

Ecology and Protected Species Survey  
Fellands Gate  
Leake Commonside  
Lincolnshire



Issued to:

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FEBRUARY 2022



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## ECOLOGY AND PROTECTED SPECIES SURVEY FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE

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**Report title:** Ecology and Protected Species Survey,  
Fellands Gate, Leake Commonside,  
Lincolnshire

**Revision:** Final

**Original issue date:** February 2022

**Amended:** N/A

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**Date:**  
10<sup>th</sup> February 2022

**Reviewed by:** Andrew Malkinson  
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**Date:**  
18<sup>th</sup> February 2022

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**Date:**  
22<sup>nd</sup> February 2022

# ECOLOGY AND PROTECTED SPECIES SURVEY

## FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE

### Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2</b>	<b>METHODS.....</b>	<b>2</b>
2.1	Data search .....	2
2.2	Common reptile species .....	2
2.3	Bats.....	2
2.3.1	Ground level roost assessment.....	2
2.3.2	Assessment of commuting and foraging habitats .....	3
2.4	Badger .....	4
2.5	Water vole.....	4
2.6	Birds.....	4
2.7	Section 41 species .....	4
2.8	Habitats and plant species .....	4
2.9	Survey constraints and limitations.....	5
<b>3</b>	<b>SITE ASSESSMENT .....</b>	<b>5</b>
3.1	Location and grid reference.....	5
3.2	Improved grassland .....	6
3.3	Arable land.....	6
3.4	Site boundaries and surrounding habitats.....	7
<b>4</b>	<b>RESULTS .....</b>	<b>9</b>
4.1	Data search .....	9
4.1.1	Statutory designated sites.....	9
4.1.2	Non-statutory designated sites.....	14
4.1.3	Priority Habitats .....	14
4.2	Common reptile species .....	15
4.3	Bats.....	15

4.3.1	Ground level roost assessment.....	16
4.3.2	Assessment of commuting and foraging habitats .....	16
4.4	Badger .....	17
4.5	Water vole.....	17
4.6	Birds.....	18
4.7	Section 41 species .....	19
4.8	Habitats and plant species .....	19
<b>5</b>	<b>DISCUSSION AND RECOMMENDATIONS .....</b>	<b>20</b>
5.1	Common reptile species .....	20
5.1.1	Legal protection.....	20
5.1.2	Recommendations .....	20
5.2	Bats.....	21
5.2.1	Legal protection.....	21
5.2.2	Recommendations .....	21
5.3	Badger .....	22
5.3.1	Legal protection.....	22
5.3.2	Recommendations .....	23
5.4	Water vole.....	23
5.4.1	Legal protection.....	23
5.4.2	Recommendations .....	23
5.5	Birds.....	24
5.5.1	Legal protection.....	24
5.5.2	Recommendations for common bird species.....	24
5.6	Recommendations for Section 41 species .....	24
5.7	Recommendations for ecological enhancement .....	25
<b>6</b>	<b>SUMMARY .....</b>	<b>26</b>
<b>7</b>	<b>REFERENCES AND BIBLIOGRAPHY .....</b>	<b>27</b>
<b>APPENDIX 1</b>	<b>.....</b>	<b>29</b>
	Data search results .....	29

<b>APPENDIX 2 .....</b>	<b>30</b>
Bat roost units (Habibat) .....	30
<b>APPENDIX 3 .....</b>	<b>32</b>
Bird box examples (Habibat).....	32

## Photographs

Photograph 1: Improved grassland .....	6
Photograph 2: Further view of the improved grassland .....	6
Photograph 3: Arable field and field margin .....	7
Photograph 4: Further view of the arable field .....	7
Photograph 5: Dry ditch at south-western site boundary .....	8
Photograph 6: Fellands Gate and associated roadside vegetation .....	8
Photograph 7: Arable land across the eastern site boundaries .....	8
Photograph 8: Wet ditch at north-eastern boundary .....	8
Photograph 9: Trees adjacent to the north-western site boundary .....	9
Photograph 10: Elder and bramble scrub along site boundary .....	9
Photograph 11: Broad-leaved trees in the western corner of the site .....	9
Photograph 12: Old bird nest adjacent to the site boundary .....	19

## Tables

Table 1: Internationally important statutory sites within 10km of the site .....	9
Table 2: Assessment of the wet ditch to support water voles .....	18
Table 3: Common bird species seen on site .....	18

## Figures

Figure 1: Aerial view of the site, outlined in red.....	6
Figure 2: Locations of the wet and dry ditches on site .....	17

# ECOLOGY AND PROTECTED SPECIES SURVEY

## FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE

### 1 INTRODUCTION

Inspired Ecology Ltd has been commissioned by Paul Wilkinson to undertake an ecology and protected species survey of Fellands Gate, Leake Commonside in Lincolnshire. The survey is required in connection with plans to excavate a fishing lake and erect associated lodges.

The purpose of this ecology and protected species report is to identify any potential ecological receptors occurring on or adjacent to the works area. These include protected species, habitats and statutory/non-statutory designated nature conservation sites. This report also details any potential ecological constraints to the works (e.g. invasive non-native plants), the requirement for any further ecological survey and/or monitoring works and provides details of proportionate mitigation measures, where appropriate.

The site was surveyed on 8<sup>th</sup> February 2022, in clear and dry conditions, by Director and Principal Ecologist Ian Nixon MCIEEM (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).

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

- Common reptile species
- Bats
- Badger
- Water vole
- Common bird species
- Schedule 1 bird species
- Section 41 species

Certain protected species were scoped out of the survey; in particular, it was considered that white-clawed crayfish *Austropotamobius pallipes*, common dormouse *Muscardinus avellanarius* and otter *Lutra lutra* were highly unlikely to occur on the site due to lack of suitable habitat. Great crested newt *Triturus cristatus* were also scoped out of the survey as the arable field is unlikely to support this species and the only pond within 500m of the site

identified by the Multi-Agency Geographic Information for the Countryside (MAGIC) website is used for fishing (and therefore wholly unsuitable to support breeding great crested newt). Additionally there are no records of great crested newt within 2km of the site and the site is isolated within an arable landscape.

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. English names of higher plants are used throughout the text and are those used by Stace (2019). A location map is given as Figure 1.

## **2 METHODS**

### **2.1 Data search**

The Lincolnshire Environmental Records Centre (LERC) was consulted and commissioned on 10<sup>th</sup> February 2022 to search for sites with statutory and non-statutory designation and records of protected species within 2km of the surveyed site. The MAGIC website was used to identify any statutory sites of international importance within 10km of the site. Where applicable, the records of protected species are included within the relevant section of the report. Records of protected species more than 20 years old are not referred to in this report but are included within Appendix 1.

### **2.2 Common reptile species**

All habitats on the site were assessed for their potential to support common reptile species based on factors such as the presence of suitable sites for basking and the presence of refugia or vegetation offering sufficient structure for shelter and hibernation.

### **2.3 Bats**

#### **2.3.1 Ground level roost assessment**

A preliminary ground level roost assessment was carried out on all trees on the site, in accordance with Collins (2016). The trees were visually checked with the assistance of binoculars for Potential Roosting Features (PRFs) such as:

- Woodpecker holes

- Broken limbs, snag ends, cracks and splits in branches and rot holes
- Cankers with cavities
- Gaps between overlapping stems or branches
- Dense ivy, with stem diameters in excess of 50mm
- Flaking bark

Any trees with roost potential 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 potential roosting features on the tree – no further survey work
- Low – A tree of sufficient size and age to contain potential roost features but with none seen from the ground, or features seen with only very limited roosting potential – no further surveys necessary
- Moderate – One or more potential roost features that could be used by bats on a regular basis – further survey work required (roost feature inspections or emergence/re-entry surveys)
- High – One or more potential roost features that are obviously suitable for use by larger numbers of bats on a regular basis and for longer periods of time – further survey work required (roost feature inspections or emergence/re-entry surveys)

There are no buildings on the surveyed site.

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

In accordance with Collins (2016), the surveyed 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 the 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

## 2.4 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.

## 2.5 Water vole

The ditch channel was assessed for its potential to support water vole *Arvicola amphibius* in accordance with Dean *et al.* (2016) and a search was made of the banks (where access allowed) for signs of use by water voles including feeding stations, burrows, latrine sites, runs through the vegetation and cropped grass around burrow entrances.

## 2.6 Birds

The 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. All bird species noted on site were recorded.

## 2.7 Section 41 species

The site was assessed for its suitability to support a number of species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 41 lists Species of Principal Importance in England. These species include common toad *Bufo bufo*, harvest mouse *Micromys minutus*, brown hare *Lepus europaeus* and west European hedgehog *Erinaceus europaeus*. A note was made of any other Species of Principal Importance under Section 41 of the NERC Act 2006 that were seen on site.

## 2.8 Habitats and plant species

An extended ecological assessment survey was undertaken, not only to identify the habitats present on the site, but also to include more detailed information on any hedgerows and plant species, and to undertake a further appraisal of the area as habitat for legally protected species. This includes assessing whether there are any Habitats of Principal Importance, as listed under Section 41 of the NERC Act 2006, present on site. Plant species were assessed against the Vascular Plant Red Data List for Great Britain (Cheffings *et al.*, 2005), and the site was assessed against the Local Wildlife Site (LWS) criteria for Lincolnshire (Poole and Fraser, 2013).

## **2.9 Survey constraints and limitations**

The walkover survey was not carried out within the optimum survey season for water vole (mid-April – September). A lack of evidence of water vole alone can therefore not be used to confirm water vole absence from the drain at the south of the site.

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

## **3 SITE ASSESSMENT**

### **3.1 Location and grid reference**

The surveyed site comprises an area of land located off Fellands Gate, Leake Commonside in Lincolnshire – central Ordnance Survey Grid Reference (OSGR) TF 39404 52068.

