

# **Bat and Barn Owl Survey**

## **Modern barn at Kilnmire Field, Lady Hall, Millom**

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**Report No. 0524/4**

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## Executive Summary

The owner of two barns in Kilnmire Field, Lady Hall wishes to convert the barns into residential use. This report refers to Barn 1, the modern barn with block wall and corrugate roof.

This report was commissioned to accompany a planning application, and involved an inspection of the property and desktop search to assess whether bats are using, or have used it for roosting purposes. An assessment is also made of the potential the building has to host bats and/or barn owl, and whether this proposed development will have any negative impacts on individual bats or barn owl, or the local bat population.

The building was inspected inside and outside for evidence of bat or barn owl activity. There were no restrictions on access.

The barn has concrete block walls with wood/ corrugate panels on upper walls, a pitched corrugate roof and large metal doors on the north elevation. There are roof lights, but no window openings. The barn has a metal framework for the roof.

The interior of the barn is easily accessible for bats though gaps above the large doors, but there are no suitable roosting sites inside or around the walls and roof of the barn. The small gaps around the metal roof supports are unlikely to be used, and there are no dark crevices within the barn. The barn is not accessible for barn owl, and no evidence of other nesting bird species was seen.

Habitat around the barn is agricultural, with other residential properties, areas of woodland and wetland, and small watercourses nearby.

Overall surrounding habitat is of moderate quality for feeding bats, but the barn has negligible scope to host bats as there are no potential roosts present that are likely to be used.

There are no records of bats or barn owls from the property.

No specific mitigation or avoidance measures are required for bats or nesting birds, as there was no evidence of either of these animal groups using the barn.

Due to the proximity of the barn to protected sites (Duddon Estuary SSSI), and the nature of the proposal, Natural England will need to be consulted by the LPA to assess the potential impact of the project on nearby protected sites.

The proposed conversion of the barn to a residential property will have negligible impact on wildlife. Following planning advice, some enhancement measures have been included to encourage a net gain to wildlife following the development. These include installation of at least three swift boxes at the eaves of the north elevation or high on the north-west gable end of the new building.

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# **1 Introduction**

## **1.1 *Site description***

Kilnmire Field is located in Lady Hall, a small village near to Millom. There are two barns in the field – a modern one and a traditional stone one. This survey is focussed on the modern barn (barn 1) located at SD 1918 8595, at approximately 15m AOD.

The barn is in a good state of repair, and is surrounded by sheep grazed pasture. It has block walls with timber panelling above, and a corrugate pitched roof.

There are several residential properties nearby, as well as agricultural land (primarily pasture and silage fields), woodlands, salt marsh and bog habitat.

Figure 1 shows the location of Kilnmire Field. Satellite imagery of the surrounding habitat and the area immediately surrounding the property is presented in figures 2 and 3. Photographs of the building are included in the appendices to this report.

## **1.2 *Proposed works***

The owner wishes to obtain planning permission to convert the barns into residential use. This will involve demolishing the modern barn and rebuilding on its footprint.

There is no set timescale for these works.

