



**KNOWSLEY FARM,  
STANLEY**

## **FURTHER SURVEY OF BUILDING FOR BATS**

**Prepared for  
Robert Poole**

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## **1. INTRODUCTION**

- 1.1 This report presents the results of evening surveys for bats of a milking parlour building at Knowsley Farm in Stanley, Staffordshire undertaken by Apex Ecology Limited. The survey was a recommendation of the preliminary roost assessment report of a survey undertaken by Apex Ecology in April 2021; see *Knowsley Farm: Preliminary Roost Assessment of Buildings May 2021* (Report Ref: MR/210505).
- 1.2 The surveys have been undertaken for Robert Poole the owner of the property. Refurbishment works are proposed for the farmhouse, with the adjoining milking parlour to have the roof removed and upper walls dismantled. From herein the milking parlour building is termed 'the building'.
- 1.3 Bats and their roosts are legally protected under European and domestic legislation and they are a material consideration during the determination of planning applications and during works that could potentially affect bats or their roosts. A summary of the key legislation protecting bats is provided in Appendix I.
- 1.4 Knowsley Farm is located approximately 6km southwest of the centre of the town of Leek and 3.5km east of the village of Stockton Brook. The site is set into a rural mainly pastoral agricultural landscape with many open fields bordered by hedgerows. Several woodlands are close by such as The Dingle and The Plantation at around 180m and 350m east respectively. Extensive woodland is also located nearby with the woodland around Rose Bank Farm around 475m to the north. The approximate OS grid reference for the site is SJ 94744 51314.
- 1.5 The report describes the methods used for the surveys and any constraints encountered, along with the results of the surveys, including a description of any evidence of bats found. It provides an assessment of the suitability of the building for roosting bats; interprets the findings in light of the proposals and makes recommendations.
- 1.6 Bats and their roosts are legally protected under European and domestic legislation. A summary of the key legislation protecting bats and their roosts is provided in Appendix I.

## **2. SURVEY METHODOLOGY**

- 2.1 Three evening surveys to watch for bats emerging from the building were carried out on the 3<sup>rd</sup> and 19<sup>th</sup> June and the 29<sup>th</sup> July 2021. The surveys commenced approximately 0.5 hours before sunset and finished 1.5 – 2 hours after sunset.
- 2.2 The surveys were undertaken by Max Robinson, Neil Watkin and Carrie Alcock. Max and Neil are licensed to survey for and to handle bats:
- 2.3 The surveyors were positioned externally around the building during the surveys to watch for emerging bats. The surveyors were positioned so as to ensure best coverage of the building.
- 2.4 The surveyors used Anabat Scout bat detectors (from Titley Electronics, Australia) to identify the presence and identity of bats. This model of bat detector has three modes of detection, heterodyne, frequency division and full spectrum. Bat calls picked up by the detectors were written onto SD cards and, where necessary, analysed on a PC to confirm species.
- 2.5 The table below summarises the weather conditions during the evening and dawn surveys.

| <b>Date</b>                | <b>Weather Conditions</b>                                              | <b>Temperature</b>           |
|----------------------------|------------------------------------------------------------------------|------------------------------|
| 3 <sup>rd</sup> June 2021  | Dry, 90% cloud cover, light breeze (BS2)                               | Start: 14.8°C<br>End: 12.7°C |
| 19 <sup>th</sup> June 2021 | Dry with light drizzle developing, 40% cloud cover, light breeze (BS2) | Start: 13.4°C<br>End: 11.1°C |
| 29 <sup>th</sup> July 2021 | Dry, 80% cloud cover, light breeze (BS2)                               | Start: 16.4°C<br>End: 14.1°C |

### **Constraints to the Survey**

- 2.6 On the third survey visit hay bales had been stored within the building and this may have covered evidence of bat use and possibly deterred bats from using the building internally.