The habitats on site are described in detail below and representative photographs are included in the text. The location of the surveyed site is provided in Figure 1 below.



Figure 1: Aerial view of the site, outlined in red

### 3.2 Improved grassland

The north-western area of the site comprises a 0.8ha field of improved grassland, dominated by fescue species *Festuca* sp. and perennial rye-grass *Lolium perenne* (see Photographs 1 and 2).



Photograph 1: Improved grassland



Photograph 2: Further view of the improved grassland

### 3.3 Arable land

The majority of the site comprises an arable field of approximately 2ha, on which cabbage *Brassica oleracea* is grown (see Photographs 3 and 4). The narrow field margins are vegetated by red dead-nettle *Lamium purpureum*, shepherd's-purse *Capsella bursa-pastoris*,

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bristly oxtongue *Helminthotheca echioides*, common field-speedwell *Veronica persica*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common couch *Elymus repens*, spear thistle *Cirsium vulgare*, white dead-nettle *Lamium album*, groundsel *Senecio vulgaris*, spurge species *Euphorbia* sp., dove's-foot crane's-bill *Geranium molle*, common ragwort *Jacobaea vulgaris*, and creeping buttercup *Ranunculus repens*.



**Photograph 3: Arable field and field margin**



**Photograph 4: Further view of the arable field**

### 3.4 Site boundaries and surrounding habitats

The south-western, north-western, and south-eastern site boundaries comprise dry ditches (see Photograph 5). A further ditch separates the arable land and the improved grassland field. The ditches are vegetated by common reed *Phragmites australis*, bristly oxtongue, cleavers *Galium aparine*, common nettle *Urtica dioica*, bramble *Rubus fruticosus* agg., cow parsley *Anthriscus sylvestris*, willowherb species *Epilobium* sp., rosebay willowherb *Chamaenerion angustifolium*, and dog-rose *Rosa canina*.

Fellands Gate road is beyond the south-western boundary of the site (see Photograph 6). The roadside vegetation is composed of creeping thistle *Cirsium arvense*, common nettle, red dead-nettle, cleavers, cow parsley, broad-leaved dock, creeping buttercup, perennial ryegrass, and cock's-foot *Dactylis glomerata*. There are ploughed arable fields beyond the south-eastern and north-eastern boundaries boundary of the site (see Photograph 7).

The north-eastern boundary of the site is formed by a wet ditch (see Photograph 8). The channel is 750mm wide, and it contained water with a depth of 50mm above a silt layer. The earthen banks are steep at >45 degrees, and are 3m high. The ditch is managed by the Internal Drainage Board. It is vegetated by common reed, cleavers, common nettle, cock's-foot, common couch, and cow parsley. There are no aquatic species within the channel.

Adjacent to the north-western boundary of the site is an area of grassland and a stand of trees containing silver birch *Betula pendula*, hazel *Corylus avellana*, willow species *Salix* sp., beech *Fagus sylvatica*, pedunculate oak *Quercus robur*, Leyland cypress *Cupressus x leylandii*, sycamore *Acer pseudoplatanus*, cherry laurel *Prunus laurocerasus*, and several fruit trees (see Photograph 9).

There are several areas of scattered bramble and elder *Sambucus nigra* scrub along the boundaries of the site (see Photograph 10). There is a particularly dense patch in the eastern corner of the site. In the western corner of the site there is a stand of trees composed of pedunculate oak, eucalyptus *Eucalyptus* sp., and horse-chestnut *Aesculus hippocastanum* (see Photograph 11).



**Photograph 5: Dry ditch at south-western site boundary**



**Photograph 6: Fellands Gate and associated roadside vegetation**



**Photograph 7: Arable land across the eastern site boundaries**



**Photograph 8: Wet ditch at north-eastern boundary**



**Photograph 9: Trees adjacent to the north-western site boundary**



**Photograph 10: Elder and bramble scrub along site boundary**



**Photograph 11: Broad-leaved trees in the western corner of the site**

## **4 RESULTS**

### **4.1 Data search**

#### **4.1.1 Statutory designated sites**

##### Sites of International Importance

The MAGIC website identified The Wash Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar site c.6.3km from the surveyed site. The reasons for the designation of The Wash SPA, SAC and Ramsar site are shown in Table 1, below:

**Table 1: Internationally important statutory sites within 10km of the site**

<b>Site</b>	<b>Reasons for designation</b>
The Wash Ramsar Site	<p>This site qualifies as it meets Ramsar criteria 1, 3, 5, and 6:</p> <p>1: The site contains extensive saltmarshes, major intertidal banks of sand and mud, shallow water, and deep channels.</p> <p>3: The saltmarshes and the plankton in the estuarine water provide the</p>

Site	Reasons for designation
	<p>high levels of primary productivity necessary to support a diverse ecosystem</p> <p>5: The site supports an assemblage of 292,541 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>6: The site supports internationally important populations of the following species during spring/autumn:</p> <ul style="list-style-type: none"> <li>• Common redshank <i>Tringa totanus totanus</i>; 6,373 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Eurasian curlew <i>Numenius arquata arquata</i>; 9,438 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Eurasian oystercatcher <i>Haematopus ostralegus</i>; 15,616 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Grey plover <i>Pluvialis squatarola</i>; 13,129 individuals, representing an average of 5.2% of the population (5 year peak mean 1998/9-2002/3 - spring peak)</li> <li>• Red knot <i>Calidris canutus islandica</i>; 68,987 individuals, representing an average of 15.3% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Sanderling <i>Calidris alba</i>; 3,505 individuals, representing an average of 2.9% of the population (5 year peak mean 1998/9-2002/3)</li> </ul> <p>The site supports internationally important populations of the following species during winter:</p> <ul style="list-style-type: none"> <li>• Black-headed gull <i>Larus ribidundus</i>; 31,403 individuals, representing an average of 1.57% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Common eider <i>Somateria mollissima</i>; 1109 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Bar-tailed godwit, <i>Limosa lapponica lapponica</i>; 16,546 individuals, representing an average of 13.7% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Common shelduck, <i>Tadorna tadorna</i>; 9,746 individuals, representing an average of 3.2% of the population (5 year peak mean 1998/9-2002/3)</li> </ul>

Site	Reasons for designation
	<ul style="list-style-type: none"> <li>• Dark-bellied brent goose <i>Branta bernicla bernicla</i>; 20,861 individuals, representing an average of 10.4% of the population (5 year peak mean 1998/9-2002/3)</li> <li>• Dunlin <i>Calidris alpina alpina</i>; 36,600 individuals, representing an average of 2.7% of the population (5 year peak mean 1998/9-2002/3)</li> </ul> <p>Pink-footed goose <i>Anser brachyrhynchus</i>; 29,099 individuals, representing an average of 10.7% of the population (5 year peak mean 1998/9-2002/3) (JNCC, 2005)</p>
The Wash and North Norfolk Coast SAC	<p>Qualifies under Article 4.4 of the Habitats Directive (92/43/EEC) as it hosts seven Annex I habitats, namely:</p> <ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by seawater all the time. One of the largest expanses of this habitat in the UK. Sublittoral communities present include large dense beds of brittlestars <i>Ophiothrix fragilis</i>. Species include the sand-mason worm <i>Lanice conchilega</i> and the tellin <i>Angulus tenuis</i>. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. The subtidal sandbanks provide important nursery grounds for young commercial fish species, including plaice <i>Pleuronectes platessa</i>, cod <i>Gadus morhua</i> and sole <i>Solea solea</i>.</li> <li>• Mudflats and sandflats not covered by seawater at low tide. The second largest area of this habitat in the UK. The sandflats in the embayment of the Wash include extensive fine sands and drying banks of coarse sand, and this diversity of substrates, coupled with variety in degree of exposure, means that there is a high diversity relative to other east coast sites.</li> <li>• Large shallow inlets and bays</li> <li>• Reefs. In the tide-swept approaches to the Wash, with a high loading of suspended sand, the relatively common tube-dwelling polychaete worm <i>Sabellaria spinulosa</i> forms areas of biogenic reef. The reefs are particularly important components of the sublittoral as they are diverse and productive habitats which support many associated species (including epibenthos and crevice fauna) that would not otherwise be found in predominantly sedimentary areas.</li> <li>• <i>Salicornia</i> and other annuals colonizing mud and sand. The largest single area of this vegetation in the UK occurs at this site</li> <li>• Atlantic salt meadows (<i>Glauco-puccinellietalia maritimae</i>). The Atlantic salt meadows form part of a sequence of vegetation types that are</li> </ul>

Site	Reasons for designation
	<p>unparalleled among coastal sites in the UK for their diversity and are amongst the most important in Europe.</p> <ul style="list-style-type: none"> <li>• Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>). The only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together.</li> </ul> <p>The Annex II species harbour seal <i>Phoca vitulina</i> is also present. The largest colony of common seals in the UK is present at this site, with some 7% of the total UK population (JNCC, 2020)</p>
The Wash SPA	<p>The site qualifies under article 4.1 of the Birds Directive (79/409/EEC) as it supports the following populations: During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>• <i>Sternula albifrons</i> (Eastern Atlantic - breeding) at least 1.4% of the GB breeding population 5 year mean, 1992-1996</li> <li>• <i>Sterna hirundo</i> (Northern/Eastern Europe - breeding) 1.2% of the GB breeding population Count, as at 1993</li> <li>• <i>Cygnus columbianus bewickii</i> (Western Siberia/North-eastern &amp; North-western Europe) 0.9% of the GB population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Limosa lapponica</i> (Western Palearctic - wintering) 21.4% of the GB population 5 year peak mean 1991/92-1995/96</li> </ul> <p>The site qualifies under article 4.2 of the Birds Directive (79/409/EEC) as it supports the following populations:</p> <ul style="list-style-type: none"> <li>• <i>Limosa lapponica</i> (Western Palearctic - wintering) 21.4% of the GB population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Anas acuta</i> (North-western Europe) 1.5% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Anas penelope</i> (Western Siberia/North-western/North-eastern Europe) 1.2% of the population in Great Britain 5 year peak mean 1991/92-1995/96</li> <li>• <i>Anas strepera</i> (North-western Europe) 0.9% of the population in Great Britain 5 year peak mean 1991/92-1995/96</li> <li>• <i>Anser brachyrhynchus</i> (Eastern Greenland/Iceland/UK) 14.8% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Arenaria interpres</i> (Western Palearctic - wintering) 1.1% of the population 5 year peak mean 1991/92-1995/96</li> </ul>