## **1.3 *Aims of survey***

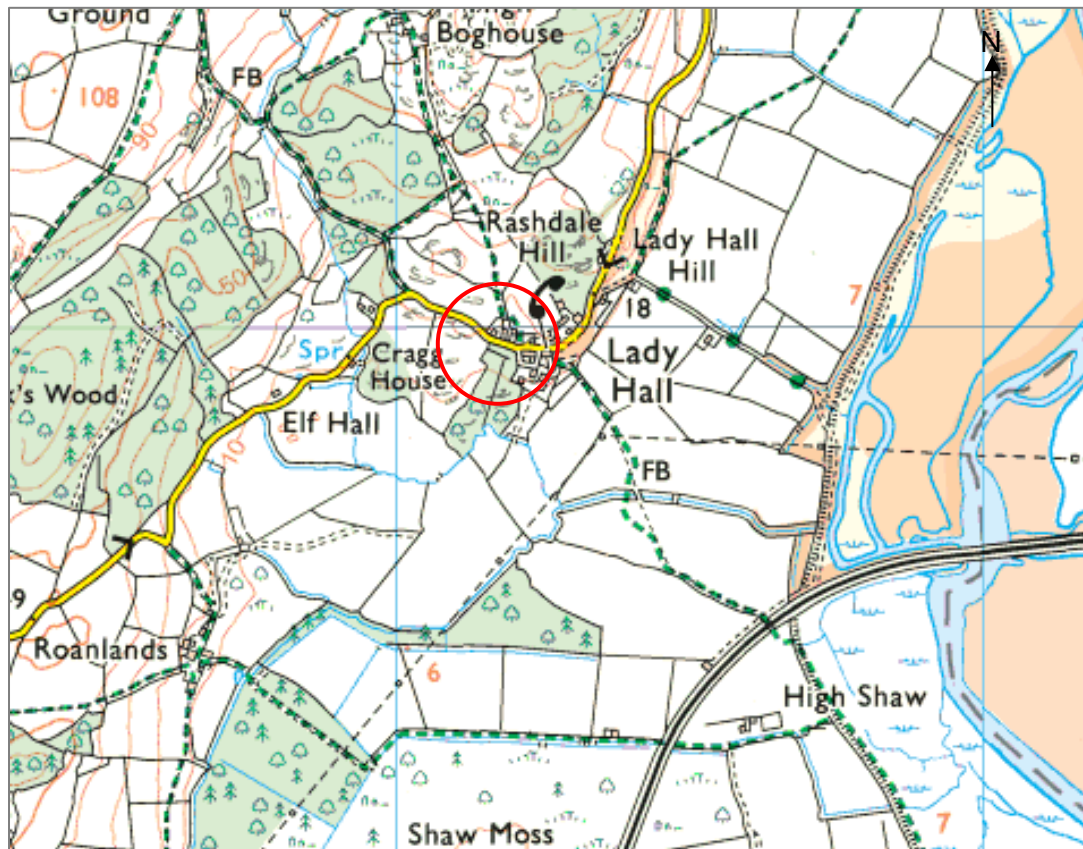
This survey was commissioned to accompany a planning application to Cumberland Council. The aim of the survey is to assess whether any bats or barn owl are likely to be harmed or otherwise negatively impacted by the proposed works.

Bats and their roosting places are protected under British and European legislation. This survey aims to establish whether bats use, or have used, the modern barn at Kilnmire Field; and if so how it has been used. From this data an assessment will be made as to whether any particular roost and/or the surrounding bat population would be affected by the proposed development. If they are likely to be affected then appropriate mitigation proposals will be included in this report.

Barn owl are protected under the Wildlife and Countryside Act 1981 (as amended), under schedule 1, where they, their nests, eggs and chicks are protected against harm and also against disturbance whilst at the nest site. All British bird species and their actively used nests (those being built, or with eggs and/or chicks in) are protected during the breeding season. This survey aims to assess the likelihood of nesting birds being present, and also whether any sensitive species of bird (such as barn owl) are likely to be affected by the proposed works.

The inspection survey and ensuing report follow guidance and structure provided by Bat Conservation Trust (Bat Surveys Good Practice Guidelines, 4<sup>th</sup> 2023).

**Figure 1. Location Map**



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**Figure 2. Aerial photograph giving an indication of surrounding habitat**



(Imagery date 2023)

## 2 Methods

### 2.1 Desktop data search

A search of current literature (including the Bat Conservation Trust publication 'The Distribution Atlas of Bats in Britain and Ireland', Cumbria Biodiversity Data Centre's Mammal Atlas, 'Mammals of the British Isles', and 'The Breeding Birds of Cumbria') was done, looking for bat and barn owl records in the 10km grid square in which the property is situated.

An internet search was also carried out, noting any land with statutory designations within 5km of the property. Reasons for any relevant land designations were researched to check whether bats or barn owls were important features. A search was also carried out for local EPS (European Protected Species) licences for disturbance to bats (this will give further indication of species present in the area). Searches for statutory designations, and relevant citations were done on a DEFRA website [www.magic.defra.gov.uk](http://www.magic.defra.gov.uk).

