times of year, such as hay meadows in summer.

The creation of new woodlands is beneficial to Barn Owls in the short term due to the rough grass which develops between the new plantings. However, some benefit is lost as the trees grow. The Barn Owl is not a woodland bird, so don't put your box in a wood.

## Where do Barn Owls roost and breed?

Barn Owls will use both isolated buildings and barns in busy yards. The ideal building will have access high above the ground, have a level place for egg-laying and afford good shelter. Most modern barns are unsuitable for Barn Owls unless a nestbox is installed. Many traditional barns are also far from ideal and Barn Owls will benefit from a nestbox.

Tree hollows are also used by Barn Owls. Boxes can be placed in trees, but outdoor boxes are more likely to be used by other species than those in buildings. Barn Owls look for holes not boxes - when making an entry into a building or positioning a nestbox in a tree, make sure the hole is visible to any passing owl.

## Privacy

Barn Owls like to roost out of sight of humans and are much less inclined to be flushed from a building if they have a box to hide in (it is amazing how much "disturbance" Barn Owls will tolerate at sites with a suitable nestbox). Almost any tall rural building can become an ideal roosting and nesting site when a nestbox is provided.

PLEASE NOTE that it is illegal to disturb wild Barn Owls whilst they are breeding. It is not even permitted for the provider of the nestbox or the site owner to look in a nest unless they have a current nest inspection licence (see *Safeguarding Wild Sites* leaflet no 28).

## Positioning an indoor nestbox

1. Fix it up as high as possible; however, remember that fully enclosed modern barns with little ventilation can become very hot in fine weather - in this type of building the box should be placed below the apex but at least 3 metres above ground level. Bear in mind that you also need to place the box to allow removal of the lid.
2. Position the box so that an owl coming into the building using the most likely entrance will see the entrance hole and have an easy flight path to it.
3. If possible, position the box so that emerging nestlings can walk on beams or other flat surfaces.
4. Consider your own safety (for which you are responsible). Try to position the box where it can be easily and safely inspected at a later date.
5. The box must stay totally dry if it is to last for years.
6. It is generally best to avoid placing boxes within 1km (½ mile) of a motorway, dual-carriageway or other modern A road with rough grass verges (due to the high risk of road mortality).
7. Avoid buildings subject to irregular loud disturbance, for example sheds used for night-time lambing in January/February are less favoured. Bales stores, covered yards, silage stores are normally OK.
8. For hygiene reasons avoid buildings used for grain storage.

There is no need to line the nestbox. The eggs are normally laid on a layer of the birds' own pellet debris which is a wonderfully absorbent material - much better than anything people can provide!

Permenant access into the building for the owls is obviously essential. If there is no hole you can create one using the following guidelines:

1. Make the entrance hole about 12cm (5") wide x 25cm (10") high (minimum 4" x 6").
2. The hole should be at least 3 metres (10 feet) up and as visible as possible to any passing owl rather than screened by trees or other buildings
3. When making access into an attic of an occupied dwelling or barn undergoing conversion please refer to *Barn Conversions* (leaflet no. 22) or our booklet *Barn Owls On Site - A Guide for Developers and Planners*.
4. In the case of an occupied house, converted barn or busy farmyard, the entrance hole into the building should, if possible, be situated on the side of the building with the least disturbance, with direct access to an open area of good habitat. Avoid facing the entrance hole into the prevailing wind.

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## Positioning an outdoor nestbox

1. Carefully select the best tree. A large, old and isolated tree near an area of good habitat is ideal. Choose a tree that has little or no foliage in the lower part so that the box entrance is very likely to be noticed by any passing owl (rather than screened by foliage).
2. Try to avoid facing the box west or southwest (avoiding the prevailing wind and rain).
3. Place the box so as to deter interference by inquisitive passers-by. A height of 4.5-7 metres (14'-24') may be achieved depending on the tree concerned.
4. Ensure that, when erected, the box is slightly lower at the front. This will help prevent rain water running or splashing in through the entrance hole.
5. It is preferable for the nestbox to be within the body of a rough-barked tree so that any nestlings that fall down have a better chance of being able to climb up and get back inside. Bear in mind that the box may need to be inspected or cleaned out in future so position the box so that this can be done safely.
6. It is generally best to avoid placing boxes within 1km (½ mile) of a motorway, dual-carriageway or other modern A road.
7. Tanalised 50 x 50mm (2" x 2") timber and galvanised nails can be used to secure the box. If you don't wish to nail into the tree you can try lashing timber onto the tree using rot-proof cord and nailing the box to that. Alternatively, you can drill holes and use nylon bolts.

## What are the chances of my box being used?

This depends upon what is limiting the species in your area. If there is an ample food supply but a shortage of suitable roosting and breeding sites then your box could be occupied very quickly. Conversely, if there are plenty of potential sites but a severe shortage of food then your box may never be used. Providing that habitat in your area is reasonably good or there is potential for improvement in the future it is always worth erecting a box. If you own land, think about creating Barn Owl habitat yourself. Habitat in any area may well improve in years to come as public demand leads to more wildlife-friendly food production.

## Safety

Before you erect your nestbox take time to consider the hazards you might face and what steps you could take to minimise the risks. Hazards might include an injury at a remote location; falling from a ladder; masonry falling from unsound buildings; injury from heavy lifting; dropping a nestbox onto another person; or poor positioning of a box resulting in additional hazards for others using the building or monitoring the box at a later date.