### **3. SURVEY FINDINGS & INTERPRETATION**

#### ***Evening Emergence Surveys***

- 3.1 A single species of bat was recorded in small numbers as using the building for roosting, this species being common pipistrelle.
- 3.2 During the first emergence survey on the 3<sup>rd</sup> June 2021 at 21:58 a common pipistrelle *Pipistrellus pipistrellus* emerged from the ridge tiles adjacent the main house and flew westward. A second common pipistrelle emerged from a gap between the wall plate and wall top above the door on the south side of the building.
- 3.3 On the second emergence survey on the 19<sup>th</sup> June 2021 two common pipistrelle emerged from the ridge tiles of the milking parlour building near to the main house. The first bat emerged at 21:58 and flew southwest and the second bat emerged at 22:05 and flew southward.
- 3.4 On the third survey of the 29<sup>th</sup> July no bats were seen to emerge from the milking parlour building but it is likely a bat emerged from the main house as a common pipistrelle bat was recorded early in the survey at 21.28 and flew around the farmhouse from the north. It is not clear if the bat did emerge from the farmhouse but is deemed likely to have done so due to the timing of activity.

#### ***General bat activity during the surveys***

- 3.5 On the 3<sup>rd</sup> June 2021 survey one and at times two common pipistrelle were recorded foraging extensively to the south and west of the building and for short periods in the courtyard to the north. A third common pipistrelle briefly joined the other two foraging along the tree line on the south of the building at 22:10. Activity remained fairly constant throughout the survey, but no other species were recorded.
- 3.6 On the 19<sup>th</sup> June 2021 survey bat activity was more intermittent than on the first survey. Only occasional passes were recorded, largely to the south of the building near to the tree canopies. A noctule bat *Nyctalus noctula* was noted foraging (but not seen) at 22:02 and a brown long-eared bat *Plecotus auritus* was observed briefly near to the trees at the south.
- 3.7 On the 29<sup>th</sup> July 2021 one and at times two and three common pipistrelle were recorded foraging extensively to the south and west of the building around the garden, foraging at height. Bat activity was also high over the farmyard to the north. Several noctule passes were also recorded with early passes visual recordings were noted as foraging at height, later passes it was too dark to see the bats but is assumed that foraging behaviour was also at height. Activity remained fairly constant throughout the survey, but no other species were recorded.
- 3.8 throughout the evening surveys regular checks were made inside the milking parlour but no bats were recorded within the building.

### **Interpretation**

- 3.9 A common pipistrelle bat roost has been found associated with the building during the surveys. As the building offers high roosting potential associated gaps at the ridge tiles, gaps in the brickwork and at the eaves, then a precautionary and licensed approach to roof and wall dismantling works is advised and set out in the following chapter.

#### **4. RECOMMENDATIONS**

##### **Bats**

- 4.1 The surveys have shown that the building is used by common pipistrelles, for roosting. In view of the legal protection afforded to bats (see Appendix I), a statutory European Protected Species (EPS) development licence would need to be sought from Natural England to undertake the proposed conversion of the buildings and roof dismantling of the building.
- 4.2 In order to issue a licence, Natural England would require detailed and up-to-date information about the status of bat roosts and bat use of the building. In addition, a commitment to mitigation and compensation measures where applicable would be necessary and planning permission (usually full) would need to have been granted for the development to proceed where relevant.
- 4.3 In order to obtain a licence from Natural England, any development or work proposals would need to satisfy the following three tests:
- there is no satisfactory alternative;
  - the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range; and
  - the action authorised preserved public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.
- 4.4 An individual EPS licence could be sought, although it may be possible to undertake the proposals under the 'bat mitigation class licensing' (BMCL) scheme subject to the proposals meeting certain (non-ecological) criteria specified under BMCL. The other option is an individual mitigation licence. Apex Ecology could advise on this, with both Helen Ball and Max Robinson Registered Consultants able to register sites under BMCL.