A detailed search was commissioned from Cumbria Biodiversity Data Centre, providing records of barn owl and bats within 2km of the property.

### 2.2 Surveyor information

The inspection was undertaken by Tamsin Douglas MCIEEM, experienced ecologist (holds Natural England Bat Class Licence – registration number 2015-10308-CLS-CLS and NE Class survey licence for barn owl CL29/00451).

### 2.3 Field survey

#### 2.3.1 Daytime inspection

A daylight inspection of the building to identify possible roosting and nesting locations and access routes to these locations was carried out on 16<sup>th</sup> May 2024 between 14.00 and 15.30 by Tamsin Douglas.

The external and internal inspection was carried out using ladders, 10 x 42 binoculars, endoscope (Vscope VOxx-10WW) and a 1 million candlepower torch. The weather was dry, warm and sunny with light winds.

#### **Bats**

The building inspection involves a detailed internal and external daylight search for evidence of current or past use of the building by bats. Outside, particular attention is paid to the ground and ledges under any potential access points, weather boarding, hanging tiles, eaves, cracks and crevices in walls, and under tiles/slates. Internal inspections focus on areas around and below any potential roosting spots, ledges and lintels, behind crumbling render, and on and around roof timbers.

Evidence from a search which would indicate presence of bats includes-

- Roosting bats
- Corpses
- Droppings and urine staining on and around potential roosting areas (further evidence derived from amount and freshness of droppings)
- Droppings, staining and/or scratch marks at potential roost entrances

- Cleaner areas of woodwork, areas free of cobwebs suggesting bat activity such as crawling or flying
- Feeding detritus- such as moth wings
- Chattering or squeaking noise from roosting bats.

A general assessment is also made of the suitability of the surrounding habitat for bats, and connectivity to other areas of good quality foraging and commuting habitat.

Direct evidence of bats can be hard to detect and, as such, during the preliminary roost assessment the building is also appraised for its potential to host roosting bats. This potential is based on several factors:

- Presence of suitable internal or external features for roosting bats, and good access routes to these features
- Number of bats that these features could support
- Suitable conditions for roosting either in active season or for hibernation (humidity, temperature, exposure)
- Surrounding foraging and commuting habitat, connectivity to good habitat features
- Proximity to known roosts (especially for hibernation of species such as pipistrelles)

The need to undertake a roost emergence/ re-entry survey or hibernation survey (to provide further evidence as to whether bats use the building affected by these proposals) was determined by the results of this inspection.

### **Barn owl**

Inspection of the buildings for use by barn owl involves searches for debris from nesting and feeding (including owl pellets), and other sign of owl use (such as feathers). Potential access routes into buildings were identified, and floors, roof supports, tops of walls, crevices, ledges and suitable perching places were checked using torch and ladders.

A general assessment was made of the suitability of the surrounding habitat for barn owls.

### ***2.3.2 Roost surveys - bats***

During the dusk roost survey, all suitable elevations of the property are observed for a standard period after sunset (dawn surveys are not required as standard under the new guidance). Surveys are carried out between May and September, when bats are most active. Surveyors watch all potential roosting locations to see if any bats emerge. Bat detectors (personal and static), digital recording devices and night-vision aids (thermal imaging scopes and infra-red cameras) are used to aid detection and identification of any emerging bats.

A hibernation survey typically involves a detailed inspection of possible roosting sites using torch, mirror and endoscope, and can involve deploying static bat detectors. The survey is carried out in mid-winter, typically in January and February. The exact parameters of the survey depend on the nature of the site.

No dusk surveys were carried out for this site.

## 3 Results

### 3.1 Desktop search

#### 3.1.1 Designated sites

There is a large amount of designated land within 5km of Kilnmire Field, Lady Hall, most of which relates to adjacent coastal and estuarine habitats. Some of these sites are within 500m from the property.

The property is within an 'impact risk zone' for the nearby SSSI, and as such Natural England will need to be consulted about these plans to ensure that there are no impacts on the nearby protected sites. "LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING: All planning applications (except householder) outside or extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or landscape features such as trees, hedges, streams, rural buildings/structures."

