
DAYTIME BAT SURVEY & BAT EMERGENCE SURVEYS

GOW HOLE FARM, FURNESS VALE, HIGH PEAK



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**RACHEL
HACKING
ECOLOGY**

Bowden Hall,
Bowden Lane,
Marple, Stockport
SK6 6ND
0161 465 8971

www.rachelhackingecology.co.uk
mail@rachelhackingecology.co.uk



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1.0 INTRODUCTION

Site Information

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2020 by Mr & Mrs Wood to undertake a series of bat surveys of two barns located within the grounds of Gow Hole Farm, Furness Vale, High Peak, Derbyshire (O.S. grid reference: SK 00948 83981 – see Figure 1). The proposed development site comprises two two-storey barns which are currently used for storage only. The barns are enclosed by hardstanding. The site is surrounded by agricultural land. The habitats immediately surrounding the site offer limited suitable bat foraging and commuting opportunities but good foraging habitat occurs to the south, along the River Goyt corridor.

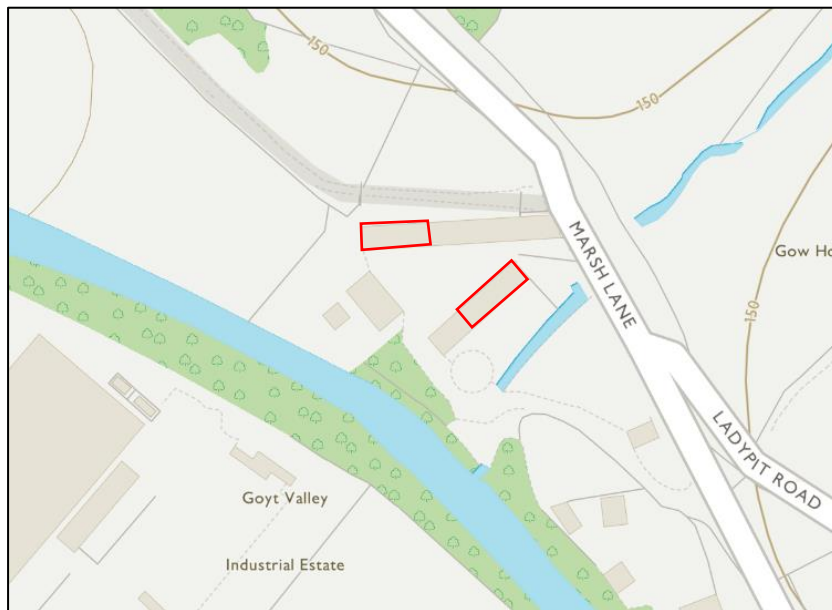


Figure 1 showing the location of the two barns at Gow Hole Farm

Description of Development

- 1.2 The site will be the subject of a planning application for the conversion of the barns into residential dwellings. The site has existing planning permission (Ref: HPK/2015/0336).

Biodiversity in Planning

- 1.3 Biodiversity is a material consideration, and Local Planning Authorities (LPAs) have a requirement to consider biodiversity and protected species when determining planning applications. Section 15 of the National Planning Policy Framework (February 2019) gives specific reference to minimising the impacts of development on biodiversity. Local and Neighbourhood plans also provide guidance towards protecting and enhancing biodiversity, including priority habitats and notable species.

Legal Context

1.4 All bat species are protected under the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit), which make it an offence to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

The Wildlife & Countryside Act 1981 (as amended) contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

Proposed development works that are likely to disturb or destroy bats or their roosts will need to obtain a licence from the relevant Statutory Nature Conservation Organisation (e.g., Natural England) prior to work commencing.

2.0 METHODOLOGY

Daytime Bat Survey

- 2.1 A daytime bat survey of the site was undertaken to search for, and to assess the potential for, a bat roost within the buildings.
- 2.2 An external survey was carried out, which included, for example, looking for gaps between any soffit boards and walls, gaps between window frames and the walls, and looking for bat droppings on the walls and window ledges. An internal survey was also carried out, with particular focus on gaps in walls, cracks in roof beams, and any evidence of bat activity, such as bat droppings, in the internal spaces.
- 2.3 A pair of close-focussing binoculars and a high-powered torch were used to search for evidence of bats externally.

Bat Emergence Surveys

- 2.4 In addition to the daytime bat survey inspection, two dusk bat emergence surveys were undertaken in accordance with the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (2016). For each activity survey, two surveyors, infra-red and thermal imaging cameras monitored the property, to ensure complete coverage for any emerging bats. The emergence surveys began 15 minutes before dusk and continued for 90 minutes after dusk. The surveyors used Anabat and Echometer Touch Pro bat detectors to record the echolocations of emerging bats. A thermal imaging camera and infra-red cameras were also used.