##### **Replacement Roosting Provision and Compensation**

- 4.5 There is also an obligation under the NERC Act to ensure no net loss of roosting sites (see Appendix 1).
- 4.6 Examples of replacement roosting provision are given below. These are given in light of the species and small numbers of non-breeding common pipistrelle, bats present.
- Maintenance of existing roosting locations and access points. This may be an option depending upon the proposals for the building. Replacement of roof tiles enables roost points and new roost opportunities to be reinstated or created.
  - Provision for bats to roost below ridge tiles and between tiles and underfelt. This could be achieved by mortaring ridge tiles in place to

create a void below that could be accessed by bats for roosting. In addition, access points consisting of small gaps, c. 20mm high by 50mm long where the ridge tiles meet the common roof tiles would need to be created. Small gaps could also be left between the common roof tiles to enable bats to access spaces between the underfelt and tiles.

- Traditional bitumen hessian (type1F) underfelt would need to be used to line the roof (not breathable roofing membrane (BRM) or type 5U bitumen underfelt). Based upon current research and mounting anecdotal evidence non-woven breathable roofing membranes BRMs pose an entanglement threat to bats due to the continuous polypropylene filaments that make up the products. When used in bat roosts, it can also result in deterioration of the BRM (due to wear and tear of bats roosting and rubbing against it and from urine and staining from natural oils present in bat fur) resulting in a reduction in the effectiveness of the membrane. Please see Waring et al. (2013) and <http://www.batsandbrms.co.uk>
- Any treatment of roof timbers would need to be done using a chemical approved by Natural England for use in bat roosts (a list of approved chemicals can be provided by the bat ecologist).
- Provision of a small number bat boxes. This could be achieved by installing commercially available bat boxes into the walls of the milking parlour building (or other buildings on site, thus ensuring longevity and removing the need for maintenance of wall fixings). Several companies now manufacture suitable boxes for this purpose and they can be bought 'off the shelf' or have a matching brick face made to match the building materials. Other types of boxes can be set into the walls and bricks of the building cut to face the bat box, such as the Schwegler 1FR. Schwegler boxes are made from woodcrete or similar (a blend of wood, concrete and clay) and have long durability (reputed to be 20-25 years). Should a different brand of boxes be used, these should have a similar durability; it is not recommended wooden boxes be used.
- The bat boxes would need to be located towards the tops of the walls (at least 3-4m above ground). Boxes should not be located facing due south and their access points would need to be free from obstruction. It is best not to fix boxes above windows or doorways. Deflector boards to catch bat droppings can be installed below the boxes if necessary.
- Given that boxes and their fixings require maintenance it is advised that any boxes attached to walls (rather than built into them) should be installed in areas where there is no risk to people should a box become loose and fall. Where possible, however, it is recommended that box types be selected that can be built into the structure of the walls.
- A licensed bat ecologist should brief all persons (roofers, builders, etc.) undertaking the work prior to any works commencing. The briefing session would need to cover legislation protecting bats, identification of the species present, identification of bat droppings, where bats are likely

to be roosting and the procedure to follow in the event that bats are found during work;

- The building should be surveyed by the licensed bat ecologist for signs of bat occupation immediately prior to the commencement of works. This should involve a visual inspection of the interior of the building for the presence of bats;
- The roof tiles should each be carefully lifted by hand and inspected below for signs of bats. Tiles should be lifted directly upwards to avoid accidental crushing of any bats roosting beneath. Any crevices, such as between the tiles and tops of the walls or between tiles and rafters should be inspected by means of a torch and/or endoscope;
- Any gaps within the walls should be carefully inspected for signs of bats, using an endoscope and carefully dismantled by hand;
- Works should be overseen by a licensed bat worker.
- External lighting installed as part of any proposals in the vicinity of any replacement roosting would need to be limited to ensure these areas remained dark. The use of low lux intensity lighting coupled with low level designs, possibly with timers or motion detectors would help to reduce light spill.

4.7 Replacement roosting provision may also be a requirement of the LPA to ensure no net loss of roosting sites under NERC Act obligations (see Appendix 1).