A total of three SSSIs, one NNR (National Nature Reserve), one SPA (Special Protection Area) and two SAC (Special Areas of Conservation) are found within 5km of the property. Although these may support bat populations, none of them detail bats in the supporting citations. Breeding barn owl are listed as a feature in the citation for Duddon Estuary SSSI

The property is located 1km east of the boundaries of the Lake District National Park.

#### 3.1.2 Protected species

##### 3.1.2.1 Bats

Eight species of bat are currently known to breed in Cumbria, with a further two species that have been recorded within the county. All species of bat in the UK are fully protected under UK and European law.

**Table 1. Status of bats in Cumbria**

| Species  | Status in Cumbria   |
|--|---|
| Whiskered bat<br><i>Myotis mystacinus</i>              | Widespread, but uncommon. Maternity and hibernation roosts recorded.  |
| Brandt's bat<br><i>M.brandtii</i>                      | Widespread, but uncommon. Maternity and hibernation roosts recorded.  |
| Natterer's bat<br><i>M.nattereri</i>                   | Widespread. Maternity and hibernation roosts recorded.  |
| Daubenton's bat<br><i>M.daubentonii</i>                | Widespread. Strongly associated with still or slow moving water. Maternity and hibernation roosts recorded.   |
| Noctule<br><i>Nyctalus noctula</i>                     | Widespread, but uncommon. Rarely associated with buildings. Breeding roosts recorded.   |
| Leisler's bat<br><i>N.leisleri</i>                     | Rare. Only a confirmed bat detector record in Cumbria.  |
| Common pipistrelle<br><i>Pipistrellus pipistrellus</i> | Widespread. Roosts often associated with modern buildings, forages in a variety of habitats. Maternity and hibernation roosts recorded.   |
| Soprano pipistrelle<br><i>P.pygmaeus</i>               | Widespread. Only recently separated as a species from common pipistrelle, often associated with waterbodies, though forages in wide range of habitats. Maternity and hibernation roosts recorded. |
| Nathusius' pipistrelle<br><i>P.nathusii</i>            | Rare. Recently added to Cumbria's list of bats. No confirmed breeding roosts recorded yet.  |
| Brown long-eared bat<br><i>Plecotus auritus</i>        | Widespread, but uncommon. Often associated with older buildings with good roof space. Maternity and hibernation roosts recorded.  |

The literature search provided records of summer roosts for 4 species of bats within the hectad SD18 (10km square) in which Kilnmore Field, Lady Hall is located. These are whiskered/ brandt's bat (hard to distinguish), natterer's bat, pipistrelle and brown long eared bat. The CBDC Mammal Atlas had recent (post-2000) confirmed records in SD18 for the species above, as well as; daubenton's bat and noctule.

The internet search looking at nearby granted EPS (European Protected Species) licenses for bats produced one record within 5km – which was for day roosts of brandt's bat, common pipistrelle, daubenton's bat and soprano pipistrelle approximately 1.5km from the property.

The detailed site search carried out by Cumbria Biodiversity Data Centre produced 43 records of 6 species of bats within 2km of Kilnmore Field. These were common pipistrelle, soprano pipistrelle, brown long-eared bat, noctule, daubenton's bat and brandt's bat. Twenty four of the records were of roosts, and most records were quite recent (post 2018). There are no records from the property, the closest being a roost 300m away (no species given, records are from 1993).

Bats are generally an under-recorded group, and as such biological records such as those above can only be used as a guide to illustrate potential distributions in the area, and are not definitive.

### **3.1.2.2 Barn Owl**

The western coastal plain of Cumbria is a stronghold for barn owl in the county, with the coastal grassland and marshes providing good foraging habitat. The Cumbria Biodiversity Data Centre bird atlas has records of wintering barn owl in the tetrad (2km square) in which Kilnmore Field is located. There are no breeding records from this tetrad, but there are records of breeding barn owl in the adjacent tetrad (to the north-west).