Site	Reasons for designation
	<ul style="list-style-type: none"> <li>• <i>Branta bernicla bernicla</i> (Western Siberia/Western Europe) 7.4% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Bucephala clangula</i> (North-western/Central Europe) 0.7% of the population in Great Britain 5 year peak mean 1991/92-1995/96</li> <li>• <i>Calidris alba</i> (Eastern Atlantic/Western &amp; Southern Africa - wintering) 0.3% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Calidris alpina alpina</i> (Northern Siberia/Europe/Western Africa) 2.6% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Calidris canutus</i> (North-eastern Canada/Greenland/Iceland/North-western Europe) 54.2% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Haematopus ostralegus</i> (Europe &amp; Northern/Western Africa) 2.9% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Limosa limosa islandica</i> (Iceland - breeding) 11.6% of the population in Great Britain 5 year peak mean 1991/92-1995/96</li> <li>• <i>Melanitta nigra</i> (Western Siberia/Western &amp; Northern Europe/North-western Africa) 0.2% of the population in Great Britain 5 year peak mean 1991/92-1995/96</li> <li>• <i>Numenius arquata</i> (Europe - breeding) 1.1% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Pluvialis squatarola</i> (Eastern Atlantic - wintering) 5.8% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Tadorna tadorna</i> (North-western Europe) 5.3% of the population 5 year peak mean 1991/92-1995/96</li> <li>• <i>Tringa totanus</i> (Eastern Atlantic - wintering) 1.7% of the population 5 year peak mean 1991/92-1995/96</li> </ul> <p>The site qualifies under article 4.2 as it supports an internationally important assemblage of birds; over winter the area regularly supports 400367 waterfowl (5 year peak mean 1991/92-1995/96) (JNCC, 2020)</p>

The site falls within the Impact Risk Zone (IRZ) for The Wash, for which the Local Planning Authority should consult Natural England for certain types of development. At this distance, only airports, helipads and other aviation proposals are considered likely to have an adverse impact upon the designated site. As the proposals are not for this type of development The SPA, SAC and Ramsar site are unlikely to be negatively affected by the proposed works.

### Sites of National Importance

The LERC search and MAGIC website did not identify any nationally important statutory sites within 2km of the application site. However, the site falls within the IRZ of a nearby SSSI, for which the Local Planning Authority should consult Natural England for certain types of development. The IRZ is associated with The Wash and North Norfolk Coast SSSI (and associated SPA, SAC and Ramsar site), located 6.3km south-west of the site boundary. The following types of development within this IRZ are considered likely to have an adverse impact on the SSSI:

- Airports, helipads and other aviation proposals.

As the proposals do not meet the above criterion, they are not considered to have a negative impact on the SSSI (or SPA, SAC and Ramsar site).

#### **4.1.2 Non-statutory designated sites**

The LERC search identified one LWS within 2km of the site. This is Hobhole Drain, Simmon House Bridge to Benington Bridge LWS, located c.1.9km west of the site. This LWS comprises a 2.8km stretch of drain with banks of coarse grassland, which supports a diverse community of marshland vegetation towards its southern end, and a mosaic of neutral grassland and wetland habitats.

Given the significant distance between the site and the LWS, and that the proposals are expected to be limited to the footprint of the surveyed site, the development is considered unlikely to affect this LWS.

#### **4.1.3 Priority Habitats**

The LERC search identified the following priority habitats within 2km of the site:

- Lowland mixed deciduous woodland, c.315m north of the site; and
- Traditional orchard, the nearest area of which is located adjacent to the north of the site

The proposed development will be limited to the footprint of the site, thus the above priority habitats will not be impacted by the works.

The Priority Habitat Inventory (accessed via the MAGIC website) also identified coastal and floodplain grazing marsh adjacent to the north of the site, in the same location as the LERC search identified traditional orchard. During the walkover, fruit trees were noted in this area, and the site is not enclosed for grazing, thus it is considered unlikely that this field is grazing

marsh. As such, this is likely to be an error in the Priority Habitat Inventory. The Greater Lincolnshire Nature Partnership (GLNP) reviews priority habitats which are included in the LERC search, whereas the Priority Habitat Inventory is not so rigorously vetted. As such, no coastal and floodplain grazing marsh is present adjacent to the site, and this habitat will therefore not be impacted by the proposed works.

#### 4.2 Common reptile species

No recent records of common reptile species within 2km of the surveyed site were returned by the LERC search. No reptiles were seen during the survey. The ditches and field boundary vegetation may offer commuting and foraging habitat for grass snake. However, it is unlikely that the site is used by a significant population of reptiles given that the majority of the habitat present is unsuitable for common reptile species, there is lack of suitable refugia, and the site is distant from other suitable sites.

#### 4.3 Bats

[REDACTED]

[REDACTED]:

- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]
- | [REDACTED]

The LERC search also included [REDACTED]

[REDACTED]

- | [REDACTED]



#### 4.3.1 Ground level roost assessment

No evidence of roosting bats was noted on the site. No PRFs suitable for occupation by roosting bats were noted in any of the trees on site. The trees are therefore considered to offer habitat of negligible potential suitability to support roosting bats.

#### 4.3.2 Assessment of commuting and foraging habitats

There is some foraging and commuting potential on the site itself due to the presence of a group of trees in the western corner of the site, and isolated elder trees and scrub along the site boundaries. The drain to the north-west may also offer limited foraging and commuting potential for small numbers of bats. Overall, the site is considered to offer habitat of low potential to support foraging and commuting bats.

Within the local area (i.e. within 500m of the site), there are some potentially suitable features for foraging and commuting bats. There are several isolated small stands of trees to the east and west of the site. To the north, the village of Leake Commonside contains many interconnected gardens with trees and hedgerows. There is a network of field boundary drains surrounding the site, though these are poorly vegetated. The small number of habitats and lack of connectivity between them mean that the local area offers habitat of low suitability to support foraging and commuting bats.

The wider landscape (i.e. between 500m – 3km) is dominated by arable land, with the village of Old Leake to the south-east. There are a small number of larger wooded areas to the south-east, including within Old Leake, and to the north-west of the site. To the west, Hobhole Drain and an adjacent railway line, both of which are lined with trees, form a valuable connecting feature for foraging and commuting bats. Besides these features, there are several sparse wooded areas and many field boundary drains throughout the arable landscape.

Overall, the wider landscape is considered to offer habitat of moderate potential suitability of support foraging and commuting bats.

Given that the development is expected to be limited to the footprint of the surveyed site, the proposal is considered unlikely to impact upon any foraging and commuting habitat within the local or wider areas. In addition, the creation of a lake on site will be likely accompanied by landscaping, both of which have the potential to enhance the site's value for foraging and commuting bats.

#### 4.4 Badger

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### 4.5 Water vole

The LERC search returned three records of water vole from within 2km of the site in the last 20 years. The most recent and closest was from 2017 and was located along School Lane 1.2km away from the site. No signs of use by water vole were noted during the survey.

The locations of the ditches surveyed are shown in Figure 2 below:



**Figure 2: Locations of the wet and dry ditches on site**

The dry ditches on site were all assessed as having negligible potential suitability for water vole, given that they are were dry at the time of survey and supported only terrestrial vegetation, indicating they are rarely filled with water. The results of the assessment for the wet ditch at the north-east of the site is presented in Table 2 below:

**Table 2: Assessment of the wet ditch to support water voles**

Habitat Feature	Observations	Suitability for water voles
Bank profile	Steep banks (>45°) along entire drain	Moderate potential
Bank substrate	Earth	Moderate potential
Water levels and fluctuations	Very low water levels, 50mm, likely to fluctuate	Negligible potential
Shading from trees/shrubs	No areas of shading	Low potential
Bankside vegetation type and density	Managed grassland on banks	Low potential
In-channel herbaceous vegetation type, cover and density	No aquatics within channel, cover would be provided by terrestrial plant species	Negligible potential
Vegetation management	Managed by IDB	Low potential
Other	N/A	N/A

Overall, the ditch was considered to provide low potential for water vole.

#### 4.6 Birds

A number of common birds were seen on or flying over the site during the survey. These are listed in Table 3, below, along with their current status as BAP species or Birds of Conservation Concern 5 (Stanbury et al., 2021):

**Table 3: Common bird species seen on site**

English name	Scientific name	BAP	BoCC
woodpigeon	<i>Columba palumbus</i>	-	Green
snipe	<i>Gallinago gallinago</i>	-	Amber
green woodpecker	<i>Picus viridis</i>	-	Green
goldfinch	<i>Carduelis carduelis</i>	-	Green
meadow pipit	<i>Anthus pratensis</i>	-	Amber

The scrub and trees on site have high potential for use by nesting birds. An old nest was noted in one of the trees adjacent to the site (see Photograph 12). The arable field also has the potential to support nesting birds, depending on the crop grown. The site is considered unsuitable to support breeding by any Schedule 1 bird species.