Personnel and Seasonal Timing

- 2.5 Joel Hacking (Senior Ecologist) carried out the daytime bat survey on the 20th April 2021. Joel is experienced and fully trained in protected species surveys and holds a Natural England Level 2 Class Survey Licence for bats (ref: 2016-24701-CLS-CLS). The weather at the time of the survey was sunny and dry.
- 2.6 The bat emergence surveys were undertaken by Joel Hacking and Dr. Rachel Hacking (Principal Ecologist), as well as an assistant, an infra-red camera and a thermal imaging camera. The emergence surveys were carried out on 18th May 2021 and 10th June 2021.

Survey Constraints

- 2.7 Daytime bat surveys can be conducted at any time of the year. The property was fully accessible. There were no constraints to the survey.

3.0 RESULTS

Site Description

- 3.1 The site at Gow Hole Farm comprises two large barns, constructed from stone and both with pitched, tiled roofing. The barns are used for storage only.

Barn 1

External Assessment

- 3.2 The external stone walls are in reasonable condition and are partially rendered (see Photograph 1). The external render offers no suitable cracks for bats to exploit. The rear elevation and gable wall offer some gaps between stones (see Photograph 2). A small lean-to is attached to the gable end, and this has a sheet-metal roof.



Photograph 1 showing the exterior of Barn 1



Photograph 2 showing the gable end of the building

- 3.3 The roof is pitched with clay tiles. The roof tiles are in position and flush to one another (see Photograph 3). The ridge tiles are in situ and mortared. The roof edges are mortared. The barn does not have soffits or bargeboards, and the roof joists penetrate the upper brick courses.



Photograph 3 showing the roof of the building

- 3.4 Soffit boards and bargeboards are present on the roof edges. These are in excellent condition. They are all flush with the brickwork. No possible access points or crevices suitable for roosting bats were found within the soffits or bargeboards.

Internal Assessment

- 3.5 Internally, the upper floor of Barn 1 is accessible and is open to the roof, with no separate roof void present (see Photographs 4 and 5). The roof joists are complete, with no major cracks or gaps. The roof is lined with felt, and there are no major tears in the lining. The internal stone walls are not mortared, with gaps present between the stones. Several of the gaps were searched with an endoscopic camera, with no signs of bat roosting present. Daylight is present at the roof edges.



Photograph 4 showing the upper floor and internal stonework of Barn 1



Photograph 5 showing the roof structure of Barn 1

- 3.6 Small numbers of scattered bat droppings (<10) were found within Barn 1, including a couple attached to one of the internal walls (see Photograph 6). No major concentrations of bat droppings are present.



Photograph 6 showing one of the bat droppings on the wall of the barn

Barn 2

External Assessment

- 3.7 Barn 2 is a large two-storey barn constructed from stone (see Photograph 7). The external stonework is complete and mortared. The front elevation is rendered, with no major cracks in the render (see Photograph 8). The window frames are flush to the surrounding masonry.



Photograph 7 showing the interior of the property



Photograph 8 showing the exterior of the barn

- 3.8 The roof is pitched and tiled with clay tiles (see Photograph 9). The roof tiles are in-situ, and the ridge tiles are present and mortared. The roof is partially lifted on the rear elevation, exposing some of the tiles (see Photograph 9).



Photograph 9 showing the roof of the barn

Internal Assessment

- 3.9 Internally the barn is used for storage. A large roof void is present, covering the expanse of the roof space. The roof joists are complete and without cracks or gaps for bats to exploit (see Photographs 10 and 11). The roof is lined with felt, with no major tears in the lining. The internal stone walls are partially mortared.



Photograph 10 showing the interior of Barn 2



Photograph 11 showing the roof void of Barn 2

- 3.10 A small number of bat droppings are present in the roof void (<15), with several collected on the gable wall (see Photograph 12). Insect feeding remains are also present in the roof void.



Photograph 12 showing the bat droppings on the wall of Barn 2

4.0 BAT EMERGENCE SURVEYS

- 4.1 During the external and internal survey, evidence of bat activity was found, in the form of scattered bat droppings in the barns. The property provides entry and exit points for bats. No evidence of a roost of high conservation concern was found. Due to the observation of bat usage in the property, and therefore the moderate roost suitability for the property to support a bat roost, two bat emergence surveys were recommended.
- 4.2 Figure 2 shows the locations of the bat surveyors during the surveys (purple stars), and the location of a thermal imaging cameras (red-stars).