The following are examples of precautions you should take to reduce the risk of accident.

1. If possible take a companion. However if erecting your nestbox at an isolated site on your own, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one
2. Time spent in preparation is seldom wasted. Never carry a box up into position until all necessary preparatory work is complete. Double-check your measuring to confirm that the box will fit
3. Ensure that your ladder is secure before climbing it. If possible tie it off at the bottom and always tie the top before ascending with your nestbox
4. Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably
5. When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely
6. When carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of both you and the ladder so that it pulls you towards the ladder - never hold a nestbox behind or above you
7. You are responsible for your own safety - assess the risks and be careful.

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# ECOLOGY AND PROTECTED SPECIES SURVEY
# LEAVES LAKE DROVE, WEST PINCHBECK, LINCOLNSHIRE

## APPENDIX 4

**Bat roost units**

IBSTOCK
innovators in clay

ideas into action

eco habitats for bats

**Eco Habitats for Bats - Technical Data: A**

| | |
|---|---|
| Sizes | 215mm x 215mm or 215mm x 295mm |
| Durability | F2 S3 - Fully Frost Resistant |

**Eco Habitats for Bats - Technical Data: B**

| | |
|---|---|
| Sizes | 215mm x 215mm or 215mm x 295mm |
| Durability | F2 S2 - Fully Frost Resistant |

**Eco Habitats for Bats - Technical Data: C**

| | |
|---|---|
| Size | 215mm x 65mm |
| Durability | F2 S2 - Fully Frost Resistant |

A

B

C

IBSTOCK
innovators in clay

ideas into action

eco habitats for bats

A

B

C

**Features & Benefits**

**Enclosed bat box (A & B)**
- Designed with the Pipistrelle Bat in mind
- Available in all brick types
- Attractive motif
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the Bat Box itself
- Maintenance free as the entrance is at the bottom
- Ideal for new build & conservation work

**Free Access Option (C)**
- Discrete Single Bat brick
- Easy to install
- Allows bats to create a natural home habitat within the cavity of the building

www.ibstock.com

**contact numbers**

**sales office** 0870 903 4010
**design advice** 0870 903 4018
**technical services** 0870 903 4017
**literature and samples** 0870 903 4030

## 3 Boxes for Bats

**BAT ACCESS PANEL 1FE**
This maintenance-free access panel can be installed in the outer skin of most cavity wall constructions due to its slim 80mm depth. The open rear also allows access into the building cavity so that bats can continue to use an existing roost space.
**Size:** 300x300x80mm
**Weight:** 7.8kg



**BAT TUBE 1FR**
The Bat Tube 1FR requires no maintenance or cleaning, the sloping entrance area allows droppings to simply fall out of the chamber. The 1FR mimics the cavities that species such as the pipistrelles favour and the wooden back panel helps maintain the optimum climatic conditions and also provides surface on which the bats can cling. The depth of this box (125mm) makes it ideal for use in 9" solid walls or where the outer skin of a property is of stone. The box can also be recessed into the wall and rendered over, just leaving the access section clear.
**Size:** 470x200x125mm
**Weight:** 9.5kg



**BAT TUBE 2FR**
This is a slightly updated version of the 1FR and several can be installed next to each other to create a larger roost. The tubes include an internal panel to increase the roost space and also an optional passage at the rear allowing access into existing cavities.
**Size:** 470x200x125mm
**Weight:** 9.5kg



**BAT BRICK TYPE 27**
The Type 27 Bat Brick is designed to be built into the structure of buildings and includes a removable front panel for monitoring purposes. An internal roughened wood panel increases the available roost space.
**Size:** 265x180x240
**Weight:** 9.5kg



**BAT ROOST 1FQ**
This is the latest in bat boxes. Designed to fit to the outside of buildings, the shape and design of the box make it equally attractive as a roost or nursery.
**Size:** 600x350x90mm
**Weight:** 15kgs



**WINTER BAT ROOST 1WQ**
Based on the successful 1FQ, this box has better insulation properties for use as a winter roost by bats
**Size:** 580x380x115
**Weight:** 21kg



Both of the above boxes are easily fixed to the outside of a building with two screws and a galvanised bracket as shown below.

CAVITY BAT ROOST
Wild-X
Dimensions
A Height: 440mm
B Width 420mm
C Depth (at base) 120mm
Weight: 12kg
Material:
Cement/woodchip mix
Internal:
Internally there is approx 350 square centimetres of roosting space. This space is divided up to form crevices ranging from 10mm to 25mm which also creates places to hide and spots where it is warmer or cooler
Distributor:
KEY FEATURES
Incorporates into structures using standard face materials
Supplied with lintel and DPM for the cavity tray
Creates a permanent bat roost that cannot be removed by subsequent occupiers
Unobtrusive "entrance" makes little impact on building appearance
Suitable for a wide range of bat species
A
B
C
Cavity Tray
Lintel
75mm min cavity
The entrance is 20mm wide by 60mm high which is basically the width of 2 normal house bricks. The gap at the top of the entrance ramp is approx 20-25mm which is ideal for the smaller bat species.
Wienerberger
Building Value
Bat Boxes. To protect and conserve.
ecoLUV
Further details information on Wienerberger bat boxes and bat conservation is available at www.brick.co.uk/batbox or contact Design Services on 0161 491 8200