**Photograph 12: Old bird nest adjacent to the site boundary**

#### **4.7 Section 41 species**

##### Harvest mouse

There are no records of harvest mouse from within 2km of the site. While the arable land is not considered suitable habitat for harvest mouse, the tall grasses in the field margins and dry boundary ditches have the potential to provide habitat and cover for this species.

##### Brown hare

There are 3 records of brown hare from within 2km of the surveyed site. The most recent record dates from 2019 and was made 1km south of the site. The arable land and grassland on and surrounding the site provide suitable habitat for brown hare.

##### Western European hedgehog

There are 3 records of hedgehog from within 2km of the site within the last 20 years. The most recent and closest record dates from 2017 and was made approximately 1km south of the site. The grassland, field margins and ditches on site provide foraging and commuting habitat for this species, however there is no dense ground cover which would provide suitable refugia for this species on site.

#### **4.8 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.

There are no hedgerows on site which would qualify as important under the Hedgerow Regulations 1997. The site does not meet the required criteria to qualify as an LWS (Poole and Fraser, 2013) and there are no species that are listed in the Vascular Plant Red Data List for Great Britain (Cheffings *et al.*, 2005). No Habitats of Principal Importance as listed under Section 41 of the NERC Act 2006 were noted on site. No invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded.

## 5 DISCUSSION AND RECOMMENDATIONS

### 5.1 Common reptile species

#### 5.1.1 Legal protection

All four of the common species of native reptiles, that is common lizard *Zootoca vivipara*, grass snake *Natrix helvetica*, slow worm *Anguis fragilis* and adder *Vipera berus*, are given partial protection under the Wildlife and Countryside Act 1981 (as amended) which prohibits the intentional killing, injury or taking of these species. There is no provision in the Act for licensing works which could give rise to an offence, but it does provide a defence where the otherwise unlawful act can be shown to be the incidental result of an otherwise lawful activity and could not reasonably have been avoided. Permitted development or a development which has received planning permission is clearly a lawful activity but the law does require that a reasonable effort is made to avoid killing or injury of these animals during the implementation of this permission.

#### 5.1.2 Recommendations

No reptiles were seen during the survey, and no reptiles have been recorded within 2km of the site in the past 20 years.

The law requires that a reasonable effort must be made to ensure that animals are not killed or injured during the development works, and it is therefore recommended that precautionary working practices are followed to avoid any breaches in the legislation, as outlined below. These measures should also be extended to any amphibians found on site.

#### **Precautionary working practices for common reptile species – Fellands Gate, Leake Commonside**

1. All site operatives will stay vigilant for the presence of reptiles during the works, especially along the drain banks.

2. In the unlikely event that any reptiles are found, they will be carefully gathered up and relocated to suitable habitat close by.

## **5.2 Bats**

### **5.2.1 Legal protection**

In England, Scotland and Wales, all bats are strictly protected under the Wildlife and Countryside Act 1981 (as amended); in England and Wales this legislation has been amended and strengthened by the Countryside and Rights of Way Act 2000. Bats are also protected by European legislation; the EC Habitats Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017. This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit. 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.

### **5.2.2 Recommendations**

The trees on site are considered to have negligible potential to support roosting bats, and so no further surveys of the trees are necessary. Some areas of the site have the potential to be used by foraging or commuting bats, and bats are known to be present in the local area. On this basis it is recommended that precautions are taken to ensure bats are not disturbed during the development work. These precautions, together with suggestions for enhancing ecological diversity of the site are detailed below. It is likely that these measures may form the basis of a planning condition. Local Planning Authorities have an obligation to enhance biodiversity and ensure ‘favourable conservation status’ – the implementation of these

measures will ensure legal compliance and ensure that obligations relating to biodiversity are fulfilled.

The site is currently unlit and the proposals have the potential to increase light spill at the site, which may discourage commuting and foraging bats from using it. As a result, it is recommended that a sensitive lighting plan is put in place at the site. It is advised that dark unlit corridors are maintained around and across the site, allowing bats to pass through and across the site unhindered by artificial light. Any hedgerows and trees planted as part of the development should remain unlit so they can be used as dark corridors by foraging/commuting bats. Any lighting on the edges of the site may require shields or adaptations to minimise light spill. Any external lighting (especially up-lights) used should emit minimal ultra-violet light, be narrow-spectrum (avoiding white and blue wavelengths) and should peak higher than 550nm. Lighting along the site boundaries should also be directed away from potential foraging features (e.g. tree lines, hedgerows) and aim for an output not exceeding 1lux which is comparable to twilight conditions.

As a positive conservation measure to enhance the site for roosting bats, it is recommended that at least one integral bat roost unit is installed within the new lodges. This should be placed on the northern or southern elevation of the buildings and installed following manufacturers' guidelines. Examples of suitable 'Habibat' bat roost units which could be used are given as Appendix 2 – these are unobtrusive roost units which can be faced with a range of products (including brick, block, stone, wood and render) to suit the design of the build and ensure seamless integration of the unit within the fabric of the building. More information and alternative brands can be found at [www.wildcare.co.uk](http://www.wildcare.co.uk). The bat roost unit should be placed in locations that avoid illumination from external lighting.

### **5.3 Badger**

#### **5.3.1 Legal protection**

Badgers and their setts are fully protected under the Protection of Badgers Act 1992, which amended and incorporated previous legislation. This Act makes it an offence, inter alia, to:

- Wilfully kill, injure or take, or attempt to kill, injure or capture a badger
- Interfere with a badger sett by doing any of the following things, intending to do any of these things or be reckless as to whether one's actions would have any of these consequences:
  - Damaging a badger sett or any part of it
  - Destroying a badger sett
  - Obstructing access to, or any entrance of, a badger sett

- Disturbing a badger when it is occupying a badger sett

A badger sett is defined in the Act as any structure or place which displays signs indicating use by a badger. Although a sett may be empty at a certain time it may be used as part of a regular cycle throughout the year, and may therefore be considered to be in use. A sett, which can be shown to have been disused for at least a full year, is considered to fall outwith the Act.

### **5.3.2 Recommendations**

No signs of badger activity were noted on site, thus no further survey work or mitigation is required in respect of this species. As a precaution, vigilance for the presence of badgers should be maintained throughout the works. If badger activity is suspected at any time, then it will be necessary to seek advice immediately, by calling Ian Nixon on 07833 674500, to ensure legal compliance. To safeguard ground mammals (including badgers and hedgehogs) during the development phase, it is essential that no trenches or pipes are left uncovered overnight.

## **5.4 Water vole**

### **5.4.1 Legal protection**

The water vole is fully protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). Legal protection makes it an offence to:

- Intentionally kill, injure or take (capture) a water vole
- Possess or control a live or dead water vole, or any part of a water vole
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place
- Sell, offer for sale or advertise for live or dead water voles

### **5.4.2 Recommendations**

The drain to the north-east of the site is considered to provide habitat of low potential suitability to support water vole, and no evidence of water vole was noted along the drain adjacent to the site. The drain is not expected to be impacted by the proposed works, thus no further survey work or mitigation is required in respect of this species. If plans change and the drain will be affected by the works, then it may be necessary to conduct dedicated water vole surveys along the stretch of drain to be impacted during the relevant survey season.

Vigilance for the presence of water voles should be maintained during all works. If the

presence of water voles is suspected during the construction phase then works should stop, and a suitably experienced ecologist contacted before continuing.

## **5.5 Birds**

### **5.5.1 Legal protection**

All common wild birds are protected under The Wildlife and Countryside Act 1981 (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 (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.

### **5.5.2 Recommendations for common bird species**

The scrub and trees on site provide potential for nesting bird species. If the removal of some of these is unavoidable however, as a precautionary measure and to ensure good practice, it is recommended that any vegetation clearance work should commence outside the active nesting season, which typically runs from March through to late August (inclusive). If work commences during the bird breeding season, a search for nests will need to be carried out by an experienced ecologist before work begins, and active nests should be protected until the young fledge.

Consideration should also be given to the provision of at least one integrated 25mm hole nest box within the new buildings. Examples of suitable Habitat nest boxes are given in Appendix 3, with details of other integrated nest boxes suitable for use by a range of common bird species available from [www.wildcare.co.uk](http://www.wildcare.co.uk).

## **5.6 Recommendations for Section 41 species**

Ensuring that no trenches or pipes are left uncovered overnight during the construction phase of the development will protect any hedgehog, brown hare, harvest mouse, and any other ground mammals on site during the works (as in Section 5.3 for badger).

To maintain commuting routes for hedgehogs, any fences that are installed should have a

small hole in the bottom, 13cmx13cm, or be raised off the ground. Alternatively, hedgehog-friendly gravel boards can be purchased, which are pre-cast or cut with a hole in that allows hedgehogs to pass through. Further information on hedgehog-friendly timber gravel boards can be found at [www.jacksons-fencing.co.uk/hedgehog-fencing](http://www.jacksons-fencing.co.uk/hedgehog-fencing), with alternative hedgehog-friendly concrete gravel boards available from other suppliers. Ideally, hedges should be used instead of fencing.

## 5.7 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 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:

- Any hedgerows to be planted should comprise native species such as blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, hazel, field maple *Acer campestre*, midland hawthorn *Crataegus laevigata*, wild cherry *Prunus avium* and bird cherry *Prunus padus*. Any new hedgerows to be planted should also comprise these native species.
- Once established, hedgerows should be appropriately managed with traditional techniques where possible to maximise their benefit for wildlife using hedgelaying rather than flailing or trimming. If trimming is necessary, ensure it is carried out every 2 to 3 years and in sections so that not all parts of the hedgerow are cut at the same time. Further information on the best practice creation and management of hedgerows can be found on the Management Advice page of [www.hedgeline.org.uk](http://www.hedgeline.org.uk).
- Any new trees and shrubs planted on the site as part of a landscaping scheme 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, hawthorn, blackthorn, dog-rose, wayfaring tree *Viburnum lantana*, sweet-briar *Rosa rubiginosa*, dogwood *Cornus sanguinea*, common buckthorn *Rhamnus cathartica* and guelder rose *Viburnum opulus*.