The CBDC data search produced 14 records of barn owl within 2km of the property, including likely and proven breeding records. The closest of these was approximately 1km from the barns.

## **3.2 Field survey - bats**

### **3.2.1 Habitat assessment**

The habitat immediately around the barns on Kilnmore Field comprises sheep grazed pasture (many with hedgerow boundaries), residential properties and woodland. Beyond the agricultural land are large areas of salt marsh and coastal habitat, coastal bogs and mosses, and various watercourses.

Bats can fly several kilometres to their feeding grounds, often following linear features such as hedgerows. Sheltered areas, particularly around water, tend to have greater amounts of invertebrate prey, and as such are sought out by foraging bats.

The habitat around the barns is of good quality for feeding and dispersing bats – it is dark and sheltered, and has good links to quality foraging areas.

### **3.2.2 Roosting assessment**

**Table 2:** Factors affecting the probability of a building being used by bats in summer

|                                |   |
|--------------------------------|---|
| Factors increasing probability | Disused or little used; largely undisturbed<br>Large roof void with unobstructed flying spaces<br>Large dimension roof timbers with cracks, joints and holes<br>Uneven roof covering with gaps, though not too draughty<br>Entrances that bats can fly in through<br>Hanging tiles or wood cladding, especially on south-facing walls |
|--------------------------------|---|

|                                |   |
|--------------------------------|---|
|                                | Rural setting<br>Close to woodland and/or water<br>Pre-20th century or early 20th century construction<br>Roof warmed by the sun  |
| Factors decreasing probability | Urban setting or highly urbanised area with few feeding places<br>Small or cluttered roof void (esp. for <i>Plecotus</i> )<br>Heavily disturbed<br>Modern construction with few gaps around soffits or eaves (but be aware these may be used by pipistrelles in particular)<br>Prefabricated with steel and sheet materials<br>Active industrial premises<br>Roof shaded from the sun |

(Taken from A. Mitchell-Jones, 2004)

### Building construction

This modern detached barn has block walls (rendered on the outside) with wood or corrugate metal cladding on the upper walls. The roof is pitched and covered by concrete corrugate material. Walls and roof are in good condition.

The interior of the barn is light, airy and open, with a mezzanine floor on the eastern end of the barn. The roof is on a metal framework and has large rooflight panels.

There are large metal double doors on the northern elevation, and no other windows or door openings.

### Suitability for bats

The interior of the barn is easily accessible through gaps above the metal door. There are no likely roosting features inside the barn, however, as it is so light and open. There are no timber features or crevices in the walls likely to appeal to roosting bats.

### Evidence of bats

No evidence of bats was found at the property.

### **3.2.3 Summary of suitability of site for bats**

Based on the evidence above, and using published guidance (summarised below) the modern barn (barn 1) at Kilnmire Field, Lady Hall is assessed as having negligible potential for roosting bats as there are no features present inside or outside the barn that are likely to be used. Surrounding habitat has moderate suitability for commuting and foraging bats.

The property was assessed as having negligible potential to host hibernating bats, based on type and exposure of roosting features present, connectivity of habitat and proximity of known roosts.

As a result of this assessment no further bat survey work is required.

**Table 3:** Summary of site suitability for bats.

| Suitability       | Roosting habitat   | Commuting/ foraging habitat  |
|-------------------|--|--|
| <b>Negligible</b> | No features found that are likely to be used                     | No features found that are likely to be used                         |
| <b>Low</b>        | A structure with one or more potential roost sites, suitable for | Habitat that could be used by small numbers of commuting or foraging |

|                 |   |   |
|-----------------|---|---|
|                 | opportunistic use. Unlikely to be used by large numbers of bats or on a regular basis.  | bats, but isolated and not well connected to other suitable features.   |
| <b>Moderate</b> | Structure with one or more potential roost sites, that could be used by bats – but unlikely to support roost of high conservation status.             | Continuous habitat connected to wider landscape that could be used by bats for foraging and/ or commuting.  |
| <b>High</b>     | Structure with one or more roost sites that are obviously suitable for larger numbers of bats on a more regular basis or for a longer period of time. | Continuous high-quality habitat that is well connected to the wider landscape and likely to be used regularly by foraging and/or commuting bats. Site near to and well connected to known bat roosts. |

*Table based on Table 4.1 of 'Bat Surveys for Professional Ecologists', BCT 2016*

### **3.3 Roost surveys- bats**

No roost surveys are required for this building.