#### **Precautionary Working Practices**

4.8 Precautionary working practices would need to be put in place during works to the building according to the licence conditions. All personnel undertaking the work would need to be made aware of these requirements and follow the advice below.

- This report and a copy of the EPS licence once granted would need to be made available on the working site and all parties working on the site made aware of their presence and access allowed to them. The information the documents contain must be adhered to by all site operatives in order for works to be carried out within the law. Failure to follow the advice set out in this report and according to the licence conditions may result in an offence being committed and delays to work.
- The personnel undertaking the work should understand that bats are possibly and likely present. Information on bat identification can be found readily on the Bat Conservation Trust website.
- Some works such as any ridge tile removal around the roost locations (and possibly other areas) will need to be supervised by a licensed ecologist. Other areas, for example, common roof tile

removal/replacement/re-mortaring or reroofing) may need to be supervised by the licenced ecologist.

- Roof tiles would need to be carefully stripped by hand to avoid injury to any undiscovered bats that may be present. The tiles would then need to be lifted vertically and outwards and inspected below and on the backs of tiles for bats or signs of bats, such as droppings. To ensure no bats were trapped or entombed by works, bat exclusion devices may well need to be installed prior to works taking place (these can only effectively be used at times of year bats are active and not during winter months when bats may be deep in torpor).
- Any bats located would need to be moved by the ecologist into a bat box located in a secure position on site in accordance with the licence conditions.
- Should bats be found to be present when the ecologist is not on site, they would need to be left in situ and not handled or touched. If a bat is disturbed and it wishes to fly then it should be allowed to do so. If a bat is uncovered, for instance by lifting of a tile, then the tile should be gently placed back with care taken not to crush the bat below. Alternatively, a plastic or cardboard box with ventilation holes could be temporarily placed over the bat to protect the bat.
- There would be a need for timing restrictions when certain works could take place to reduce impacts on bats. For instance, works affected roosting locations would need to be timed to avoid periods of cold weather during the winter months, such as prolonged spells of cold or sudden cold snaps (such as during frosts or snow/icy weather). Licences do not usually cover impacts on hibernation roosts/hibernating bats.
- Design and installation of the bat roosting and access provision, and any precautionary working practices would need to be supervised by the ecologist as a condition of the Natural England licence.

## **Birds**

- 4.9 Any demolition or roof stripping works of the buildings would need to take account of the potential presence of nesting birds. The presence of nesting birds can be avoided as a constraint to the proposals by timing relevant works to avoid the bird nesting season. Should the works need to be carried out during the bird nesting season then surveys and a watching brief would need to be carried out during works to check for the presence of nesting birds. The findings of the surveys and watching brief would be used to ascertain the best method to proceed to avoid impacting upon nesting birds. The bird nesting season is generally deemed to run from March to July/August inclusive, although some species can nest outside this period.
- 4.10 To off-set loss of nesting sites within the site, it is recommended that bird boxes be included as part of the development. It would be best to install a range of box styles to cater for a number of species and targeted at species known to be

present in the area or using the site. Advice from the ecologist sought on this should boxes be installed once proposals have been finalised.

- 4.11 Given the number of trees present on site there are many suitable locations on site for bird boxes to be located, hence boxes may be best installed on trees and/or buildings not subject to the planning proposals. Boxes must not be located facing due south (unless heavily shaded) and their access points would need to be free from obstruction. Given that boxes and their fixings require maintenance, it is advised that boxes should be installed in areas where there is no risk to people should a box become loose and fall off the wall.

## **5. REFERENCES**

Collins, J. (ed). (2016). *Bat Surveys for Professional Ecologists – Good Practice Guidelines*. 3<sup>rd</sup> Edition. Bat Conservation Trust, London.

Mitchell-Jones, A. J. (2004). *The Bat Mitigation Guidelines*. English Nature, Peterborough.