- Plant flower borders within any landscaped areas of the site to include night scented flowers in order to attract moths and other night flying insects (which will provide foraging opportunities for bats). Species should include evening primrose *Oenothera biennis*, sweet rocket *Hesperis matronalis*, honeysuckle species *Lonicera* sp., lavender species *Lavendula* sp., white jasmine *Jasminum officinale*, night-scented catchfly *Silene noctiflora*, night-scented stock *Matthiola longipetala* and soapwort *Saponaria officinalis*.
- In order to provide suitable habitats on site to encourage high invertebrate activity, including declining pollinators, any grassed areas on the site should be seeded with appropriate wildflower mixes. Seeding of any amenity areas should use a flowering lawn mixture, such as Emorsgate Seeds EL1 mix ([www.wildseed.co.uk](http://www.wildseed.co.uk)), which is resistant to regular mowing. Any areas of longer grass could be seeded with a general wildflower mix such as Emorsgate EM1 mix (basic all-purpose meadow mix). It is recommended that any wildflower areas are cut once a year, in late summer/early autumn and the arisings removed after 7 days to enable the wildflowers to flourish and provide food sources for invertebrates. Details of how to adequately prepare the ground prior to seeding as well as ongoing management can also be found on the Emorsgate website. Increasing the levels of invertebrate activity on site will also provide further foraging opportunities for insectivorous species.

## 6 SUMMARY

Land at Fellands Gate, Leake Commonside, was surveyed in connection with plans to establish a fishing lake and construct several lodges.

No ecological constraints were found to be associated with plans to develop this land.

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

- Precautionary measures for common reptile species

- Sensitive lighting plan in place for bats
- Provision of bat roosting units
- Vigilance and best practice regarding badgers and other ground mammals
- Vigilance for water vole and a further dedicated survey if the wet ditch is to be impacted by the works
- Appropriate timing with regards to nesting birds, or a pre-works nesting bird check by a suitably experienced ecologist
- Provision of bird boxes
- Use of native species in any landscaping scheme

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**ECOLOGY AND PROTECTED SPECIES SURVEY  
FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE**

**APPENDIX 1**

**Data search results**



# LERC Search Summary Report

**Grid Reference: TF 39404 52068**  
**Buffer: 2km**


**Date of publication: 10/02/2022**  
**Expires: 10/02/2023**

*Achieving more for nature*



**GLNP**  
GREATER LINCOLNSHIRE  
NATURE PARTNERSHIP

# Report Details

Produced for	Joseph Lambert, Inspired Ecology Ltd
Search area	

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This report summarises a search of statutory sites, non-statutory sites, other sites, habitats and species within the specified area; where no information is returned for a section, it is excluded from this summary report.

## 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 <https://glnp.org.uk/partnership/lerc/>



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For more information on accreditation, see the ALERC website at <http://www.alerc.org.uk/alerc-accreditation.html>

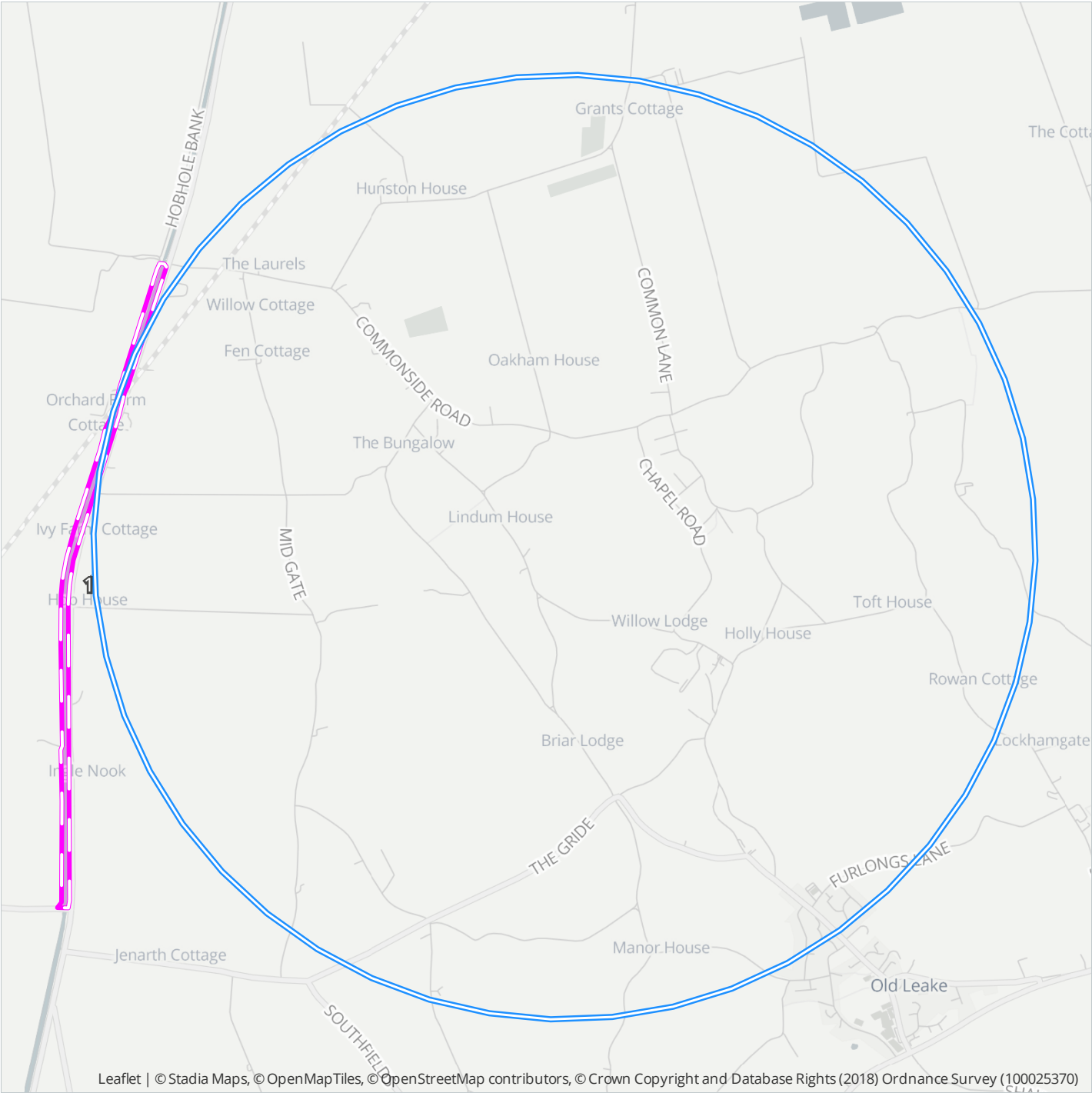
## Non-statutory sites

The GLNP works directly with local authorities to coordinate the Local Sites system in Greater Lincolnshire. Sites are selected by the Nature Partnership, based on recommendations made by its expert working groups known as the LWS Panel and LGS Panel. The Register of Local Sites is then submitted for inclusion within local authority planning policy.

These sites are recognition of wildlife or geological value and are a testament to the land management that is already being undertaken on them. 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.

Code	Designation	Status	Name
1	LWS	Selected	Hobhole Drain, Simmon House Bridge to Benington Bridge

Non-statutory sites within the search area



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



Local Wildlife Site



Search area

## Habitats

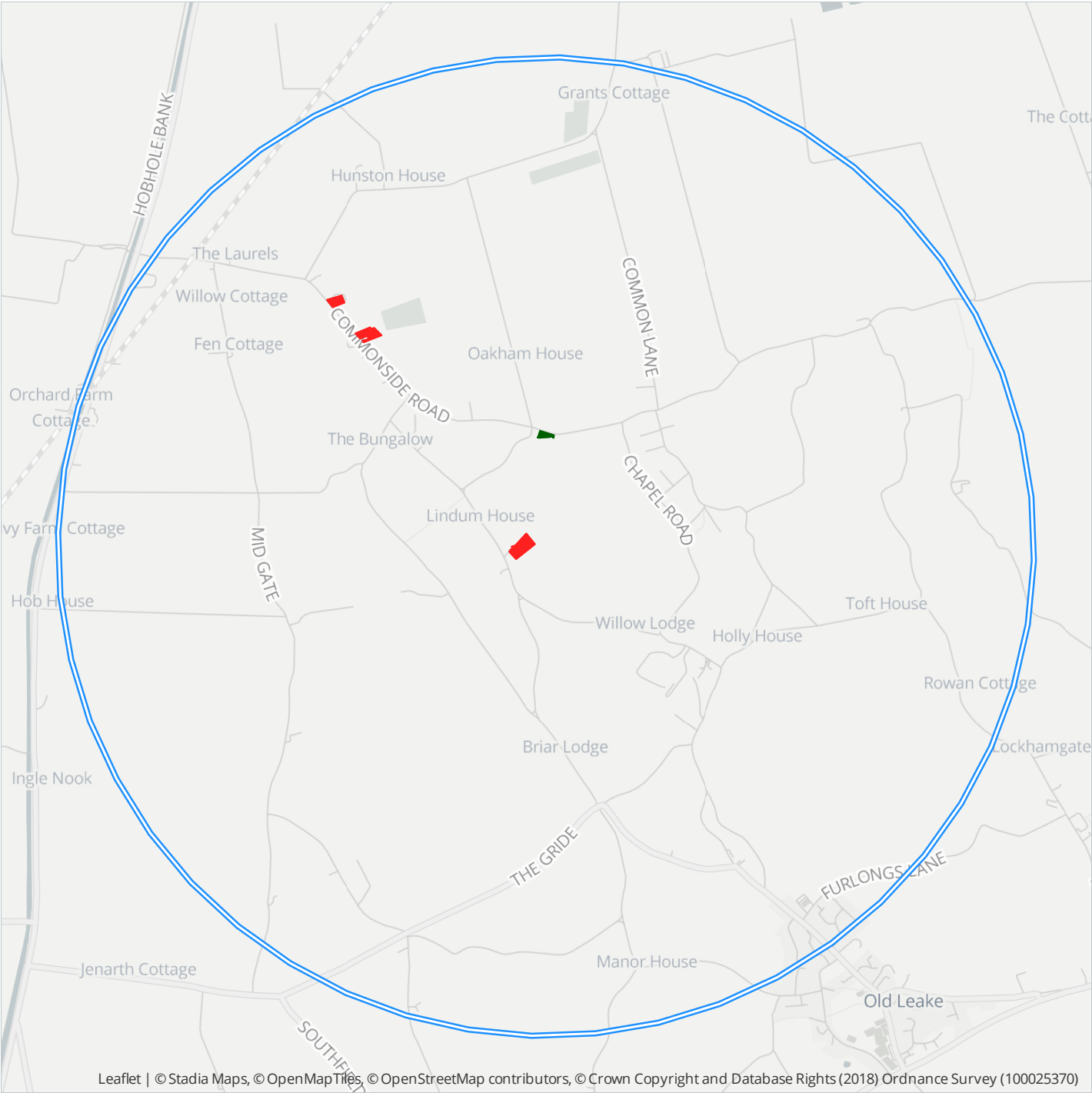
Priority habitats are those identified as being the most threatened and requiring conservation action in the UK. The most-recent list of UK priority species and habitats was published in August 2007 following a 2-year review of the process and priorities, representing the most comprehensive analysis of such information ever undertaken in the UK.