### **3.4 Field survey – barn owl**

#### **3.4.1 Habitat assessment**

Barn Owl hunt over extensive areas, especially along the rougher edges of fields and woodland which support good number of voles and mice.

The agricultural fields, bigs and marshes around Lady Hall, provide reasonable foraging areas for barn owl as they are relatively sheltered and likely to support fair populations of small mammals.

#### **3.4.2 Suitability for and evidence of barn owl**

The modern barn is not accessible to barn owl, and has no suitable roosting or nesting habitat inside.

### **3.5 Other species**

The interior of the barn is suitable for some species of nesting bird, such as swallow. No old nests or evidence of current or previous nesting attempts were seen during the inspection.

There is some climbing vegetation on the northern elevation of the barn which could be used by nesting birds such as wren or blackbird. This vegetation should be removed over winter to avoid any impacts on nesting birds (nesting season typically 1<sup>st</sup> March to mid-August).

## **4 Assessment**

### ***4.1 Constraints on survey information***

Close access was possible to all the lower external walls and eaves. The endoscope was used to inspect all cracks and crevices within reach, which the high power torch could not illuminate. Upper walls and roof could only be inspected using high power torch and binoculars.

The interior of the barn was well lit and easy to inspect.

These constraints are not considered to affect the results of the inspection survey, but have been used to guide the need for any additional survey work at the building.

### ***4.2 Constraints on equipment used***

The conditions during the surveys were suitable for survey purposes and for the equipment used.

### ***4.3 Potential impacts of the development***

#### ***4.3.1 Designated sites***

The proposed development will not have any negative impacts on nearby designated sites.

#### ***4.3.2 Bat roosts***

The barn has negligible scope to host bats, as there are no suitable roosting sites likely to be used by crevice or open-roosting bats.

#### ***4.3.3 Bat commuting and foraging habitat***

The area surrounding the barns at Klinmire Field is a moderately good foraging location for bats with good connections to adjacent areas of high quality habitat. The proposed development is unlikely to have a detrimental impact on the quality of the foraging habitat for bats.

#### ***4.3.4 Barn owl***

The barn is not accessible to barn owl (either roosting or nesting).

### ***4.4 Legislation and Policy guidance***

Bats have declined in numbers dramatically across the UK and Western Europe in recent decades. Key factors linked to their decline are loss of roosting places due to building works and woodland destruction. Other factors implicated in their decline are changes in the countryside resulting in habitat loss and greater fragmentation of foraging habitats, and severing of commuting flightlines due to transport developments and hedgerow destruction.

As a consequence of these significant declines, bats and their roosts are protected under British and European law.

All bats are listed under Annexe IV of the EU Habitats Directive, and some under Annexe II. This law is transposed into English law into the Conservation of Habitats and Species Regulations (2010).

Bats are also protected in the UK under the Wildlife and Countryside Act 1981 (as amended).

As a result of the above legislation it is an offence to;

- Deliberately capture, injure or kill a bat,
- Disturb a bat such that their survival, reproductive capacity, or the wellbeing of the local population is affected
- Intentionally or recklessly disturb a roosting bat, or block access to its roost.

If the proposed works were assessed as likely to commit an offence under the above legislation, then a European Protected Species (EPS) mitigation licence would need to be sought.

Based on the evidence gathered from the inspection and desktop search, and the experience of the surveyor, it is unlikely that an offence will be committed by the proposed development under the above legislation, and as such no EPS licence will need to be obtained.

#### Barn owl

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), all wild birds are protected from being killed, injured or captured. Under this legislation their nests and eggs are also protected from being damaged, destroyed or taken (this includes nests in the process of being built as well as those with eggs and/or chicks in).

Barn owl receive additional protection under schedule 1 of the above legislation, where they, their nests, eggs and chicks are protected against harm and also against disturbance whilst at the nest site.