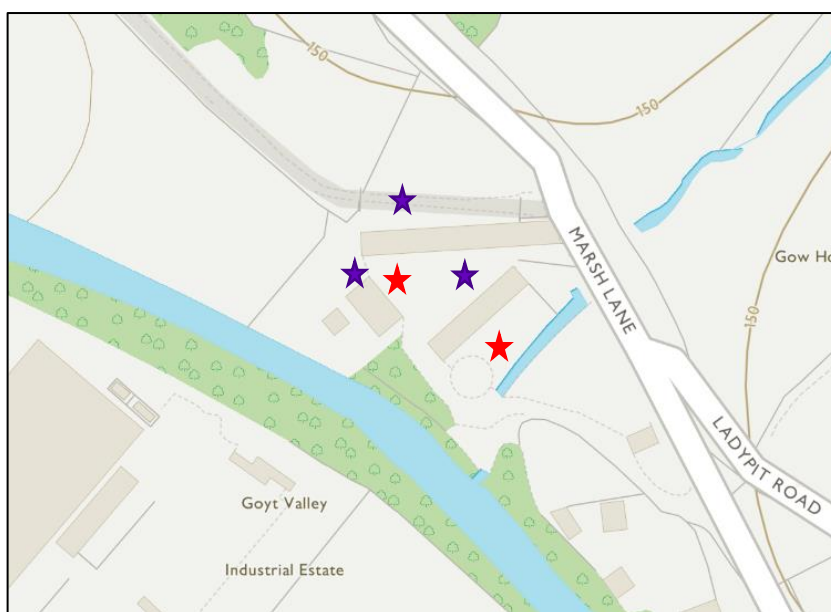


Figure 2 showing the locations of the surveyors (purple stars) and thermal imaging cameras (red stars)

- 4.3 No bats were observed emerging from the barns during the surveys. Low levels of bat activity were recorded during the site visits, with Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule *Nyctalus noctula* recorded during the surveys.

Bat Activity Tables

- 4.4 Bat activity from the emergence surveys is recorded in Tables 1 and 2 below.

<i>Table 1. Results from first emergence survey</i>				
Survey Type	Date	Average Temp (°C)	Sunset/ Sunrise	Weather
Emergence	18/05/2021	10°C	21:30	Overcast, dry, cool
Results				
No bats emerged from the barns.				
Soprano Pipistrelle recorded foraging over Barn 1 at 21:31.				
Common Pipistrelle recorded foraging near to the trees on the east of the site at 21:42.				
Soprano Pipistrelle recorded foraging over the site intermittently between 21:54 and 22:30.				
Distant Noctule heard foraging at 22:00				

<i>Table 2. Results from second emergence survey</i>				
Survey Type	Date	Average Temp (°C)	Sunset/ Sunrise	Weather
Emergence	10/06/2021	18°C	21:35	Dry, mild
Results				
No bats emerged from the barns.				
Soprano Pipistrelle recorded foraging intermittently over the land behind Barn 1 between 22:15 and 23:00.				
Soprano Pipistrelle recorded foraging over Barn 2 at 21:55.				
Common Pipistrelle recorded foraging nearby between 21:42 and 22:04.				

5.0 SUMMARY AND RECOMMENDATIONS

Summary of Findings

- 5.1 Evidence of a bat activity was found in the barns at Gow Hole Farm. Scattered bat droppings are present in both barns, and insect feeding remains are present in the roof void of Barn 2. Two dusk bat emergence surveys, undertaken at an optimum time of year, indicate that a roost is no longer active on the site.
- 5.2 All the surveys were undertaken during optimum weather conditions with no impediment to any of the visits. The temperatures were optimum prior to and during the surveys.

Recommendations

- 5.3 It is the opinion of the author of this report that the development can proceed without the need for further survey work due to the negligible potential of the building to support bats and the robust survey effort that has taken place to reach this conclusion. However, if the work is delayed by longer than two years from the date of this survey, a further bat survey will be required to update the findings.
- 5.4 It is recommended that two Greenwoods Eco Habitat single cavity bat boxes be installed on each barn, following completion of the development, to enhance bat roosting habitat on the site.
- 5.5 It should be noted that bat absence is very difficult to prove definitively due to their mobility and size, and single or small numbers of bats are able to roost in extremely small spaces, such as in gaps between panels. The development work should be undertaken with care, for example with roof tiles lifted rather than dragged.
- 5.6 If during development works a bat (or an accumulation of bat droppings) is discovered at any time, work is to temporarily cease whilst an experienced bat ecologist is contacted for guidance and assistance. This can be Rachel Hacking Ecology (0161 465 8971) who undertook the initial survey, any licensed bat worker, or the Bat Conservation Trust (BCT) helpline (0845 1300 228).

6.0 REFERENCES

Collins, J. (ed.). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition*. Bat Conservation Trust. London.

Mitchell-Jones, A.J, & McLeish, A.P. Ed., (2004) *3rd Edition Bat Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

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