The data presented is the most up-to-date of the data collated by the GLNP and mostly comes from surveys of Local Sites; further historic data and non-Priority habitat data may also be available. Absence of information doesn't mean that the Priority habitat isn't present merely that no information is held.

A number of different datasets have been consulted to produce this report - a summary of attribution statements is available at <https://glnp.org.uk/images/uploads/services/lincolnshire-environmental-records-centre/habitat%20attribution.pdf>.

Type	Habitat	Survey Date	Area (ha)
Priority Habitat	Lowland mixed deciduous woodland	2012	0.22
Priority Habitat	Traditional orchards	2012	2.02

Habitats within the search area



Space restrictions on the map may result in some sites not being labelled.

- Lowland mixed deciduous woodland
- Traditional orchards

Search area

## Species

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

### Amphibian (3 taxa)

Common Frog, <i>Rana temporaria</i>	6	1977 - 1977	Protected
Common Toad, <i>Bufo bufo</i>	6	1976 - 1976	Protected, Priority
Smooth Newt, <i>Lissotriton vulgaris</i>	2	2006 - 2013	Protected, Local Priority

### Bird (76 taxa)

Arctic Skua, <i>Stercorarius parasiticus</i>	2	2000 - 2012	Priority
Avocet, <i>Recurvirostra avosetta</i>	1	2014 - 2014	Protected
Barn Owl, <i>Tyto alba</i>	16	2003 - 2012	Protected, Local Priority
Barnacle Goose, <i>Branta leucopsis</i>	4	2009 - 2009	Non-native
Bearded Tit, <i>Panurus biarmicus</i>	1	2010 - 2010	Protected
Black Tern, <i>Chlidonias niger</i>	1	2001 - 2001	Protected
Black-tailed Godwit, <i>Limosa limosa</i>	13	2006 - 2017	Protected
Brambling, <i>Fringilla montifringilla</i>	6	2005 - 2011	Protected
Brent Goose, <i>Branta bernicla</i>	4	2007 - 2010	Non-native
Bullfinch, <i>Pyrrhula pyrrhula</i>	15	2002 - 2012	Local Priority
Canada Goose, <i>Branta canadensis</i>	101	2005 - 2017	Non-native
Collared Dove, <i>Streptopelia decaocto</i>	59	2005 - 2013	Non-native
Common Scoter, <i>Melanitta nigra</i>	5	2009 - 2014	Protected, Priority
Corn Bunting, <i>Emberiza calandra</i>	23	2000 - 2017	Local Priority
Cuckoo, <i>Cuculus canorus</i>	6	2005 - 2017	Priority
Curlew, <i>Numenius arquata</i>	514	1995 - 2017	Priority, Local Priority
Dark-bellied Brent Goose, <i>Branta bernicla bernicla</i>	266	1995 - 2017	Priority, Non-native
Egyptian Goose, <i>Alopochen aegyptiaca</i>	2	2011 - 2013	Non-native
European White-fronted Goose, <i>Anser albifrons albifrons</i>	1	2011 - 2011	Priority, Non-native
Fieldfare, <i>Turdus pilaris</i>	31	2003 - 2017	Protected
Goldeneye, <i>Bucephala clangula</i>	11	1996 - 2016	Protected
Goshawk, <i>Accipiter gentilis</i>	1	2003 - 2003	Protected, Non-native
Grasshopper Warbler, <i>Locustella naevia</i>	1	2004 - 2004	Priority
Great Northern Diver, <i>Gavia immer</i>	1	2014 - 2014	Protected

## Bird (76 taxa)

Green Sandpiper, <i>Tringa ochropus</i>	44	1998 - 2017	Protected
Greenshank, <i>Tringa nebularia</i>	71	1995 - 2017	Protected
Grey Partridge, <i>Perdix perdix</i>	23	2004 - 2015	Priority, Local Priority, Non-native
Greylag Goose, <i>Anser anser</i>	83	2002 - 2017	Protected
Hawfinch, <i>Coccothraustes coccothraustes</i>	1	2005 - 2005	Priority
Hen Harrier, <i>Circus cyaneus</i>	13	2000 - 2017	Protected
Hobby, <i>Falco subbuteo</i>	2	2010 - 2011	Protected
House Sparrow, <i>Passer domesticus</i>	51	2005 - 2013	Priority, Local Priority
Kingfisher, <i>Alcedo atthis</i>	33	1998 - 2015	Protected
Lapwing, <i>Vanellus vanellus</i>	194	1995 - 2017	Priority, Local Priority
Lesser Redpoll, <i>Acanthis cabaret</i>	1	2013 - 2013	Priority
Light-bellied Brent Goose, <i>Branta bernicla hrota</i>	1	2012 - 2012	Non-native
Linnet, <i>Linaria cannabina</i>	105	2005 - 2017	Local Priority
Little Gull, <i>Hydrocoloeus minutus</i>	1	2012 - 2012	Protected
Little Owl, <i>Athene noctua</i>	22	2003 - 2013	Non-native
Little Tern, <i>Sternula albifrons</i>	1	2000 - 2000	Protected
Marsh Harrier, <i>Circus aeruginosus</i>	24	2006 - 2017	Protected
Merlin, <i>Falco columbarius</i>	14	1998 - 2017	Protected
Montagu's Harrier, <i>Circus pygargus</i>	1	2001 - 2001	Protected
Mute Swan, <i>Cygnus olor</i>	98	2002 - 2017	Non-native
Osprey, <i>Pandion haliaetus</i>	1	2010 - 2010	Protected
Peregrine, <i>Falco peregrinus</i>	21	1999 - 2017	Protected
Pheasant, <i>Phasianus colchicus</i>	121	2004 - 2017	Non-native
Pink-footed Goose, <i>Anser brachyrhynchus</i>	28	1996 - 2017	Non-native
Pintail, <i>Anas acuta</i>	9	1996 - 2016	Protected, Non-native
Pochard, <i>Aythya ferina</i>	2	2012 - 2013	Non-native
Purple Sandpiper, <i>Calidris maritima</i>	1	2001 - 2001	Protected
Quail, <i>Coturnix coturnix</i>	1	2009 - 2009	Protected
Red Kite, <i>Milvus milvus</i>	1	2011 - 2011	Protected
Red-legged Partridge, <i>Alectoris rufa</i>	10	2005 - 2012	Non-native
Red-throated Diver, <i>Gavia stellata</i>	2	1996 - 2002	Protected
Redshank, <i>Tringa totanus</i>	525	1995 - 2017	Local Priority
Redwing, <i>Turdus iliacus</i>	39	2004 - 2013	Protected
Reed Bunting, <i>Emberiza schoeniclus</i>	226	2005 - 2017	Priority, Local Priority
Ring Ouzel, <i>Turdus torquatus</i>	2	2007 - 2008	Priority
Rock Dove, <i>Columba livia</i>	1	2009 - 2009	Non-native
Ruff, <i>Calidris pugnax</i>	7	1996 - 2017	Protected
Scaup, <i>Aythya marila</i>	1	2001 - 2001	Protected, Priority

### Bird (76 taxa)

Skylark, <i>Alauda arvensis</i>	377	2005 - 2017	Local Priority
Snipe, <i>Gallinago gallinago</i>	87	1995 - 2017	Local Priority
Snow Bunting, <i>Plectrophenax nivalis</i>	1	2012 - 2012	Protected
Song Thrush, <i>Turdus philomelos</i>	51	2004 - 2017	Local Priority
Starling, <i>Sturnus vulgaris</i>	75	2005 - 2013	Local Priority
Swift, <i>Apus apus</i>	7	2006 - 2013	Local Priority
Tree Sparrow, <i>Passer montanus</i>	46	2003 - 2014	Priority, Local Priority
Turtle Dove, <i>Streptopelia turtur</i>	20	1999 - 2012	Priority, Local Priority
Velvet Scoter, <i>Melanitta fusca</i>	1	2002 - 2002	Protected
Whimbrel, <i>Numenius phaeopus</i>	53	1996 - 2017	Protected
White-fronted Goose, <i>Anser albifrons</i>	1	1997 - 1997	Non-native
Whooper Swan, <i>Cygnus cygnus</i>	10	2008 - 2017	Protected, Non-native
Yellow Wagtail, <i>Motacilla flava</i>	53	2001 - 2017	Local Priority
Yellowhammer, <i>Emberiza citrinella</i>	57	2000 - 2017	Priority, Local Priority