Waring, S. D., Essah, E., Gunnell, K. and Bonser, R. (2013), Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom. *Architecture & Environment*, 1 (1). pp. 1–13. ISSN 2329-2296 doi: <https://doi.org/10.12966/ae.5.1.2013> Available at <http://centaur.reading.ac.uk/33044/>

## **APPENDIX 1 - LEGISLATION RELATING TO PROTECTED SPECIES DISCUSSED IN THE REPORT**

The information below is intended only as guidance to the legislation relating to these species and relates solely to England and does not purport to provide legal advice. It is recommended that the legislative documents be referred to for the full legal wording and the services of a relevant specialist sought where legal advice is required.

### **Bats**

There are seventeen different species of bat in the UK; some are very rare whilst others are widespread. However, because the populations of most species have declined in past decades, all British bats have been protected by law.

Bats are protected in England under European Legislation via the Conservation (Natural Habitats and Wild Flora and Fauna (92/43/EEC)) or 'The Habitats Directive'. The Directive is transposed into UK law via the Conservation of Habitats and Species Regulations 2010 (Statutory Instrument 2010/0490 known as the Habitats Regulations), which came into force on the 1<sup>st</sup> April 2010. The Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") consolidate and update the Conservation (Natural Habitats, &c.) Regulations 1994 (Statutory Instrument 1994/2716) and amendments. Due to their inclusion on Schedule 2 of the Habitats Regulations, bats are considered 'European Protected Species'.

In summary, this legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat;
- damage or destroy a breeding site or resting place of any bat;
- possess a bat (alive or dead) or any part of a bat.

Disturbance of bats includes in particular any disturbance which is likely:

(a) to impair their ability:

- (i) to survive, to breed or reproduce, or to rear or nurture their young; or
- (ii) to hibernate or migrate; or

(b) to affect the local distribution or abundance of the species to which they belong.

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended), which has also been amended by the Countryside and Rights of Way (CROW) Act, 2000.

In summary, this legislation makes it an offence to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection;
- intentionally or recklessly obstruct access to any structure or place which any bat uses for shelter or protection.

In addition, under UK's Biodiversity Action Plans seven British bat species are listed as 'Priority Species'. These include barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*,

brown long-eared *Plecotus auritus*, greater horseshoe *Rhinolophus ferrumequinum* and lesser horseshoe *Rhinolophus hipposideros*.

## **Birds**

All wild birds, their nests and eggs are protected by law under the Wildlife and Countryside Act 1981 (as amended). It is, therefore, an offence (subject to certain exceptions) to:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- take or destroy the egg of any wild bird.

In addition to the above, in accordance to amendments of the Wildlife and Countryside Act by the Countryside and Rights of Way Act 2000, it is an offence to:

- intentionally or recklessly disturb any species listed on Schedule 1 of the Wildlife and Countryside Act whilst building a nest, or whilst it is on, in or near a nest containing eggs or young; and
- disturb the dependant young of a Schedule 1 bird.

For example, barn owl is protected under Schedule 1 of the Wildlife and Countryside Act, protecting them from intentional or reckless disturbance during the breeding season (which is normally considered the time from when the female makes the first nest 'scrape' and lays the first egg until the time when the last dependent young stops returning to the nest (English Nature, 2002/3)).

## **NERC ACT AND BIODIVERSITY**

A number of UK habitats and species are also included on the list of habitats and species which are of principal importance for the conservation of biodiversity in England as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act. The NERC Act came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of NERC Act to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the Hen Harrier has also been included on the list because without continued conservation action it is unlikely that the Hen Harrier population will increase from its current very low levels in England. In accordance with Section 41(4) the Secretary of State will, in consultation with Natural England, keep this list under review and will publish a revised list if necessary.

The impact that this legislation has on the Planning system is also outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory obligations and their Impact within the Planning System. This states:

*The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult English Nature [now Natural England] before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species' protection provisions affecting the site concerned.*