Based on the evidence gathered from the inspection survey, and the experience of the surveyor, it is unlikely that an offence will be committed by the proposed development under the above legislation.

## **5 Recommendations and mitigation**

### **5.1 Further survey**

No further survey is required.

The findings of this inspection report are valid provided that work commences within 12 months of the date of this report.

### **5.2 Avoidance and mitigation measures**

#### **5.2.1 Proposed mitigation for roost sites**

No specific mitigation or avoidance measures are required, as it is considered that the modern barn is not suitable habitat for roosting bats.

In the unlikely event that a bat is discovered during building works, all work must stop and South Lakes Ecology (or a licenced ecologist) contacted for advice as to how the works can proceed.

#### **5.2.2 Proposed mitigation for foraging and commuting habitat**

No impacts are anticipated on foraging and commuting habitat, so no specific mitigation is required.

### **5.3 Mitigation licences**

As stated in section 4.4, based on the evidence gained from the surveys, it is considered that the proposed building works on the modern barn (Barn 1) at Kilnmire Field, Lady Hall will not require an EPS licence.

### **5.4 Barn owl and other bird species**

There is no evidence of barn owl currently using this site, and it is not suitable for roosting or nesting barn owl.

There is potential for breeding birds to be present in and around the barn, though no evidence of current or previous nesting was found.

### **5.5 Enhancement measures**

Following local planning guidance, measures to encourage a net gain of biodiversity should be included for all new developments.

The proposals for the modern barn will not have any notable impacts on biodiversity. Additional measures to promote biodiversity gain should be targeted at birds and bats by providing artificial roost/ nesting boxes. Swifts were observed feeding over the barns, a species that is in decline in the UK. Swift nest boxes (either external or integrated boxes) should be installed high on either of the gable ends of the new building. These birds are colonial breeders, so at least three boxes should be installed at the property. For detailed advice and information on buying or making boxes please refer to <https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/create-a-high-home-for-swifts> and <https://www.swift-conservation.org/Leaflet%20-%20Swift%20Nest%20Bricks%20-%20installation%20&%20suppliers-small.pdf> .

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- JNCC, Bat habitat management pages <http://jncc.defra.gov.uk/page-2465>
- Details on the work done regarding issues with bats and breathable roofing membranes [www.batsandbrms.co.uk](http://www.batsandbrms.co.uk)
- Details on status of bats in Cumbria <http://www.cumberlandbatgroup.org.uk>
- Details of the status of barn owl in Cumbria [Species Statements | Cumbria Biodiversity Data Centre \(cbdc.org.uk\)](http://www.cumbria-biodiversity-data-centre.org.uk/species-statements)
- Stott,M., Callion, J.,Kinley, I., Raven, C. & Roberts, J. (2002) *The Breeding Birds of Cumbria* Cumbria Bird Club.
- <http://www.cumbriabirdclub.org.uk/latest-sightings>
- Cumbria Biodiversity Data Centre, Cumbria Mammal Atlas <http://www.cbdc.org.uk/wildlife-in-cumbria/cumbria-mammal-atlas/>
- Cumbria Biodiversity Data Centre, Cumbria Bird Atlas non-passerines [Cumbria Bird Atlas | Cumbria Biodiversity Data Centre \(cbdc.org.uk\)](http://www.cumbria-biodiversity-data-centre.org.uk/bird-atlas)

## Appendices

### i) *Photographs*



**Image 1.** Northern elevation showing large metal doors.

Small gaps above the doors could potentially allow access to the interior for small birds and for bats.



**Image 2.** East gable. Note the height of the building, which would make it suitable for swift nest boxes (proposed enhancement measure).



**Image 3.** South and east elevations showing lack of roost features for bats.



**Image 4.**  
Inside of the corrugate roof with metal framework. No suitable roost sites for bats, or for barn owl.



**Image 5.**  
Interior of the modern barn, western end.  
  
Interior is light and airy, with no likely roost features for bats.



**Image 6.**  
Interior of modern barn showing mezzanine floor.