### Conifer (7 taxa)

Giant Fir, <i>Abies grandis</i>	1	2011 - 2011	Non-native
Lawson's Cypress, <i>Chamaecyparis lawsoniana</i>	1	2009 - 2009	Non-native
Leyland Cypress, <i>Cupressus macrocarpa</i> x <i>Xanthocyparis nootkatensis</i> = <i>X Cuprocyparis leylandi</i>	4	2011 - 2016	Non-native
Monkey-puzzle, <i>Araucaria araucana</i>	1	2010 - 2010	Non-native
Monterey Pine, <i>Pinus radiata</i>	1	2011 - 2011	Non-native
Nootka Cypress, <i>Xanthocyparis nootkatensis</i>	1	2011 - 2011	Non-native
Norway Spruce, <i>Picea abies</i>	2	2007 - 2011	Non-native

### Crustacean (1 taxa)

Crangonyx pseudogracilis/floridanus, <i>Crangonyx pseudogracilis/floridanus sens. lat.</i>	2	2011 - 2011	Non-native
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### Flowering Plant (140 taxa)

Alsike Clover, <i>Trifolium hybridum</i>	1	2011 - 2011	Non-native
American Willowherb, <i>Epilobium ciliatum</i>	4	2011 - 2016	Non-native
Apple, <i>Malus pumila</i>	6	2007 - 2012	Non-native
Arum italicum subsp. italicum, <i>Arum italicum subsp. italicum</i>	1	2016 - 2016	Non-native
Aunt-Eliza, <i>Crocasmia paniculata</i>	1	2011 - 2011	Non-native
Balm, <i>Melissa officinalis</i>	1	2011 - 2011	Non-native
Barren Brome, <i>Bromus sterilis</i>	15	1977 - 2016	Non-native
Beaked Hawk's-beard, <i>Crepis vesicaria</i>	4	1977 - 2011	Non-native
Black-bindweed, <i>Fallopia convolvulus</i>	4	2007 - 2011	Non-native

## Flowering Plant (140 taxa)

Black-grass, <i>Alopecurus myosuroides</i>	7	1998 - 2016	Non-native
Bluebell, <i>Hyacinthoides non-scripta</i>	1	1982 - 1982	Protected
Bluebell, <i>Hyacinthoides non-scripta</i> x <i>hispanica</i> = <i>H. x massartiana</i>	1	2009 - 2009	Non-native
Borage, <i>Borago officinalis</i>	1	2016 - 2016	Non-native
Box-leaved Honeysuckle, <i>Lonicera pileata</i>	2	2012 - 2012	Non-native
Bread Wheat, <i>Triticum aestivum</i>	5	2007 - 2011	Non-native
Bristly Oxtongue, <i>Picris echioides</i>	13	1998 - 2016	Non-native
Broad Bean, <i>Vicia faba</i>	1	2016 - 2016	Non-native
Broad-leaved Everlasting-pea, <i>Lathyrus latifolius</i>	1	2007 - 2007	Non-native
Butterfly Stonecrop, <i>Sedum spectabile</i>	2	2011 - 2016	Non-native
Butterfly-bush, <i>Buddleja davidii</i>	1	2011 - 2011	Non-native
Canadian Fleabane, <i>Conyza canadensis</i>	1	2012 - 2012	Non-native
Charlock, <i>Sinapis arvensis</i>	8	2007 - 2016	Non-native
Cherry Laurel, <i>Prunus laurocerasus</i>	2	2009 - 2011	Non-native
Common Field-speedwell, <i>Veronica persica</i>	12	1982 - 2016	Non-native
Common Fumitory, <i>Fumaria officinalis</i>	3	2009 - 2010	Non-native
Common Mallow, <i>Malva sylvestris</i>	12	2007 - 2016	Non-native
Common Poppy, <i>Papaver rhoeas</i>	4	2009 - 2016	Non-native
Common Vetch, <i>Vicia sativa</i> subsp. <i>segetalis</i>	8	2009 - 2016	Non-native
Cornus sanguinea subsp. <i>australis</i> , <i>Cornus sanguinea</i> subsp. <i>australis</i>	1	2009 - 2009	Non-native
Creeping Comfrey, <i>Symphytum grandiflorum</i>	1	2016 - 2016	Non-native
Cut-leaved Crane's-bill, <i>Geranium dissectum</i>	12	1977 - 2016	Non-native
Cut-leaved Dead-nettle, <i>Lamium hybridum</i>	3	2009 - 2011	Non-native
Druce's Crane's-bill, <i>Geranium endressii</i> x <i>versicolor</i> = <i>G. x oxonianum</i>	1	2011 - 2011	Non-native
Equal-leaved Knotgrass, <i>Polygonum arenastrum</i>	4	2007 - 2014	Non-native
Evergreen Oak, <i>Quercus ilex</i>	2	2009 - 2011	Non-native
Fennel, <i>Foeniculum vulgare</i>	1	2011 - 2011	Non-native
Feverfew, <i>Tanacetum parthenium</i>	1	2016 - 2016	Non-native
Field Forget-me-not, <i>Myosotis arvensis</i>	6	1977 - 2016	Non-native
Field Pansy, <i>Viola arvensis</i>	1	1998 - 1998	Non-native
Field Penny-cress, <i>Thlaspi arvense</i>	8	2007 - 2016	Non-native
Field Pepperwort, <i>Lepidium campestre</i>	1	2009 - 2009	Non-native
Fig-leaved Goosefoot, <i>Chenopodium ficifolium</i>	3	2009 - 2009	Non-native
Fox and Cubs, <i>Pilosella aurantiaca</i> subsp. <i>carpathicola</i>	1	2011 - 2011	Non-native
Fox-and-cubs, <i>Pilosella aurantiaca</i>	3	2009 - 2012	Non-native
Fuchsia magellanica, <i>Fuchsia magellanica</i>	1	2011 - 2011	Non-native

## Flowering Plant (140 taxa)

Garden Angelica, <i>Angelica archangelica</i>	1	1982 - 1982	Non-native
Garden Asparagus, <i>Asparagus officinalis</i>	2	2012 - 2012	Non-native
Garden Privet, <i>Ligustrum ovalifolium</i>	4	2009 - 2011	Non-native
Golden Rain, <i>Laburnum anagyroides</i>	1	2012 - 2012	Non-native
Grape-hyacinth, <i>Muscari neglectum</i>	2	1982 - 1987	Priority
Greater Burdock, <i>Arctium lappa</i>	1	2010 - 2010	Non-native
Greater Periwinkle, <i>Vinca major</i>	3	2009 - 2016	Non-native
Grey Alder, <i>Alnus incana</i>	1	2009 - 2009	Non-native
Ground-elder, <i>Aegopodium podagraria</i>	2	2010 - 2011	Non-native
Hedge Mustard, <i>Sisymbrium officinale</i>	14	2007 - 2016	Non-native
Hedgerow Crane's-bill, <i>Geranium pyrenaicum</i>	4	2009 - 2012	Non-native
Hemlock, <i>Conium maculatum</i>	3	1998 - 2012	Non-native
Himalayan Honeysuckle, <i>Leycesteria formosa</i>	1	2011 - 2011	Non-native
Hoary Cress, <i>Lepidium draba</i>	3	1998 - 2016	Non-native
Hollyberry Cotoneaster, <i>Cotoneaster bullatus</i>	1	2011 - 2011	Non-native
Honesty, <i>Lunaria annua</i>	5	2009 - 2016	Non-native
Horse-chestnut, <i>Aesculus hippocastanum</i>	6	2009 - 2016	Non-native
Horse-radish, <i>Armoracia rusticana</i>	11	2007 - 2012	Non-native
Hybrid Balsam-poplar, <i>Populus trichocarpa x balsamifera</i> = <i>P. 'Balsam Spire'</i>	1	2011 - 2011	Non-native
Hybrid Black-poplar, <i>Populus nigra x deltoides</i> = <i>P. x canadensis</i>	2	2007 - 2011	Non-native
Italian Alder, <i>Alnus cordata</i>	1	2011 - 2011	Non-native
Italian Rye-grass, <i>Lolium multiflorum</i>	6	2007 - 2012	Non-native
Ivy-leaved Speedwell, <i>Veronica hederifolia</i>	1	1982 - 1982	Non-native
Ivy-Leaved Speedwell, <i>Veronica hederifolia</i> subsp. <i>hederifolia</i>	4	2010 - 2016	Non-native
Japanese Honeysuckle, <i>Lonicera japonica</i>	1	2011 - 2011	Non-native
Japanese Knotweed, <i>Fallopia japonica</i>	3	1998 - 2011	Non-native
Japanese Rose, <i>Rosa rugosa</i>	1	2009 - 2009	Non-native
Kerria japonica, <i>Kerria japonica</i>	1	2011 - 2011	Non-native
Large Bindweed, <i>Calystegia silvatica</i>	3	2007 - 2012	Non-native
Large-flowered Evening-primrose, <i>Oenothera glazioviana</i>	1	2016 - 2016	Non-native
Lepidium draba subsp. <i>draba</i> , <i>Lepidium draba</i> subsp. <i>draba</i>	2	2009 - 2011	Non-native
Lesser Swine-cress, <i>Lepidium didymum</i>	9	1994 - 2016	Non-native
Lilac, <i>Syringa vulgaris</i>	1	2011 - 2011	Non-native
Lucerne, <i>Medicago sativa</i> subsp. <i>sativa</i>	2	2007 - 2009	Non-native
Lungwort, <i>Pulmonaria officinalis</i>	1	2011 - 2011	Non-native
Montbretia, <i>Crocasmia pottsii x aurea</i> = <i>C. x crocosmiiflora</i>	1	2011 - 2011	Non-native
Mugwort, <i>Artemisia vulgaris</i>	9	1998 - 2014	Non-native

## Flowering Plant (140 taxa)

Norway Maple, <i>Acer platanoides</i>	1	2011 - 2011	Non-native
Oil-seed Rape, <i>Brassica napus subsp. oleifera</i>	7	2007 - 2016	Non-native
Olive Willow, <i>Salix elaeagnos</i>	1	2009 - 2009	Non-native
Opium Poppy, <i>Papaver somniferum</i>	1	2016 - 2016	Non-native
Oregon-grape, <i>Mahonia aquifolium</i>	1	2011 - 2011	Non-native
Osier, <i>Salix viminalis</i>	1	2011 - 2011	Non-native
Oxford Ragwort, <i>Senecio squalidus</i>	2	1977 - 1998	Non-native
Petty Spurge, <i>Euphorbia peplus</i>	2	2012 - 2016	Non-native
Pineappleweed, <i>Matricaria discoidea</i>	8	2007 - 2012	Non-native
Pink-sorrel, <i>Oxalis articulata</i>	1	2009 - 2009	Non-native
Potato, <i>Solanum tuberosum</i>	2	2009 - 2010	Non-native
Prickly Lettuce, <i>Lactuca serriola</i>	2	2011 - 2012	Non-native
Primrose-peerless, <i>Narcissus tazetta x poeticus</i> = <i>N. x medioluteus</i>	1	2016 - 2016	Non-native
Purple Toadflax, <i>Linaria purpurea</i>	1	2011 - 2011	Non-native
Rat's-tail Fescue, <i>Vulpia myuros</i>	2	1977 - 1998	Non-native
Red Dead-nettle, <i>Lamium purpureum</i>	12	1977 - 2016	Non-native
Red Oak, <i>Quercus rubra</i>	1	2011 - 2011	Non-native
Red-osier Dogwood, <i>Cornus sericea</i>	1	2011 - 2011	Non-native
Reflexed Stonecrop, <i>Sedum rupestre</i>	2	2010 - 2016	Non-native
Rhubarb, <i>Rheum palmatum x rhaponticum</i> = <i>R. x hybridum</i>	1	2009 - 2009	Non-native
Rose-of-Sharon, <i>Hypericum calycinum</i>	1	2011 - 2011	Non-native
Russell Lupin, <i>Lupinus arboreus x polyphyllus</i> = <i>L. x regalis</i>	1	2011 - 2011	Non-native
Russian Comfrey, <i>Symphytum officinale x asperum</i> = <i>S. x uplandicum</i>	8	2007 - 2016	Non-native
Russian-vine, <i>Fallopia baldschuanica</i>	1	2009 - 2009	Non-native
Scented Mayweed, <i>Matricaria chamomilla</i>	8	1977 - 2012	Non-native
Scentless Mayweed, <i>Tripleurospermum inodorum</i>	5	2007 - 2016	Non-native
Sea Barley, <i>Hordeum marinum</i>	1	1984 - 1984	Priority
Shepherd's-purse, <i>Capsella bursa-pastoris</i>	15	1977 - 2016	Non-native
Slender Speedwell, <i>Veronica filiformis</i>	3	2009 - 2011	Non-native
Small Nettle, <i>Urtica urens</i>	6	2007 - 2016	Non-native
Small Toadflax, <i>Chaenorhinum minus</i>	3	1977 - 2011	Non-native
Snow-in-summer, <i>Cerastium tomentosum</i>	1	1998 - 1998	Non-native
Snowberry, <i>Symphoricarpos albus</i>	4	2011 - 2012	Non-native
Snowdrop, <i>Galanthus nivalis</i>	15	1982 - 2016	Non-native
Southern Blue-gum, <i>Eucalyptus globulus</i>	1	2011 - 2011	Non-native
Spanish Bluebell, <i>Hyacinthoides hispanica</i>	4	2011 - 2012	Non-native
Springbeauty, <i>Claytonia perfoliata</i>	3	1982 - 1987	Non-native

### Flowering Plant (140 taxa)

Stag's-horn Sumach, <i>Rhus typhina</i>	1	2011 - 2011	Non-native
Sticky Groundsel, <i>Senecio viscosus</i>	3	1998 - 2011	Non-native
Sun Spurge, <i>Euphorbia helioscopia</i>	4	2007 - 2016	Non-native
Swedish Whitebeam, <i>Sorbus intermedia</i>	1	2011 - 2011	Non-native
Sweet Chestnut, <i>Castanea sativa</i>	2	2009 - 2011	Non-native
Sweet Cicely, <i>Myrrhis odorata</i>	1	2011 - 2011	Non-native
Swine-cress, <i>Lepidium coronopus</i>	12	2007 - 2016	Non-native
Sycamore, <i>Acer pseudoplatanus</i>	20	1977 - 2016	Non-native
Various-leaved Fescue, <i>Festuca heterophylla</i>	1	2011 - 2011	Non-native
Wall Barley, <i>Hordeum murinum</i>	6	1998 - 2012	Non-native
Wall Cotoneaster, <i>Cotoneaster horizontalis</i>	1	2011 - 2011	Non-native
Weeping Crack-willow, <i>Salix euxina x alba x babylonica</i> = <i>S. x pendulina</i>	1	2012 - 2012	Non-native
Weld, <i>Reseda luteola</i>	3	1998 - 2011	Non-native
White Campion, <i>Silene latifolia</i>	1	1998 - 1998	Non-native
White Dead-nettle, <i>Lamium album</i>	17	1977 - 2016	Non-native
White Poplar, <i>Populus alba</i>	2	2011 - 2012	Non-native
White Willow, <i>Salix alba</i>	2	2009 - 2011	Non-native
Wild Plum, <i>Prunus domestica</i>	5	2009 - 2016	Non-native
Wild-oat, <i>Avena fatua</i>	6	1998 - 2016	Non-native
Wilson's Honeysuckle, <i>Lonicera nitida</i>	2	2011 - 2011	Non-native
Yellow Corydalis, <i>Pseudofumaria lutea</i>	1	2010 - 2010	Non-native

### Insect - Butterfly (2 taxa)

Small Heath, <i>Coenonympha pamphilus</i>	2	2019 - 2019	Priority
Wall, <i>Lasiommata megera</i>	1	1992 - 1992	Priority

### Mollusc (1 taxa)

Jenkins' Spire Snail, <i>Potamopyrgus antipodarum</i>	4	2011 - 2011	Non-native
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### Reptile (1 taxa)

Grass Snake, <i>Natrix helvetica</i>	6	1976 - 1976	Protected, Priority
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### Terrestrial Mammal (9 taxa)

Brown Hare, <i>Lepus europaeus</i>	10	1976 - 2019	Priority
Brown Rat, <i>Rattus norvegicus</i>	3	1977 - 1977	Non-native
Chinese Muntjac, <i>Muntiacus reevesi</i>	1	2021 - 2021	Non-native
Eurasian Badger, <i>Meles meles</i>	4	2017 - 2017	Protected
Eurasian Otter, <i>Lutra lutra</i>	1	1974 - 1974	Protected, Priority
European Rabbit, <i>Oryctolagus cuniculus</i>	7	1977 - 1977	Non-native
European Water Vole, <i>Arvicola amphibius</i>	8	1976 - 2017	Protected, Priority, Local Priority
House Mouse, <i>Mus musculus</i>	1	1977 - 1977	Non-native
West European Hedgehog, <i>Erinaceus europaeus</i>	10	1976 - 2017	Priority

### Terrestrial Mammal (bat) (6 taxa)

Bat, <i>Chiroptera</i>	30	1995 - 2017	Protected, Priority, Local Priority
Brown Long-eared Bat, <i>Plecotus auritus</i>	7	1977 - 2013	Protected, Priority, Local Priority
Common Pipistrelle, <i>Pipistrellus pipistrellus sensu stricto</i>	6	2004 - 2016	Protected, Local Priority
Daubenton's Bat, <i>Myotis daubentonii</i>	3	2006 - 2014	Protected, Local Priority
Pipistrelle Bat species, <i>Pipistrellus</i>	7	1994 - 2019	Protected, Priority, Local Priority
Soprano Pipistrelle, <i>Pipistrellus pygmaeus</i>	2	2012 - 2013	Protected, Priority, Local Priority

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**ECOLOGY AND PROTECTED SPECIES SURVEY  
FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE**

**APPENDIX 2**

**Bat roost units (Habibat)**

## **ECOLOGY AND PROTECTED SPECIES SURVEY FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE**



**Habibat 001 Bat Box Standard Facing**



**Habibat 003 Bat Box Range**



**Habibat unfaced bat box**

More information available at [www.habibat.co.uk/](http://www.habibat.co.uk/)

**ECOLOGY AND PROTECTED SPECIES SURVEY  
FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE**

**APPENDIX 3**

**Bird box examples (Habibat)**

## ECOLOGY AND PROTECTED SPECIES SURVEY FELLANDS GATE, LEAKE COMMONSIDE, LINCOLNSHIRE



**Habibat Terraced Sparrow Box (integrated)**



**Habibat Small Bird Nest Box (integrated,  
25mm hole)**



**Habibat Swift Box**



**Habibat 003 Swift Box**

More information available at [www.habibat.co.uk/](http://www.habibat.co.uk/)